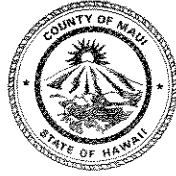


Rec'd on 6/14/04

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 14, 2004

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

Dear Ms. Salmonson:

RE: Final Environmental Assessment (FEA) for the Kaanapali Parcel 10-H Residences Located at TMK: 4-4-006: 056, on 7.650 Acres of Land in Kaanapali, Lahaina, Island of Maui, Hawaii (EA 2003/0009)

The Maui Planning Commission at its regular meeting on June 8, 2004 accepted the Final Environmental Assessment (FEA) for the subject project, and issued a Finding of No Significant Impact (FONSI). Please publish the FEA in the June 23, 2004, Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the FEA. If you have any questions, please call Ms. Kivette A. Caigoy, Environmental Planner, of our office at 270-7735.

Sincerely,

Michael W. Foley
Director of Planning

MWF:KAC:do

Enclosures

- c: Wayne A. Boteilho, Deputy Planning Director
- Clayton I. Yoshida, AICP, Planning Program Administrator
- Kivette A. Caigoy, Environmental Planner
- Ann Cua, Staff Planner
- Applicant
- Project File
- General File
- K:\WP_DOCS\PLANNING\EA\2003\9_Kaanapali10HResSubd\OEQCTransmitFEA.wpd

2004-06-23 FONSI

JUN 23 2004

KAANAPALI SINGLE FAMILY RESIDENTIAL FILE COPY

SUBDIVISION

FINAL
HRS CHAPTER 343
ENVIRONMENTAL ASSESSMENT
FOR A COMMUNITY PLAN AMENDMENT

**KAANAPALI PARCEL 10-H
RESIDENCES**

TMK: (2) 4-4-006:056
Kaanapali, Lahaina, Maui, Hawaii

Prepared for:

Landtec, Inc.
2530 Kekaa Drive, Suite C-1
Kaanapali, Maui Hawaii 96761

Prepared by:

Chris Hart and Partners
Landscape Architecture and Planning
1955 Main Street, Suite 200
Wailuku, Hawaii 96793
Phone: 242-1955
Fax: 242-1956



CHRIS
HART
& PARTNERS, INC.

MAY 2004



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I. PROJECT INFORMATION

A. Overview of the Request

The project involves the development of a 18-lot single family residential subdivision to include a main dwelling and *ohana* (accessory) dwelling on each lot and related subdivision improvements. The project site comprises an area of 7.650 acres and is situated on the *mauka* side of Honoapiilani Highway approximately 800 feet north of the Kaanapali Parkway intersection at the Kaanapali Resort on the Island of Maui. The project site is not located within the County's Special Management Area pursuant to Hawaii Revised Statutes Chapter 205A. This Environmental Assessment is intended to comply with the provisions of HRS Chapter 343, since the proposed action involves a Community Plan Amendment from Light Industrial and Open Space use to Single Family Residential use in the West Maui Community Plan adopted by Ordinance No. 2476 (1996).

B. Project Profile

District:	Kaanapali, Hanakaoo Ahupuaa, Lahaina District, Island of Maui
Tax Map Key:	(2) 4-4-06: 56 (also referred to as "Parcel 10-H)
Project Name:	Kaanapali Residences
Location:	Abutting the <i>mauka</i> side of Honoapiilani Highway approximately 800 feet north of the Kaanapali Parkway intersection
Site Area:	7.650 acres
Applicant/Developer:	Landtec, Inc. 2530 Kekaa Drive, Suite C-1 Kaanapali, Maui, Hawaii 96761 Phone: (808) 661-3232 Fax: (808) 661-1921 Principals: Mr. Howard Kihune, Sr. and Mr. G. Robert Johnston
Landowner:	Kaanapali Development Corporation 10 Hoohui Road, Suite 304/305 Lahaina, Maui, Hawaii 96761

Planning Consultant: Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, Maui, Hawaii 96793
Phone: (808) 242-1955
Fax: (808) 242-1956
Contact: Mr. Christopher L. Hart, ASLA

Land Use Designations: State Land Use Classification-- Urban District

West Maui Community Plan-- Light Industrial use
with a strip of Open Space use along the frontage
with Honoapiilani Highway

County Zoning-- R-3 Residential District

Federal Flood Insurance Rate Map-- Zone "C", area
of minimal flood hazard

Existing Land Uses: Largely undeveloped with portions of the site used
as a plant nursery and landscape debris dumping
site. An operational groundwater well and pump
house are also onsite.

Proposed Land Use: 18-lot single family residential subdivision to
include a main dwelling and an *ohana* (accessory)
dwelling on each lot

Access: To be available from Kualapa Loop, a private road.

C. HRS Chapter 343 Accepting Agency

Agency: Maui Planning Commission
c/o Department of Planning
County of Maui
250 S. High Street
Wailuku, Maui, HI 96793
Phone: (808) 270-7735
Fax: (808) 270-7634

D. Major Land Use, Development and Construction Approvals

1. Community Plan Amendment that includes a Public Hearing and Recommendation by the Maui Planning Commission and final approval by the Maui County Council.



2. Subdivision approval from the Department of Public Works and Environmental Management (DPWEM), County of Maui.
3. Grading/Grubbing Permit approval from the DPWEM.
4. National Pollution Discharge Elimination System (NPDES) General Permit from the Department of Health, State of Hawaii.
5. Building, Electrical and Plumbing Permits for the dwelling units from the DPWEM.

E. Pre-Consulted Public Agencies and Private Interests

PUBLIC AGENCIES

1. Department of Planning, County of Maui: Meeting held on 2/4/04 with the Planning Director and staff to review proposed project. It was suggested that the following be incorporated in the EA report and project applications: a visual analysis showing relationship of the project to the Vintage project; a revised site plan showing a reduction in lots and inclusion of park sites; typical concept elevations and floor plans; and existing community plan and zoning maps.
2. Department of Public Works and Environmental Management, Water Reclamation Division, County of Maui: Meeting held on 7/29/03 with Mr. Jake Kosgrick, Lahaina Wastewater Treatment Facility plant operator to discuss odor problems; and meeting held on 8/11/03 with Mr. Tracy Takamine, Staff Engineer, to discuss odor problems and potential solutions. The odor problem occurs when sewage flows exceed a certain level.
3. State Historic Preservation Division, Department of Land and Natural Resources, State of Hawaii: Meeting between project archaeologist and Dr. Melissa Kirkendall, SHPD, to review methodology for reconnaissance survey.

PRIVATE INTERESTS

1. The Vintage Board of Directors and The Vintage Homeowners Association.
2. Kaanapali Royal Apartment Owners Association.

■

F. Consulted Public Agencies and Private Interests

The Draft Environmental Assessment for the Kaanapali Parcel 10-H Residences was published on March 23, 2004. Publication initiated a 30-day public review period ending on April 22, 2004. The Draft EA was mailed to agencies below and meetings were held with homeowners in the vicinity. All comment letters and responses are found in Appendix M.

PUBLIC AGENCIES:

Federal

1. Natural Resource Conservation Services
2. U.S. Army Corp of Engineers

State

1. Department of Health
2. Department of Transportation
3. Department of Land and Natural Resources
4. Historic Preservation Division
5. Department of Accounting and General Services
6. Department of Education
7. Land Use Commission
8. Office of Hawaiian Affairs
9. Department of Business E D T
10. Department of Hawaiian Home Lands

County

1. Department of Public Works and Environmental Management
2. Department of Water Supply
3. Department of Parks and Recreation
4. Fire Department
5. Police Department
6. Department of Housing and Human Concerns
7. Civil Defense

PRIVATE INTERESTS:

1. Maui Electric Company
2. The Vintage Board of Directors and The Vintage Homeowners Association
Meeting was held on 4/7/04 at the Landtec, Inc. office with 12 Vintage homeowners in attendance (See: Appendix N). No significant concerns were raised.

-
3. Kaanapali Royal Apartment Owners Association Meeting was held on 4/8/04 at the Landtec, Inc. office with 3 Vintage homeowners in attendance (See: Appendix N). No significant concerns were raised.

II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

The project site is located on the *mauka* side of Honoapiilani Highway approximately 800 feet north of the Kaanapali Parkway intersection at the Kaanapali Resort on the Island of Maui. The Kaanapali Resort is approximately four (4) miles north of the historic town of Lahaina. (See: Figures No. 1 and No. 2)

B. EXISTING LAND USE

The project site is largely undeveloped and primarily used as a plant nursery and as a landscaping debris dumping site (See: Figures No. 3, "Existing Conditions" and Nos. 7.1, 7.2 & 7.3, "Photographs"). Mature tree stands are situated along portions of the eastern and western property boundaries. A drainage ditch traverses through the property from the northwestern corner along the western boundary and extends through the middle of the property until it reaches the southeastern boundary. The southern and western property boundaries have steep grades. High voltage lines are located over the western boundary of the project site. A single-lane paved road provides access through the property from the southern boundary to the northeast corner of the property.

The following improvements are located on the project site: (1) a plant nursery on the southeastern portion of the site that is under lease to the Maui Marriott Hotel; (2) a vacant dwelling/sign painter's workshop near the central eastern property boundary; (3) a gravity well, pump house building, four (4) storage containers, a storage shed, and a electrical distribution step-down substation near the southern property boundary. The project site has been used for many years as a dump area for landscaping and miscellaneous debris and household refuse; this dumping use was recently stopped. Evidence of grading and grubbing activities is found throughout the subject property.



C. LAND USE DESIGNATIONS

State Land Use Classification:	Urban District
West Maui Community Plan:	Light Industrial and Open Space
County Zoning:	R-3 Residential District
Flood Zone Designation:	Zone "C"

D. SURROUNDING LAND USES

1. North: Kaanapali Golf Course Maintenance Base yard (Community Plan: Park/Golf Course; Zoning: R-3 Residential District);
2. East (*Mauka*): Fairway No. 13 of the Kaanapali South Golf Course (Community Plan: Park/Golf Course; Zoning: R-3 Residential District);
3. South: Lahaina Sewage Pump Station No. 2 and Hawaii Water Services Company Base yard (CP: Park/Golf Course; Zoning: R-3 Residential District); and
4. West (*Makai*): Honoapiilani Highway.

E. DESCRIPTION OF PROPOSED ACTION

The Applicant intends to develop a 18-lot single family residential subdivision, including a one or two story main dwelling with a detached *ohana* (accessory) dwelling on each lot (See: Figure No. 8, "Conceptual Landscape Plan- Plot Plan- Scheme 2"). Site improvements include grading, asphalt concrete private street, concrete driveways for the house lots, landscape planting, and site utilities. Site utilities consist of water; wastewater; electrical, telephone, and cable television; irrigation; and drainage systems. In addition, the project includes special on-site provisions for handling drainage. Work will also include the relocation of existing water, wastewater, drainage, and electrical systems.

In addition, the subdivision will include two neighborhood park sites at the entry to the project and on the south end of the project. The parks will be for passive recreation use and comprise an area of 0.11 acre and 0.55 acre, respectively.

The concept of this project is similar to other recent projects by the Applicant/developer in Lahaina Town and Napili that offered a main dwelling/*ohana* dwelling and lot package. These projects were priced in the



\$575,000 to \$650,000 range and have sold very well, an indication of the region's strong demand for fee simple and rental housing projects.

Although the building plans for the proposed residences are very conceptual at this early stage, the project architect has been directed to review and utilize the "Guidelines for Sustainable Building Design in Hawaii" adopted by the State Environmental Council. Design considerations will include but not be limited to the use of solar water heating; incorporating an exercise circuit linking the project's two (2) private parks on both ends of the project site; use of lamps and ballasts with the highest efficiency; maximizing day lighting through the use of vertical fenestration and sky lights; use of quality, energy efficient appliances and fan systems; and the installation of a non-potable water irrigation line for common landscaped areas.

The estimated project development cost is between \$9.9 million to \$10.4 million.

G. PURPOSE AND NEED

The Applicant is attempting to provide needed housing opportunities in West Maui. Over the past ten years, the housing market in West Maui has not been able to keep pace with the demand for resident housing. This situation is largely due to the limited supply of reasonably-priced land for residential development. The West Maui Community Plan intended to provide for the housing needs of the region; however, circumstances significantly limited the availability of land for residential development. Specifically, housing supply in West Maui was significantly impacted by the suspension of development of two large master planned residential projects, namely, the 4,800 unit Villages of Leiali'i project in 1992 by the Housing Finance Development Corporation (HFDC), State of Hawaii and the 1,700 unit Puukolii Village project in the mid 1990's by AMFAC/JMB. Both projects were approved by the State of Hawaii under the auspices of Act 15, SLH 1988, and situated in the vicinity of the planned Lahaina Bypass Highway, a State project which has also been delayed.

The 1,120 acre Villages of Leiali'i situated near the Lahaina Civic Center was intended to provide a mix of single family, multi family, and elderly housing, including fee simple and rental units; an 18-hole golf course; two elementary school sites; neighborhood business commercial uses, church, child care, recreational/park uses, and other public uses. Not more than forty (40) percent of units would be sold as "market-priced" units and not less than 60 percent of the units would be priced in the "affordable-range" for residents earning less than 140 percent of the County's median income. The HFDC suspended the Villages of Leiali'i project in 1992, due to a lawsuit filed by the Office of Hawaiian Affairs regarding ceded land issues and compensation.

The Puukolii Village project situated at the former Puukolii Village encompassed 299 acres and was to include approximately 1,700 housing units, as well as sites

for neighborhood commercial uses, hospital/emergency medical facilities, child care center, church, elderly housing, elementary school and community park. AMFAC/JMB suspended this project in the mid 1990's due to economic considerations.

Both the Villages of Leiali'i and Puukolii Village project were major components of the housing strategy underlying the West Maui Community Plan. The suspension of these projects has significantly limited housing opportunities in the region.

The proposed project will provide needed housing opportunities for market-priced housing in the West Maui community.

H. ALTERNATIVES

The following alternative actions were considered:

No Action: This alternative would retain the site in its use as a light industrial area. In all likelihood, the landowner would apply for M-1 Light Industrial District zoning consistent with the current West Maui Community Plan. However with the new residential development in the surrounding area, it was determined that continuation of light industrial uses on the subject property was not a desirable long term goal.

Multi-Family Residential Use: The 1983 Lahaina Community Plan designated the subject property for "Multi-Family" residential use. However the 1996 West Maui Community Plan update resulted in a designation change to "Light Industrial" use with a strip along the highway frontage as "Open Space". Consideration was given to requesting a "Multi-Family" designation; however, it was determined that a more intensive residential use would not be in character with single family projects existing and planned nearby.

Single-Family Residential Use: The subject property is zoned R-3 Residential District and nearby properties have been developed or are planned to be developed as single family residential projects. The following alternatives were considered:

1. Single Family Project with *Ohana* Units: The Applicant has found that there is a strong market demand for this product type in West Maui. The *ohana* units also provide needed rental housing opportunities in West Maui. Original plans proposed 23-lots with a main dwelling and an *ohana* dwelling on each lot. The plan has been refined to incorporate 18-lots with a main dwelling and an *ohana* dwelling. The refined plan provides an integrated design for the main and *ohana*

dwelling and enhanced project amenities including neighborhood parks and landscaped buffer along the Honoapiilani Highway frontage.

2. Single Family Project without *Ohana* Units: The project site is less conducive to a higher end project with only a main dwelling on the lot. It is not as prime a location within the Kaanapali Resort as for example, the *mauka* properties above the golf course, that are typically developed with a main dwelling on a lot. Higher site improvement costs due to topographic and grading considerations also render this a less feasible alternative.

The Applicant has concluded that a "Single Family Project with *Ohana* Units" is the best alternative.

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

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. The subject property is located within the Kaanapali Resort, which was the first resort destination area developed on the island of Maui. The Kaanapali Resort is located approximately four (4) miles north of the historic town of Lahaina and is a major employment center in West Maui with six (6) hotels, two (2) shopping centers, various apartment condominium projects, and upscale residential properties.

This area is referred to as South Beach Mauka. It is not part of the Kaanapali 2020 community-based planning project that AMFAC/JMB has been undertaking to plan for lands *mauka* of the area known as North Beach. The project site is within a developing residential area. Nearby residential projects include The Vintage, The Palisades, The Pinnacle and The Summit.

Potential Impacts and Mitigation Measures. The proposed project is located within a developing single family residential area. It is less desirable to maintain the subject property as a dumping site for landscaping and other debris or a light industrial use. A 18-lot single

family residential project is a suitable use of the property and relates to other residential development in the area.

2. Topography and Soils

Existing Conditions. The project site area has an average annual rainfall of 25 inches. Elevations of the site range from about 18 feet to 84 feet above mean sea level. The site generally slopes from northeast to southwest or in a *mauka* to *makai* direction. The steepest areas are at the southerly end of the site with slopes ranging from about 20 to 40 percent. The central portion of the site has moderate slopes ranging from about 9 to 12 percent. The flattest areas are at the northerly end of the site with slopes that range from 4 to 8 percent.

According to the Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, April 1972, prepared by the United States Department of Agriculture, the following soil series underlie the subject property (See: Figure No. 6, "Soils Map"):

- Wahikuli silty clay, 3 to 7 percent slopes (WbB). This soil is located on smooth, low uplands. In a representative profile, the surface layer is dark reddish brown silty clay that has sub angular blocky structure. The sub-stratum is hard basic igneous rock. The soil is mildly alkaline in the surface layer and subsoil. Permeability is moderate. Runoff is slow, and the erosion hazard is slight. This soil is used for sugar cane and home sites.
- Wahikuli stony silty clay, 7 to 15 percent slopes (WcC). This soil is similar to the Wahikuli silty clay, 3 to 7 percent slopes, except that there enough stones on the surface to hinder cultivation. Runoff is slow to medium, and the erosion hazard is slight to moderate. This soil is used for sugar cane and home sites.
- Ewa silty clay loam, 0 to 3 percent slopes (EaA). This soil developed in alluvium derived from basic igneous rock. On this soil, runoff is very slow, and the erosion hazard is no more than slight. This soil is used for sugar cane and home sites.

According to a 1992 reevaluation by the United States Geological Service, the seismic hazard for Maui County is classified as Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.



The topography of the project site has undergone extensive disturbances over the years. It has been reported that the parcel was bulldozed during the original construction of the golf course.

Potential Impacts and Mitigation Measures. According to the Preliminary Grading and Drainage Plan (See: Appendix G), there will be substantial grading work and retaining walls to create building pads for the proposed residences. Approximate earthwork volumes include 20,700 cubic yards of cut and 19,200 cubic yards of fill.

An Environmental Site Assessment: Phase 1 Investigation was conducted on project site to determine if the site may be contaminated with hazardous or toxic substances or wastes resulting from current or past site activities, unauthorized dumping or disposal, or migration of contaminants from adjacent or nearby properties (See: Appendix F). The objective was to identify “recognized environmental conditions” on a property that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products. These release conditions apply to structures on the property as well as the soil, groundwater, or surface water of the property. The American Society of Testing and Materials (ASTM) Standard 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process was used to “. . . define good commercial and customary practices for conducting an environmental site assessment of a parcel of commercial real estate.” The Environmental Site Assessment: Phase 1 Investigation has revealed no evidence of “recognized environmental conditions”, except for the following:

- The subject site is not on a Federal, State or County database listing. The listed nearby sites were reviewed for environmental concerns relative to the subject site. It is unlikely that these sites have had a significant environmental impact on the subject property, nor is there any expected impact there from.
- There is no evidence of any historic misuse or significant spills of hazardous or regulated substances on the subject property. Previous sugar cane cultivation on the site and surrounding area and the existing plant nursery involve the use of pesticides and fertilizers.
- Limited containers of unidentified petroleum-based substances were identified during the site reconnaissance. These containers were byproducts of the sign painting operation that has since been ceased on the subject property. The management procedure will include disposal of these containers or drums in accordance with County regulations.
- Other mitigation measures are prescribed for surface water and area aquifer protection; solid waste management and surface fill



material; and management of building materials (e.g. possible lead paint; PCBs, asbestos).

The topographic conditions and soil analysis and Environmental Site Assessment: Phase 1 Investigation does not preclude construction of the proposed residential project on the subject site.

3. Flood and Tsunami Zone

Existing Conditions. The subject property is within Zone C, an area of minimal flood hazard potential. (Panel Number 150003 0153C, Flood Insurance Rate Map, Federal Emergency Management Agency) (See: Figure No. 5, "Flood Insurance Rate Map").

Potential Impacts and Mitigation Measures. The project's final grading and erosion control plan to be approved at the time of building permit review will incorporate specific drainage improvements for the proposed project in compliance with Maui County Code Chapter 20.08, Grading and Drainage. The improvements will need to meet requirements that the project will not have adverse flood hazard impacts on neighboring or downstream properties. (See Section III.3 for discussion on "Drainage")

4. Terrestrial Biota (Flora and Fauna)

Existing Conditions. The property is vegetated land consisting of lantana (*lantana camara*), panini (*Opuntia ficus-indica*), castor bean (*Ricinus communis*), kiawe (*Prosopis pallida*), banyon (*Ficus benghalensis*), and other common grasses and shrubbery. There is no evidence of species of vegetation associated with wetland areas or species of rare, threatened or endangered variety. Avifauna is species common to West Maui including mynah, several species of dove, cardinal, house finch and house sparrow. Mammals common to the area include cats, dogs, rodents and mongoose.

Potential Impacts and Mitigation Measures. The proposed project will not impact any known major wildlife habitat, wetland, nor any known rare, threatened or endangered flora and fauna.

5. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power generating facilities). The



impact of land development activities on air quality in the proposed development's locale differs by project phase (site preparation, construction and occupancy) and project type.

The air quality in Lahaina-Kaanapali is relatively good. Non-point source emissions (automobile) are not significant to generate a high concentration of pollutants. The relatively good air quality can also be attributed to the region's exposure to wind, which quickly disperses concentration of emissions. The Lahaina-Kaanapali area is currently in attainment of all criteria pollutants established by the Clean Air Act, as well as the State of Hawaii Air Quality Standards.

The County's Sewage Pump Station no. 2 is located near the southwestern boundary of the project site. On occasion, odors can be detected on the project site emanating from this facility.

Potential Impacts and Mitigation Measures. Air quality impacts attributed to the proposed project could include dust generated by construction-related activities. Site work, such as grubbing, grading and building construction, could generate airborne particulate. Adequate dust control measures that comply with the provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust, will be implemented during all phases of construction. Mitigation measures will include but not be limited to:

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

In addition, non-potable or reclaimed/recycled water will be used for dust control purposes during the construction phase to extent allowable by State DOH regulations.

On 7/29/03 and 8/11/03, the Applicant's civil engineer met with staff of the Wastewater Reclamation Division, DPWEM, to discuss possible causes of the odor problem (See: Appendix L). This problem is intermittent and apparently occurs when the sewage flow reaches a certain level. This pump station was to have been replaced by a new pump station at the State's Villages of Lei ali'i project. However, this improvement was

not done due to the suspension of the State's Lei ali'i project. The Applicant intends to work with the DPWEM staff to solve or minimize this intermittent odor problem. Mitigation measures may include improvements to the pump station or odor abatement from the use of chemical additives. The possible problem will be disclosed to potential buyers.

6. Noise Characteristics

Existing Conditions. The level of ambient noise is an important indicator of environmental quality. In an urban environment, noise is due primarily to vehicular traffic, air traffic, heavy machinery, and heating, ventilation and air conditioning equipment. Persistent high noise levels may impact health conditions and an area's aesthetic appeal. Noise levels in the vicinity of the project area are generally moderate with the source attributable to traffic on Honoapiilani Highway.

Potential Impacts and Mitigation Measures. In the short-term, the proposed project could generate some adverse impacts during construction. Noise from heavy construction equipment, such as material-carrying trucks and trailers, would be the dominant source of noise during the construction phase.

To minimize construction-related impacts on nearby residences, the developer will limit construction to normal daylight hours and adhere to the Department of Health's Administrative Rules, Chapter 11-46, Community Noise Control. The developer will also work with immediate neighbors to implement other measures to minimize construction-related impacts.

7. Archaeological/Historical Resources

Existing Conditions. Scientific Consultant Services, Inc. conducted and prepared an Archaeological Inventory Survey of the subject property, in consultation with staff of the State Historic Preservation Division, Department of Land and Natural Resources (See: Appendix I). Systematic pedestrian survey revealed the absence of archaeological sites on the surface of the parcel. Three (3) mechanically excavated trenches revealed the absence of subterranean deposits in the tested portions of the parcel. The lack of subsurface cultural deposits is attributed to the extensive disturbances the parcel has undergone during development of the nearby Kaanapali South Golf Course and associated utilities and infrastructure. The natural topography has been almost completely altered and fill soils have been re-deposited over the parcel. Previous



archaeological and historical research suggests traditional agriculture on the lands surrounding Lahaina was supplanted by commercial sugar cane and pineapple cultivation in the mid 1800s. In the late 1950s, the original topography and landscape of the Kaanapali coastal area was dramatically changed by development of the resort.

Potential Impacts and Mitigation Measures. Based on the testing results that revealed stratigraphy consisting of fill in all three (3) trenches, there is no significance assessment. However in the event that articulated or disarticulated human remains are discovered during construction, the consulting archaeologist recommends that all work should be immediately suspended in the area, and the State Historic Preservation Division and Maui Burial Council should be immediately notified. Based on the findings and negative test results, no further archaeological work is recommended.

8. Cultural Resources

Existing Conditions. Scientific Consulting Services, Inc. conducted and prepared a Cultural Impact Assessment for the subject property (See: Appendix J). Recent archaeological studies on the property revealed that sugar cane was previously cultivated on the site and that more recently the property was used as a homeless camp and an unofficial dump site. SCS consulted with community members and groups, including the Office of Hawaiian Affairs, Maui/Lanai Islands Burial Council, and the Central Maui Hawaiian Civic Club concerning any traditional activities that may have been associated with the subject parcel. None were identified.

Potential Impacts and Mitigation Measures. Based on community response, archival research, and the results of previous archaeological investigations within the project area, the Cultural Consultant has concluded that pursuant to Act 50, SLH 2000, the exercise of native Hawaiian rights related to gathering, access, or other customary activities will not be affected and that there will be no adverse effect upon any ethnic practices or beliefs due to construction on the project site.

9. Visual Resources

Existing Conditions. The project site is located on the *mauka* side of Honoapiilani Highway. Numerous scenic resources have been identified in the West Maui area, which are identified and discussed in the Maui Coastal Scenic Resources Study, August 1990. The resource/inventory map in this report does not identify a significant mountain view in the vicinity of the subject site along Honoapiilani Highway.



Potential Impacts and Mitigation Measures. Because the southern portion of the project site is lower in elevation and more visible from Honoapiilani Highway, future structures on house lots in this area will be visible from Honoapiilani Highway. The project will maintain a landscape planting buffer along the highway frontage as a visual amenity and screening. The Applicant intends to maintain the existing oleander hedge and supplement this planting buffer with additional tree plantings that will soften the visual mass of the future dwellings. The southern end of the site is at a lower elevation and very visible from Honoapiilani Highway. This area will be visually enhanced with the inclusion of a 0.55 acre neighborhood park greenspace. (See: Figure 8 Conceptual Landscape Plan- Plot Plan-Scheme # 2)

Also, the Draft EA analyzes the visual impact of the proposed project from the Vintage single family residential project, which is located considerably *mauka* of the project site and buffered by golf course fairways. As noted in Figures 10.1 to 10.7, the finished floor elevations of existing dwellings at the Vintage project are substantially higher than the estimated height of the roof ridges for the proposed project. As such, the proposed project will not substantially impact *makai* view planes of the Vintage project.

10. Hydrogeology

Existing Conditions: The Water Resource Management Department of Hawaii has designated the groundwater management area as the Honokowai Aquifer System within the Lahaina Aquifer Sector. The aquifer type is unconfined, basal aquifer within horizontally extensive areas. The estimated depth to the basal groundwater is estimated to range from 14 feet to 95 feet below the ground surface. The groundwater flow is expected to follow the general slope of the underlying volcanic flows and be in a westerly direction. The subject site is located approximately 2,000 feet seaward of the Underground Injection Control (UIC) line. The UIC line is the designated boundary that divides protected inland areas situated over drinking water sources from seaward areas located over non-potable water sources.

Potential Impacts and Mitigation Measures. Specific mitigation measures will be specified in subsequent plans for a County Grading Permit and a National Pollution Discharge Elimination System (NPDES) General Permit from the Department of Health, State of Hawaii.



B. SOCIO-ECONOMIC ENVIRONMENT

Existing Conditions. In the decade from 1990 to 2000, the resident population in the Lahaina region grew from 14,574 to 17,967, representing a 23.3% increase. This region was the fastest growing area on Maui. Based on the 2000 U.S. Census, the population of the West Maui area was as follows: Kaanapali CDP (1,375 residents); Kapalua CDP (467 residents); Lahaina CDP (9,118 residents) and Napili-Honokowai CDP (6,788 residents). In 2000, the West Maui region maintained about 9,632 visitor accommodation units.

In 2002, the County of Maui updated its 20-year population forecasts. Baseline population projections for the West Maui region are as follows: 21,663 residents (2010) and 25,431 residents (2020). (Maui County Community Plan Update Program: Socio-Economic Forecast, Phase I Report, June 14, 2002 prepared for the Maui County Planning Department by SMS)

Potential Impacts and Mitigation Measures. On a short-term basis, the proposed project will support construction and related employment. Secondary impacts related to population increase will be minimal given the scale of the project. The proposed project will also offer needed housing opportunities for the West Maui community.

C. PUBLIC SERVICES

Existing Conditions. Public services in Lahaina-Kaanapali area include police and fire protection, parks maintenance, solid waste collection services, wastewater treatment facilities, and two (2) elementary schools an intermediate school, and a high school.

Potential Impacts and Mitigation Measures. The proposed project is of a limited scale and is not expected to adversely impact public services in the West Maui area.

D. INFRASTRUCTURE

1. Water

Existing Conditions. The Hawaii Water Service Company, a private water utility, provides water service for the area. The water system in the area consists of a 1.0 million gallon reservoir and various distribution lines.

Potential Impacts and Mitigation Measures. As noted in the Preliminary Engineering Report (See: Appendix G), available data indicates that the

existing water system can handle the domestic and fire protection demands of this project. The project's anticipated average daily water demand is 27,000 gallons per day, based on 1,500 gallons per day for each lot multiplied by 18 lots. For single family residential zoning, the required fire flow, duration, and fire hydrant spacing are 1,000 gallons per minute, 2 hours, and 350 feet, respectively. Preliminary data also indicates that the existing sources can deliver the anticipated demand of this project.

Currently, reclaimed/recycled water is used for golf course irrigation at the Kaanapali Resort. Regulations of the State Department of Health (DOH) prohibit the use of reclaimed water for irrigation within 4 feet of residential dwellings. It is proposed that a dual water line be installed for the irrigation of the common landscaped areas and that reclaimed water be used to extent allowable by the State DOH regulations. In addition, non-potable or reclaimed/recycled water will be used for dust control purposes during the construction phase to extent allowable by State DOH regulations.

Water system improvements for the proposed project will include 8-inch water lines, fire hydrants, and service laterals.

2. Wastewater System

Existing Conditions. The County of Maui provides a wastewater collection system for the area. The collection system carries wastewater from the Lahaina Wastewater Reclamation Facility for treatment and disposal. The wastewater collection system includes gravity sewers, force mains, and pump stations along Honoapiilani Highway.

As previously noted, a County sewage pump station is situated near the southwestern boundary of the project site. On occasion, odors can be detected on the project site emanating from this facility.

Potential Impacts and Mitigation Measures. As noted in the Preliminary Engineering Report (See: Appendix G), available data indicates that the existing collection system and treatment facility can handle the wastewater flows from the proposed project. For a 18-lot subdivision, the project's anticipated average wastewater flow is 9,540 gallons per day. This total is based on 350 gallons per day for each main house and 180 gallons per day for each *ohana* or accessory dwelling. During the 1980's, AMFAC, the owner of the subject parcel, funded an expansion of the Lahaina Wastewater Reclamation Facility and received an allocation of wastewater capacity for its Kaanapali properties. This property falls under AMFAC's allocation of wastewater capacity.



Wastewater improvements for this project include installing onsite gravity sewers and rerouting an existing sewer force main. The existing force main transports wastewater from the Kaanapali Resort through the subdivision site and discharges it into a gravity sewer line that flows to the Lahaina Wastewater Pump Station No. 2 on the southern border of the project site. Improvements will consist of 8-inch sewer mains, 6-inch sewer laterals, and manholes. These lines will connect to the existing gravity sewer line at the pump station. In accordance with County Wastewater Reclamation Division standards, service laterals and advance risers will be installed for all lots, and manholes will be constructed at connections to existing sewer main lines.

Also, the Applicant is working with staff of the Wastewater Reclamation Division, DPWEM, to rectify the intermittent odors from the nearby sewage pump. The Applicant will disclose the odor problem to potential buyers.

3. Drainage

Existing Conditions. An existing concrete drainage channel runs through the site. The channel begins at the northwesterly corner of the site, runs along the westerly side of the site along the highway for about 800 feet, changes direction and cuts through the lower one-third of the site, and curves towards the southeasterly corner of the site. According to the Preliminary Engineering Report, the carrying capacity of this segment of the drainage channel is about 61 cubic feet per second. From this point, the channel continues along the perimeter of the adjoining maintenance yard and enters into an underground drainage system. The underground drainage system consists of two 72-inch diameter drain pipes that run under the adjoining golf course parcel. The drain pipes continue under Halelo Street and connect to another concrete drainage channel on the south side of the street. This concrete drainage channel turns toward the south, runs along the perimeter of the golf course along the highway, and ends at Hahaione Stream.

There are existing drainage improvements within Honoapiilani Highway, including concrete and grassed swales along the shoulders of the highway and culverts under the highway.

Potential Impacts and Mitigation Measures. According to the Preliminary Engineering Report (See: Appendix G), proposed drainage improvements will include swales, inlets, catch basins, manholes, and drain pipes. The proposed improvements will consist of two separate parts that correspond to the separate points of discharge. Part 1 discharges

runoff into the existing concrete drainage channel. Part 2 discharges runoff into the existing highway drainage system.

Part 1. The existing railroad tracks along the cane haul road form the upper limits of the Part 1 drainage area. From this upper limit, runoff flows across the golf course fairway and towards the proposed lots. To prevent the runoff from entering the lots, a grassed swale will be constructed within the golf course along the project's easterly property boundary. Inlets within the swale will collect runoff and direct it to the roadway drainage system.

The roadway drainage system will consist of catch basins, manholes, and a main drain pipe along the entire length of the roadway that replaces the function of the existing concrete drainage channel. This main drain pipe will connect to the existing drainage channel at the southeasterly corner of the site. The computed 50-year design flow is about 32 cfs. The existing channel with a capacity of about 61 cfs can adequately carry the design flow.

Part 2. The *makai* edge of the subdivision roadway and the line between proposed Lot 17 and Lot 18 form the upper limits of the Part 2 drainage area. Under existing conditions, runoff flows into the highway and enters a 24-inch culvert. The 24-inch culvert would carry the runoff under the highway and into the golf clubhouse and golf driving range area. This runoff is eventually discharged into the water hazard within the golf course. However, instead of allowing the runoff to flow directly into the highway, it will be contained onsite and the outflow into the highway will be controlled.

Special onsite provisions for handling Part 2 runoff include a drainage basin consisting of a large diameter perforated pipe, a flow control manhole, and an outlet structure. These special provisions will keep the post development flow rates and volumes at pre development levels.

The County drainage standards require the use of a 50-year, 1-hour rainfall for computing volumes and rates of flow. However, there are more stringent guidelines contained in the West Maui Watershed Owner's Manual prepared by the West Maui Watershed Management Advisory Committee. Because this project is in West Maui, the more stringent guidelines will be used.

The design criteria for Part 2 drainage improvements include: (1) Maintaining pre-development runoff volumes for a 2-year, 24 hour storm; and (2) Maintaining pre-development peak flow rates for a 50-year, 24-hour storm.



Drainage design will be based on the Soil Conservation Service (SCS) method described in *Urban Hydrology for Small Watersheds, Technical Release 55*. The SCS, a branch of the U.S. Department of Agriculture, is now known as the Natural Resources Conservation Service (NRCS). This method is commonly referred to as TR-55 and incorporates procedures for computing storm runoff volumes, peak rates of discharge, hydrographs, and storage volumes.

Drainage improvements that involve transmission of storm water flows will conform to the "Rules for the Design of Storm Drainage Facilities in the County of Maui." The rules apply to the sizing and spacing of inlets and manholes and sizing of drain lines, channels and culverts. Based on these rules, the drainage system will be designed to handle a storm with a recurrence interval of 50 years, since the drainage area is less than 100 acres.

The hydrologic design data in the Preliminary Engineering Report indicates that the proposed drainage system can collect and discharge runoff into an adequate drainage way and maintain peak discharge rates and volumes at pre-development levels. Final drainage improvements will comply with MCC Chapter 20.08, Grading, and County drainage regulations and will be submitted to the Department of Public Works and Environmental Management (DPWEM) as part of the grading and building permit applications. Accordingly, there will be no adverse effects on the adjacent or downstream properties from the proposed project.

4. Roadways

Existing Conditions. A private cane haul road provides access to the project site from Kualapa Loop. This right-of-way also contains a section of track for the Kaanapali Railroad. Kualapa Loop is a two-lane, two-way roadway that bridges over Honoapiilani Highway and connects to Kekaa Drive at an unsignalized "T" intersection. At the present, Kualapa Loop terminates *mauka* of its intersection with the entrance to The Vintage development. In the future, Kualapa Loop will be extended *mauka* and then southward towards the project site.

The following are existing levels of service for intersections and movements:

- Kualapa Loop at Kekaa Drive: LOS "A" during AM and PM Peak Hour for eastbound left and thru movement; LOS "A" during AM Peak Hour for southbound left and right movement; and LOS "B" during the PM Peak Hour for southbound left and right movement.
- Kualapa Loop at Royal Kaanapali: LOS "A" during AM and PM Peak Hour for the southbound left and thru movement; and LOS



“A” during the AM and PM Peak Hour for westbound left and right movement.

Potential Impacts and Mitigation Measures. The project’s Traffic Impact Assessment Report (TIAR) (See: Appendix H) evaluated two alternate driveway locations for the project site. Alternate A is along the east side of Kualapa Loop adjacent to the railroad crossing. Alternate B is a new driveway along the south side to the entrance road to the Palisades residential subdivision.

Subsequent to the completion of the TIAR, it was determined that Alternate B would be the project access.

The TIAR evaluated traffic impacts at the following intersections:

- (1) Kualapa Loop at Kekaa Drive;
- (2) Kualapa Loop at Kaanapali Royal;
- (3) Kualapa Loop at Alternate A Project Driveway;
- (4) Kualapa Loop at The Vintage entrance;
- (5) The Vintage entrance at The Palisades entrance; and
- (6) Alternate B Project Driveway at The Palisades entrance.

The TIAR analyzed cumulative traffic conditions based on 1.6 percent growth rate to 2020 in the *Maui Long Range Transportation Plan* and an estimate of traffic from other proposed projects in the vicinity. It was assumed that existing traffic along Kekaa Drive would increase by 1.6 percent from 2002 to 2010 and that traffic from an additional 282 single family homes would be added to the traffic volume along Kualapa Loop.

Also, the TIAR calculated Project Trip Generation based on 26 lots and one main dwelling and one accessory dwelling per lot.

According to the TIAR, the proposed project will generate 7 inbound and 24 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 26 inbound and 15 outbound trips. The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound and outbound) during the site’s peak hour. Based on this criterion, a traffic impact analysis is not warranted.

The TIAR also concludes that the level-of-service analysis for all projected traffic movements will be LOS “B” or better. (See Tables A-1, A-2, B-1 and B-2). This analysis indicates that the project will have minimal impacts on traffic operating conditions and vehicle delays.



Alternate A: Table A-1 is an analysis of the changes in traffic volumes at the study intersections. Shown are the 2010 peak hour projections without and with the project, the peak hourly changes, and the percent change related to the peak hourly volume without the project. The volumes shown are the total volumes of traffic approaching the intersection.

Table A-1 Analysis of Changes in Peak Hourly Traffic Projections—Alternate A

(1) Volumes shown are the total approach volume during the respective peak hour.	AM Peak Hourly Volume (1)				PM Peak Hour			
	Without Project	With Project	Change	Percent Change	Without Project	With Project	Change	Percent Change
Kualapa Loop at Kekaa Drive	388	418	30	7.7%	424	463	39	9.2%
Kualapa Loop at Royal Kaanapali	216	247	31	14.4%	209	250	41	19.6%
Kualapa Loop at Project Entrance for Alternate A	146	177	31	21.2%	144	185	41	28.5%
Kualapa Loop at The Vintage Entrance	146	146	0	0.0%	144	144	0	0.0%
The Vintage Entrance at The Palisades Entrance	85	85	0	0.0%	77	77	0	0.0%
The Palisades Entrance at Project Entrance for Alternate B	37	37	0	0.0%	40	40	0	0.0%

There is no established criteria for significance based on the change in peak hour traffic at a signalized intersection. However, it is generally accepted that if the change is 5% or greater, some mitigation will be required unless the final Level-of-Service (LOS) is high (LOS A or B).

Alternate A: Table A-2 show the results of the LOS analysis for Alternate A. Shown in the table are average vehicle delays and the LOS. The LOS analysis concludes that all traffic movements will operate at LOS B or better. This indicates that the project has minimal impacts on traffic operating conditions and vehicle delays.

Table A-2 Level-of-Service Analysis for 2010 Peak Hour Conditions—Alternate A

(1) Average vehicle delay in seconds per vehicle.	AM Peak Hour		PM Peak Hour	
	Delay (1)	LOS	Delay (1)	LOS
Kualapa Loop at Kekaa Drive				
East bound Left & Thru	7.5	A	7.7	A
Southbound Left & Thru	10.9	B	13.8	B
Kualapa Loop at Kaanapali Royal Drive				
Southbound Left & Thru	7.5	A	7.5	A
Westbound Left & Right	10.3	B	10.2	B
Kualapa Loop at Project Entrance for Alternate A				
Southbound Left & Thru	7.4	A	7.5	A
Westbound Left & Right	9.5	A	9.5	A
Kualapa Loop at The Vintage				
Southbound Left & Thru	7.4	A	7.4	A
Westbound Left & Right	9.3	A	9.3	A
The Vintage Entrance at the Palisades Entrance				
Westbound Left & Thru	7.3	A	7.3	A
Northbound Left & Right	9.0	A	8.9	A
The Palisades Entrance at Project Entrance for Alt. B				
Westbound Left & Thru	NA	NA	NA	NA
Northbound Left & Right	NA	NA	NA	NA

Source: *Traffic Impact Assessment Report for Kaanapali Parcel 10-H in Kaanapali, Maui, Hawaii* prepared by Phillip Rowell and Associates, August 11, 2003.

Alternate B: Table B-1 is an analysis of the changes in traffic volumes at the study intersections. Shown are the 2010 peak hour projections without and with the project, the peak hourly changes, and the percent change related to the peak hourly volume without the project. The volumes shown are the total volumes of traffic approaching the intersection.

Table B-1 Analysis of Changes in Peak Hourly Traffic Projections—Alternate B

(1) Volumes shown are the total approach volume during the respective peak hour.	AM Peak Hourly Volume (1)				PM Peak Hour			
	Without Project	With Project	Change	Percent Change	Without Project	With Project	Change	Percent Change
Kualapa Loop at Kekaa Drive	388	418	30	7.7%	424	463	39	9.2%
Kualapa Loop at Royal Kaanapali	216	247	31	14.4%	209	250	41	19.6%
Kualapa Loop at Project Entrance for Alternate A	146	177	31	21.2%	144	185	41	28.5%
Kualapa Loop at The Vintage Entrance	146	177	31	21.2%	144	185	41	28.5%
The Vintage Entrance at The Palisades Entrance	85	116	31	36.5%	77	118	41	53.2%
The Palisades Entrance at Project Entrance for Alternate B	37	68	31	83.8%	40	81	41	102.5%

There is no established criteria for significance based on the change in peak hour traffic at a signalized intersection. However, it is generally accepted that if the change is 5% or greater, some mitigation will be required unless the final Level-of-Service (LOS) is high (LOS A or B).

Alternate B: Table B-2 show the results of the LOS analysis for Alternate B. Shown in the table are average vehicle delays and the LOS. The LOS analysis concludes that all traffic movements will operate at LOS B or better. This indicates that the project has minimal impacts on traffic operating conditions and vehicle delays.

Table B-2 Level-of-Service Analysis for 2010 Peak Hour Conditions—Alternate B

(1) Average vehicle delay in seconds per vehicle.	AM Peak Hour		PM Peak Hour	
	Delay (1)	LOS	Delay (1)	LOS
Kualapa Loop at Kekaa Drive				
East bound Left & Thru	7.5	A	7.7	A
Southbound Left & Thru	10.9	B	13.8	B
Kualapa Loop at Kaanapali Royal Drive				
Southbound Left & Thru	7.5	A	7.5	A
Westbound Left & Right	10.3	B	10.2	B
Kualapa Loop at Project Entrance for Alternate A				
Southbound Left & Thru	NA	NA	NA	NA
Westbound Left & Right	NA	NA	NA	NA
Kualapa Loop at The Vintage				
Southbound Left & Thru	7.4	A	7.5	A
Westbound Left & Right	9.5	A	9.5	A
The Vintage Entrance at the Palisades Entrance				
Westbound Left & Thru	7.4	A	7.4	A
Northbound Left & Right	9.1	A	9.1	A
The Palisades Entrance at Project Entrance for Alt. B				
Westbound Left & Thru	7.3	A	7.3	A
Northbound Left & Right	8.9	A	8.9	A

Source: *Traffic Impact Assessment Report for Kaanapali Parcel 10-H in Kaanapali, Maui, Hawaii* prepared by Phillip Rowell and Associates, August 11, 2003.



Based on the traffic impact assessment, area roadways will not be adversely impacted by the use of either access Alternate A or Alternate B. It has been determined that the Alternate B scheme will be the access for the project.

5. Solid Waste

Existing Conditions. Private disposal companies are typically retained by businesses for solid waste disposal both during and after construction. Trash materials are disposed of at the County's Central Maui Landfill.

Potential Impacts and Mitigation Measures. A private waste contractor will be contracted to pick-up and dispose of construction debris. Also, future residents will need to contract with a private disposal company to collect and dispose of household generated trash.

6. Electrical, Telephone, and Cable Television Systems

Existing Conditions. Maui Electric Company, Verizon Hawaii, and Oceanic Time Warner Cable provide electrical, telephone, and cable television service for the area. Major existing overhead lines run with the project site along the Honoapiilani Highway right-of-way. In addition, an overhead line branches off from the main system along the highway and runs in the *mauka* direction across the southern end of the site.

Potential Impacts and Mitigation Measures. The project will be served by new underground lines that connect to the existing facilities.

Along the highway frontage, there are existing power lines mounted on large steel poles. MECO has confirmed that these lines are distribution lines (12.47 kV) and not the higher voltage transmission lines (69 kV). To examine the issue of electric and magnetic fields (EMF), Vuich Environmental Consulting (VEC) requested that MECO conduct an EMF survey on the subject site along the length of the power lines. The electromagnetic field line readings of the survey ranged from 0.04 mG to 0.24mG (milligauss units). These measurements were mainly collected from directly under the power lines. According to MECO and EPA data reviewed by VEC, these readings are relatively low compared with readings taken at power lines with higher currents or from measurements taken in close proximity to household electrical appliances (electric can openers, blenders, toasters, etc.). According to the EPA, "a typical American home has a background magnetic field level (away from appliances) ranging from 0.5mG to 4.0 mG."

VEC also notes that according to the project site plan, it appears that the power lines are located at a distance even further from the proposed residential sites than where the testing was conducted. Although it cannot be concluded that the existing power distribution lines will not have any increased health risks to future occupants of the proposed project, the EMF readings taken were relatively low. It should be noted that there are no specific EMF standards for electrical distribution lines by the Federal Environmental Protection Agency or the State Department of Health.

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE LAW

Hawaii Revised Statutes Chapter 205 relating to the Land Use Commission establishes the designation of all lands within the State of Hawaii into one (1) of four (4) districts, namely Urban, Agricultural, Rural and Conservation. Within the Urban District, the County has full authority to zone lands as it determines to be appropriate.

The project site is within the State Urban District.

Conclusion. The subject site is within a State Land Use district that authorizes the County to establish zoning classifications that it deems to be appropriate. Also, the subject site is part of a larger contiguous Urban District commonly referred to as the Kaanapali Resort area.

B. GENERAL PLAN OF THE COUNTY

The General Plan of the County of Maui (1990 Update) provides long-term goals, objectives, and policies directed toward improving living conditions in the County. As stated in the Maui County Charter:

“The purpose of the General Plan is to recognize and state major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development.”

The General Plan identifies five major themes as follows:

1. Protect Maui County's agricultural land and rural identity.
2. Prepare a directed and managed growth plan.



3. Protect Maui County's shoreline and limit visitor industry growth.
4. Maintain a viable economy that offers diverse employment opportunities for residents.
5. Provide for needed resident housing.

The following General Plan Objectives and Policies are applicable to the proposed project:

- I. B. Land Use
Policy: b. Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental and economic needs of the community.
- III. A. Housing
Objective: To provide a choice of attractive, sanitary and affordable homes for all our residents.
Policy: b. Encourage the construction of housing in a variety of price ranges and geographic locations.

Conclusion. The proposed project is intended to provide a choice of housing for the West Maui community. The option of having an *ohana* or accessory dwelling unit will allow future homeowners to provide for family needs or long-term rental opportunities. As previously noted, there is an acute housing shortage in West Maui, due to high demand and limited availability of developable residential lands.

C. WEST MAUI COMMUNITY PLAN

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

The subject property is located within the West Maui Community Plan region. This Community Plan was amended by Ordinance No. 2476 with an effective date of February 27, 1996.

The following West Maui Community Plan goals, objectives and policies are applicable to the proposed actions:

HOUSING

Goal

A sufficient supply and choice of attractive, sanitary and affordable housing accommodations for a broad cross section of residents.



Objective and Policies

1. Accommodate the 20-year housing needs of the planning region.

URBAN DESIGN

Objectives and Policies for the West Maui Region in General

7. Buffer public and quasi-public facilities and light-heavy industrial/commercial type facilities from adjacent uses with appropriate landscaping.

PLANNING STANDARDS

1. Land Use Standards
 - a. All zoning and land use approvals shall be consistent with the West Maui Community Plan and its land use policies.
 - b. Limit multifamily and single-family residential, business commercial, and industrial uses to areas designated for such purposes on the Community Plan Land Use Map.

PLANNING STANDARDS

4. Landscape Planting Standards
 - a. Buffer public and quasi-public facilities and light-heavy industrial/commercial type facilities from adjacent uses with appropriate landscaping.
 - d. Require all future subdivisions, construction projects and developments to comply the Maui County Planting Plan.

Conclusion. As previously noted, the 1983 Lahaina Community Plan designated the subject property for "Multi-Family" use. The 1996 West Maui Community Plan update re-designated the property to "Light Industrial" use and "Open Space" (a strip along the highway frontage) in recognition of current uses of the property. In the long term, a "Single Family" use would be more compatible with existing and planned developments in the South Beach *Mauka* area than light industrial uses. The proposed project represents an "infill" residential project.

The existing "Open Space" designation along the frontage with Honoapiilani Highway was established as a policy for public, quasi-public, light industrial/commercial type uses. This policy does not apply to "Single Family" or "Multi-Family" uses.

The subject Community Plan Amendment will provide housing opportunities for residents of West Maui. The proposed project is not an "affordable housing" project; however, it is intended to provide for both fee simple and rental housing options for families in a region with an acute housing shortage. As previously noted, the suspension of the Villages of Leiali'i and Puukolii Village projects involving a total of 6,500 housing units has severely limited housing opportunities



for West Maui and has resulted in an acute shortage of housing development in the area due to the limited supply of developable residential lands. These projects were a key part of the housing strategy in the current West Maui Community Plan.

D. MAUI COUNTY ZONING

The project site is currently zoned R-3 Residential District by the County of Maui. The following standards apply to this district, pursuant to Maui County Code Chapter 19.08:

1. Minimum lot size of 10,000 square feet.
2. Height limit of two stories and 30 feet.
3. Front yard setback of 15 feet. Side and rear yard setbacks of 6 feet (one story structure) and 10 feet (two story structure).

According to MCC Chapter 19.35, an attached or detached *ohana* or accessory dwelling is permitted on residential zoned lots with a minimum area of 7,500 square feet. For lots in the 10,000 to 21,779 square foot size range, the maximum gross floor area for an accessory dwelling is 600 square feet.

The proposed project will be developed in accordance with applicable zoning standards.

Conclusion. The proposed action will not increase the residential density currently allowed under the existing zoning for the property and other residential properties in the vicinity of the project site.

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

The proposed project is not located within the Special Management Area (SMA), pursuant to Hawaii Revised Statutes Chapter 205A and Chapter 202, Special Management Area Rules, Maui Planning Commission and therefore will not require a SMA Permit.

Although the project site is not within the SMA, this section addresses the project's relationship to coastal zone management considerations, as set forth in HRS Chapter 205A and the SMA Rules and Regulations of the Maui Planning Commission.

1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.



Policies:

- (A) Improve coordination and funding of coastal recreation planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - (ii) Requiring placement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or require reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
 - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having standards and conservation of natural resources;
 - (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
 - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing;
 - (viii) Encourage reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

Analysis. The project site does not abut the shoreline and is situated over 2,000 feet inland of the shoreline. The proposed project will not adversely impact shoreline recreational opportunities for the community.



2. Historical/Cultural Resources

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

Policies:

- (a) Identify and analyze significant archeological resources;
- (b) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (c) Support state goals for protection, restoration, interpretation, and display of historic structures.

Analysis. As discussed in Section III of this report, based on the previous grading, disturbances and development on the property, there is minimal potential of encountering significant historical or cultural resources. The project area does not appear to be of archeological or cultural significance. As such, the proposed development supports the community's objective of insuring that new development does not disturb historic and prehistoric resources in the coastal zone management area that are deemed to be significant in Hawaiian and American history and culture.

3. Scenic and Open Space Resources

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

Policies:

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

Analysis. As discussed in Section III of this report, numerous scenic resources have been identified in the West Maui area, which are identified and discussed in the Maui Coastal Scenic Resources Study, August 1990. The resource/inventory map in this report does not identify a significant mountain view in the vicinity of the subject site along Honoapiilani Highway.

4. Coastal Ecosystems

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

Policies:

- (a) Improve the technical basis for natural resource management;
- (b) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (c) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (d) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses, which violate state water quality standards.

Analysis. As described in Section III of this report, the proposed project will not have a significant direct impact on the region's coastal ecosystem because of its location, site characteristics and limited scope. With the incorporation of appropriate measures during construction, there should be no significant adverse impacts to near shore waters from point and non-point sources of pollution.

5. Economic Uses

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

Policies:

- (a) Concentrate coastal dependent development in appropriate areas;

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

Analysis. The project site is located within the State Urban District and within close proximity to other residential developments. It is also located within the Kaanapali Resort, a major visitor destination area for the island of Maui.

6. Coastal Hazards

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

Policies:

- (a) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;
- (b) Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and non-point pollution hazards;
- (c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (d) Prevent coastal flooding from inland projects; and
- (e) Develop a coastal point and non-point source pollution control program.

Analysis. As discussed in Section III of this report, the project site is situated within Zone "C", an area of minimal flood hazard potential. (See: Figure No. 5, "Flood Insurance Rate Map").



7. Managing Development

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

Policies:

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

Analysis. The development of the subject property is being conducted in accordance with applicable State and County requirements, including HRS Chapter 343.

8. Public Participation

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

Policies:

- (a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program.
- (b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and
- (c) Organize workshops, policy dialogues, and site-specific medications to respond to coastal issues and conflicts.



Analysis. Public participation will be facilitated as part of the 30-day public review and comment of the Draft Environmental Assessment. In addition, the review of the related Community Plan Amendment application will involve public hearing notification and a public hearing before the Maui Planning Commission. The CPA application will then be forwarded to the Maui County Council for its review. Additional opportunities for public review and participation are afforded at this time, before final action is taken by the Council.

9. Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

- (a) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (b) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
- (c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Analysis. The proposed project is located a considerable distance (over 2,000 feet) inland of the shore. Therefore, the beach is not impacted by the proposed action.

10. Marine Resources

Objective: Implement the State's ocean resources management plan.

Policies:

- (a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;



- (c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (d) Assert and articulate the interest of the state as a partner with federal agencies in the sound management of the ocean resources within the United States exclusive economic zone;
- (e) Promote research, study, and understanding of ocean processes, marine life, and other ocean development activities relate to and impact upon the ocean and coastal resources; and
- (f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Analysis. The proposed project does not involve the direct use or development of marine resources. In addition, with the incorporation of erosion and drainage control measures during construction and after construction as identified in this report, there should not be significant adverse impacts to near shore waters from point and non-point sources of pollution. Therefore, the proposed project will not produce any significant impacts on any coastal or marine resources.

V. HRS CHAPTER 343 SIGNIFICANCE CRITERIA

A finding of no significant impact (FONSI) is anticipated and therefore an environmental impact statement will not be required for the proposed action. This determination has been made in accordance with the following significance criteria specified in Section 11-200-12 of the Department of Health rules relating to Environmental Impact Statements:

- A. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

As documented in this report, the proposed project will not result in the loss or destruction of any natural or cultural resource.

- B. *Curtails the range of beneficial uses of the environment.*

The proposed project will provide for needed housing opportunities in the West Maui area and is compatible with the scale of residential development existing and planned in the surrounding area of South Beach *Mauka*. The project will not curtail the range of beneficial uses of the environment in the project vicinity.



- C. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The project is being developed in compliance with the state's long term environmental goals. As documented in this report, adequate mitigation measures will be implemented to minimize the potential for negative impacts to the environment.

- D. *Substantially affects the economic or social welfare of the community or state.*

The proposed project will result in positive social benefits for prospective homeowners in West Maui. Short term benefits will result from the increase in activity associated with the construction of the subdivision improvements and future homes. As documented in this report, there will be no significant long term impacts to the socio-economic environment.

- E. *Substantially affects public health.*

There are no special or unique aspects of the project which will have an impact on public health.

- F. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

There might a slight effect on local population levels upon the build out of the project with the addition of 26 to 52 families. However, it is anticipated that most of these families currently reside or work in the West Maui area. As documented in this report, the project will not result in a significant impact on public facilities.

- G. *Involves a substantial degradation of environmental quality.*

Mitigation measures will be implemented during construction to minimize negative short term impacts such as soil erosion and sedimentation. The project design will incorporate a drainage system that will minimize degradation of the environmental quality.

- H. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The project does not involve a commitment for larger actions on behalf of the applicant or any public agency. In terms of cumulative impacts, the project site is situated within the State Urban District and in proximity to a developing residential area. Infrastructure and utilities are adequate to service the proposed project. The Traffic Impact Assessment Report concludes that the project will not

result in significant negative impacts to the roadways in the area. Therefore, the project will not result in cumulative negative impacts on the environment.

- I. *Substantially affects a rare, threatened, or endangered species, or its habitat.*

There are no rare, threatened, or endangered species or habitat at the project site.

- J. *Detrimentially affects air or water quality or ambient noise levels.*

As documented, there will be short term impacts on air and water quality and ambient noise levels during construction; however, mitigation measures will be employed to minimize these impacts. Adverse long-term impacts are not anticipated.

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

The project site is not an environmentally sensitive area. Compliance with County grading requirements will be met.

- L. *Substantially affects scenic vistas and view planes identified in county or state plans or studies.*

The proposed project will not affect ocean views along Honoapiilani Highway nor obstruct major view corridors.

- M. *Requires substantial energy consumption.*

Upon complete build out of all the lots, energy consumption will be increased; however given existing levels of usage in the area, the increase is considered insignificant.

VI. CONCLUSIONS

This Final Environmental Assessment examines the environmental and socio-economic impacts associated with the construction of a 18-lot single family subdivision to include a main dwelling and an *ohana* dwelling on each lot. The proposed project is located within a developing single family residential area.

The proposed development is not anticipated to result in significant environmental impacts to surrounding properties, near shore waters, natural resources, and archaeological, historic, and cultural resources on the site or in the immediate area. Public infrastructure and services including roadways, sewer and water systems, medical



facilities, police and fire protection, parks, and schools are or will be adequate to serve the project and are not expected to be significantly burdened by the project. The proposed project is not anticipated to impact public view corridors and is not anticipated to produce significant adverse impacts on the visual character of the surrounding environs.

The subject property is situated within the State Urban District and is zoned R-3 Residential District. Over the years, the subject site has been used a dumping site for landscaping and household debris. A single family residential use and not a light industrial use would enhance the use of the property in a manner suitable with a developing residential area. The proposed project would also provide for needed housing opportunities in the West Maui area.

This assessment has been done in accordance with the criteria outlined in section §11-200-12 of the Department of Health's rules and regulations relating to environmental impact statements. The authority has considered all agency and public comments on the Draft Environmental Assessment.

In conclusion, the proposed project will not result in significant impacts to the environment, and is consistent with the requirements of HRS Chapter 343. A Finding of No Significant Impact (FONSI) is warranted.



VII. REFERENCES

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- U.S. Bureau of the Census. March 20, 1997. *Estimate of the Population of Counties and Demographic Components of Population Change: Annual Time Series, July 1, 1990 to July 1, 1996*. Bulletin CO-96-8. Washington, D.C.
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FIGURES

PROJECT
LOCATION

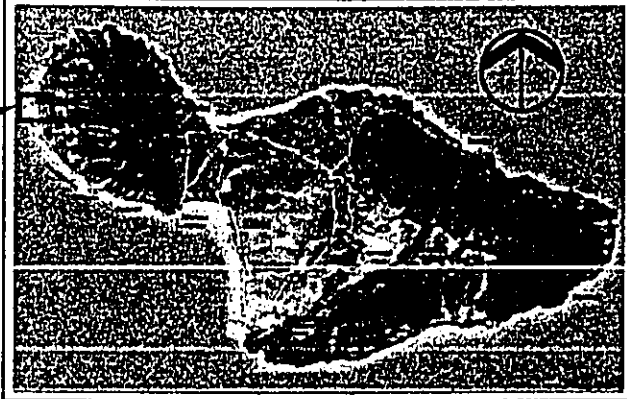


FIGURE 1

Not to Scale

SEPTEMBER
2003

REGIONAL LOCATION
Kaanapali Parcel 10-H Residences



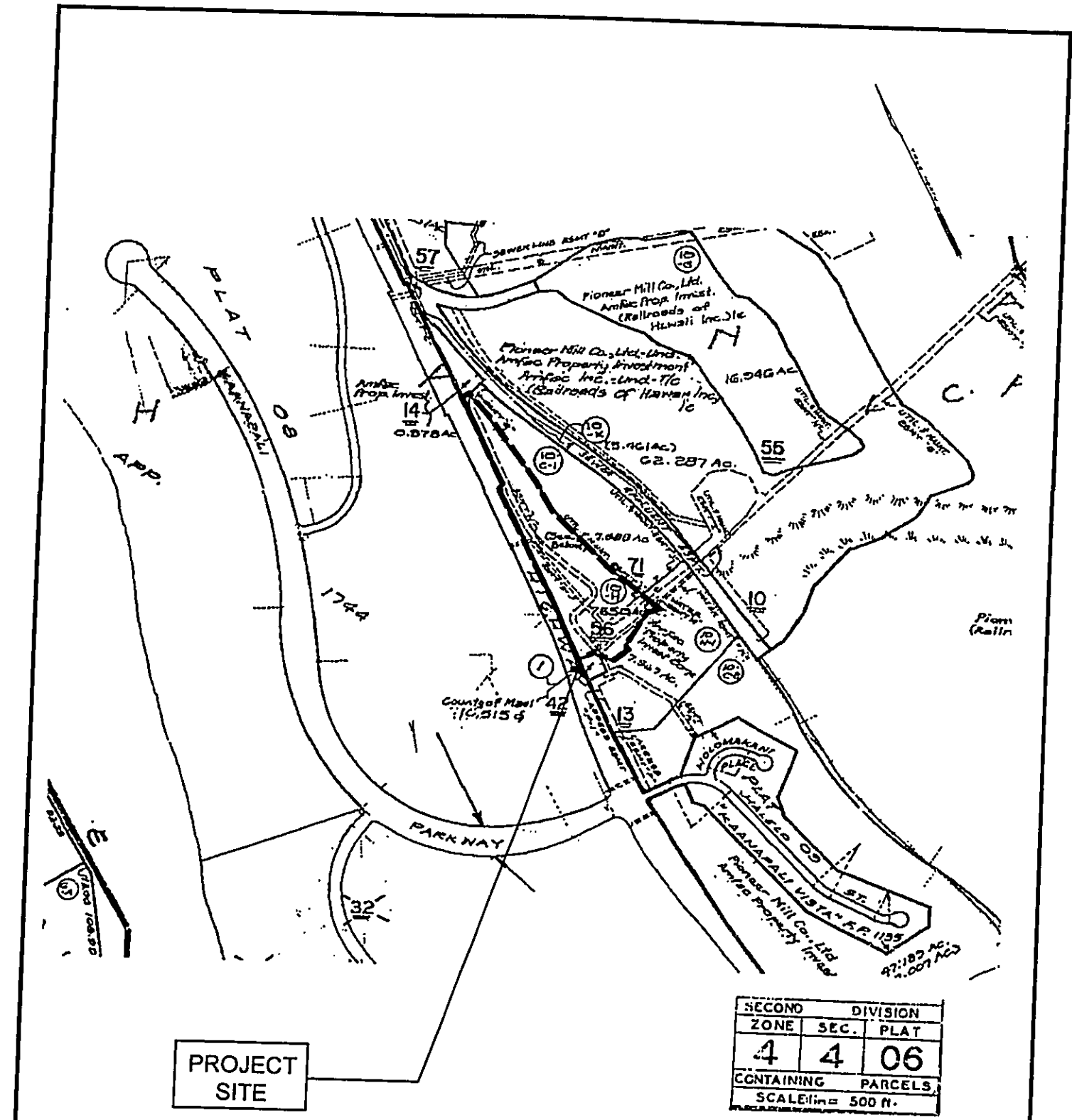

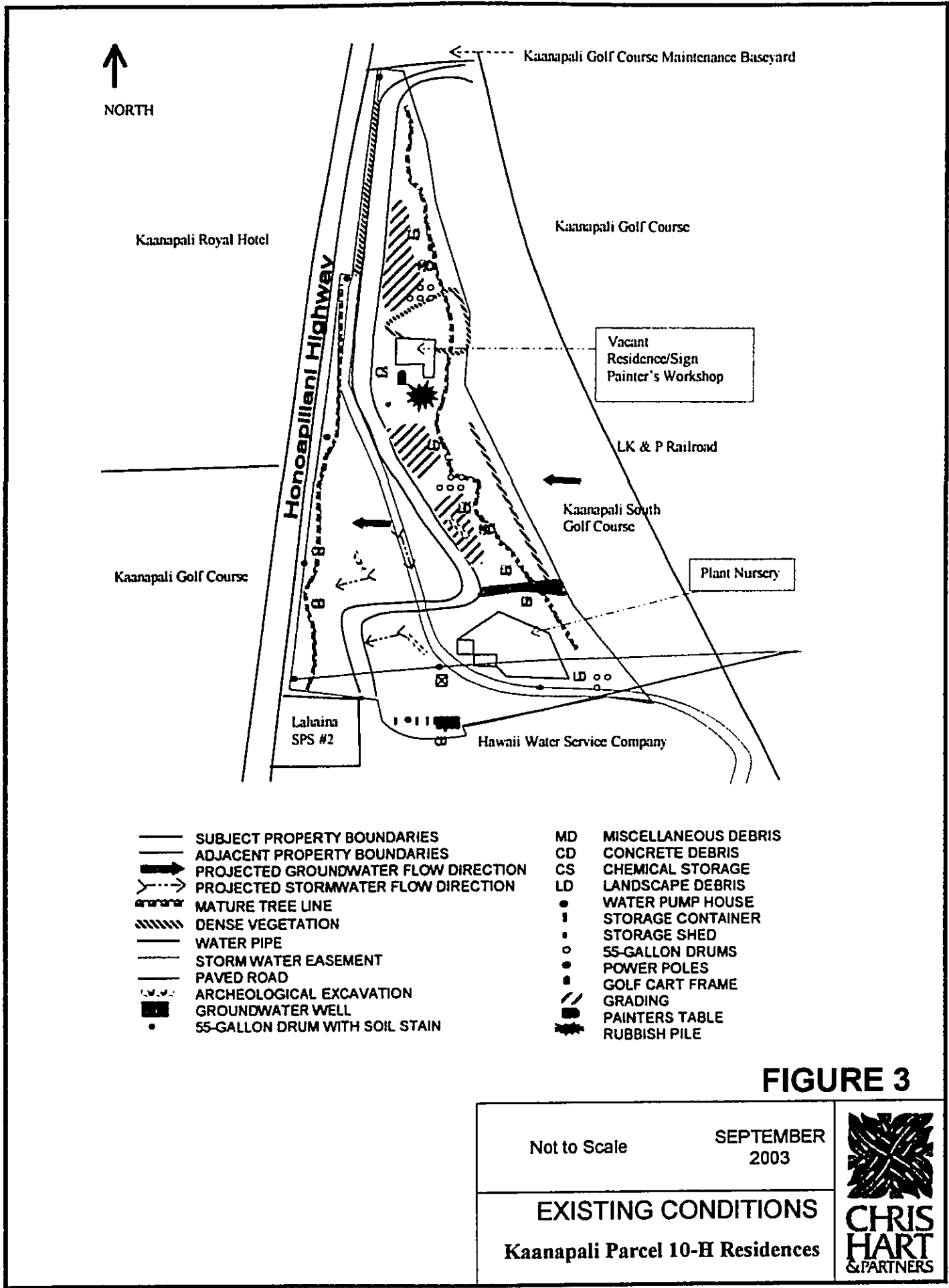


FIGURE 2

Parcel 56 Not to Scale	SEPTEMBER 2003	 CHRIS HART & PARTNERS
TAX MAP Kaanapali Parcel 10-H Residences		



↑
NORTH

Kaanapali Royal Hotel

Kaanapali Golf Course Maintenance Baseyard

Kaanapali Golf Course

Vacant Residence/Sign Painter's Workshop

Honoapiʻiani Highway

LK & P Railroad

Kaanapali Golf Course

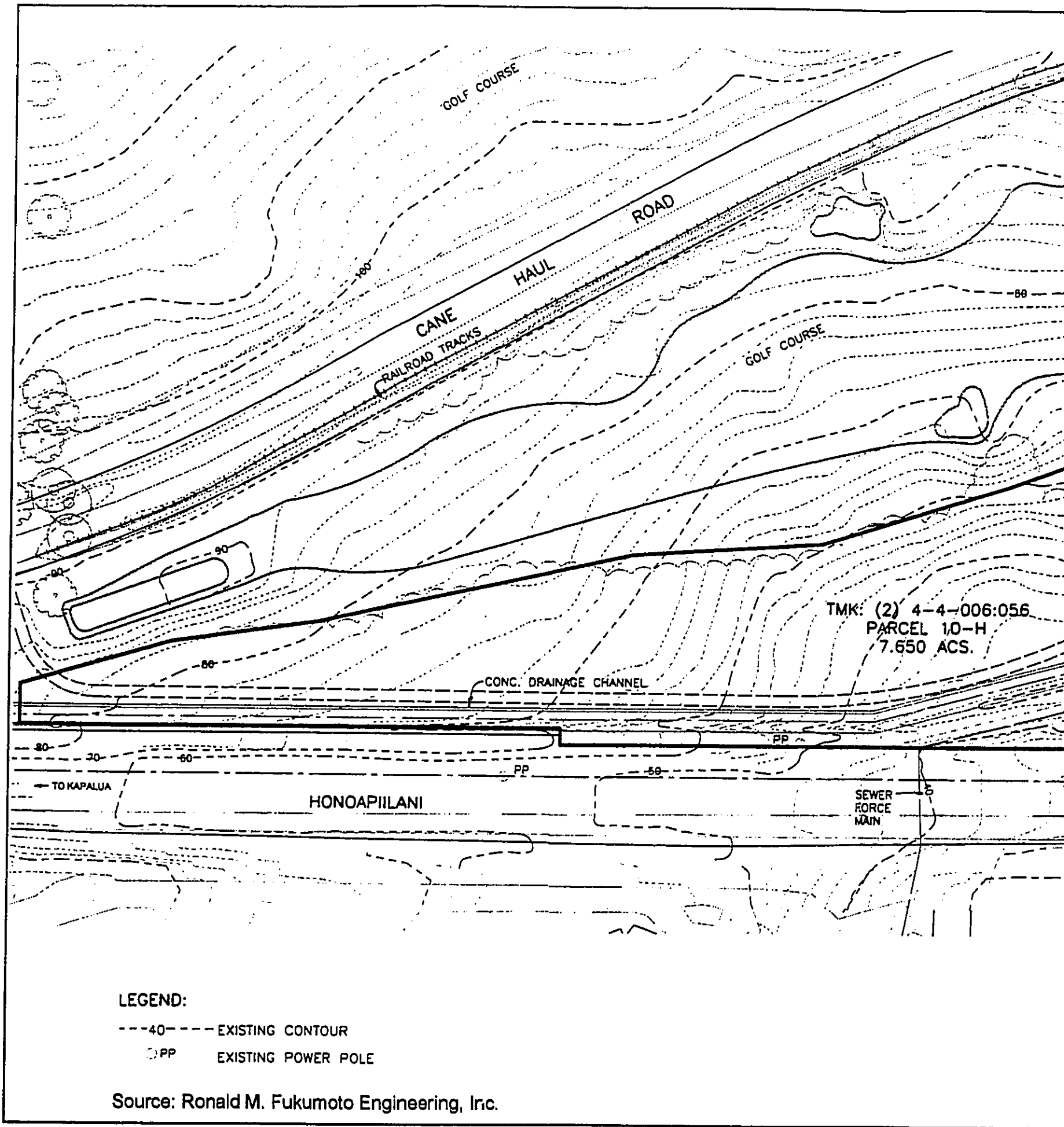
Kaanapali South Golf Course

Plant Nursery

Lahaina SPS #2

Hawaii Water Service Company

- | | | | |
|---|--------------------------------------|----|----------------------|
| — | SUBJECT PROPERTY BOUNDARIES | MD | MISCELLANEOUS DEBRIS |
| — | ADJACENT PROPERTY BOUNDARIES | CD | CONCRETE DEBRIS |
| → | PROJECTED GROUNDWATER FLOW DIRECTION | CS | CHEMICAL STORAGE |
| → | PROJECTED STORMWATER FLOW DIRECTION | LD | LANDSCAPE DEBRIS |
| — | MATURE TREE LINE | ● | WATER PUMP HOUSE |
| — | DENSE VEGETATION | ■ | STORAGE CONTAINER |
| — | WATER PIPE | ■ | STORAGE SHED |
| — | STORM WATER EASEMENT | ○ | 55-GALLON DRUMS |
| — | PAVED ROAD | ● | POWER POLES |
| — | ARCHEOLOGICAL EXCAVATION | ■ | GOLF CART FRAME |
| ■ | GROUNDWATER WELL | ■ | GRADING |
| ● | 55-GALLON DRUM WITH SOIL STAIN | ■ | PAINTERS TABLE |
| | | ■ | RUBBISH PILE |



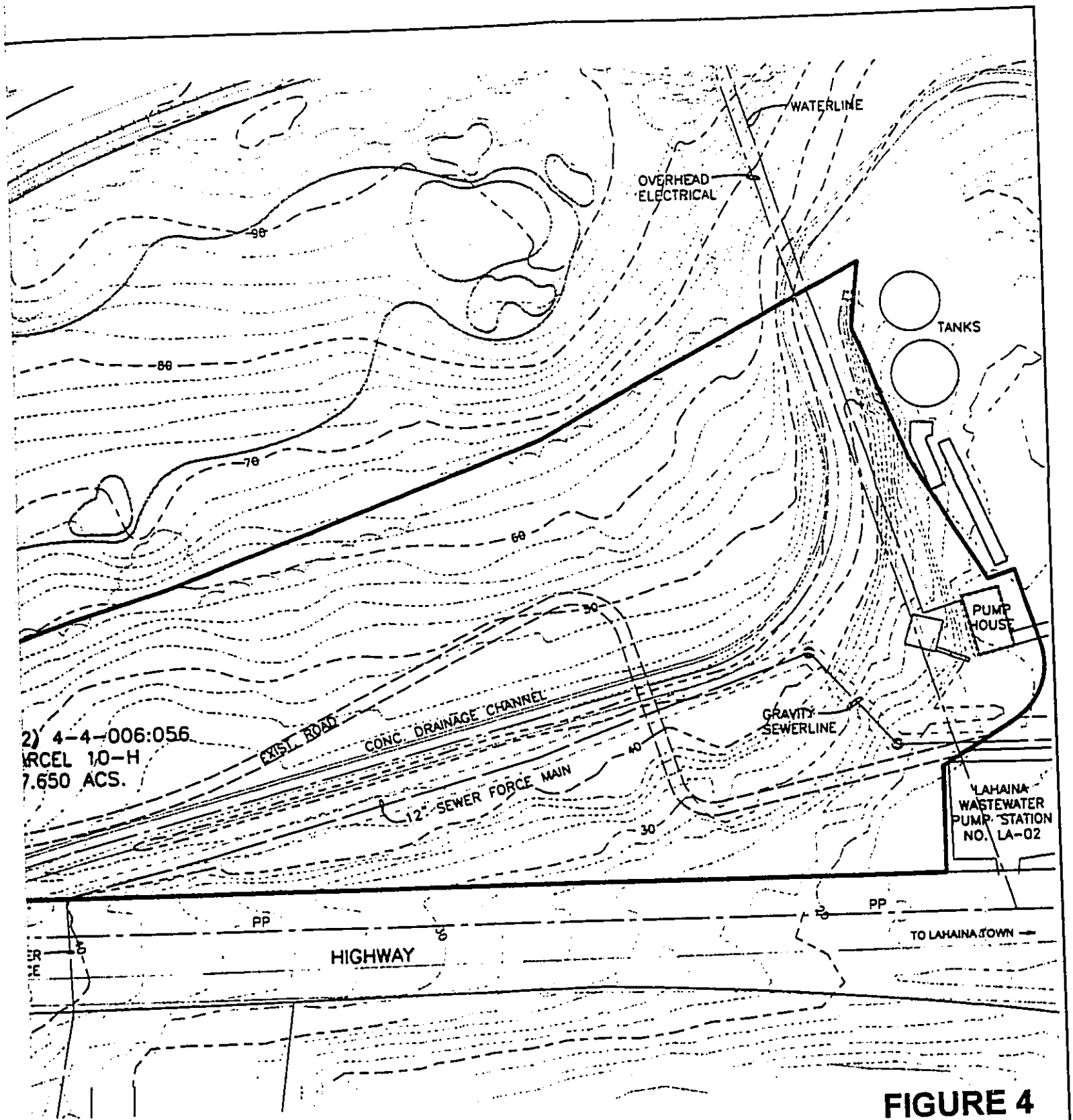
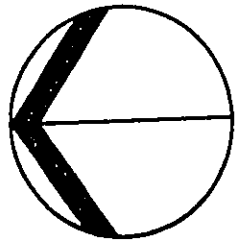

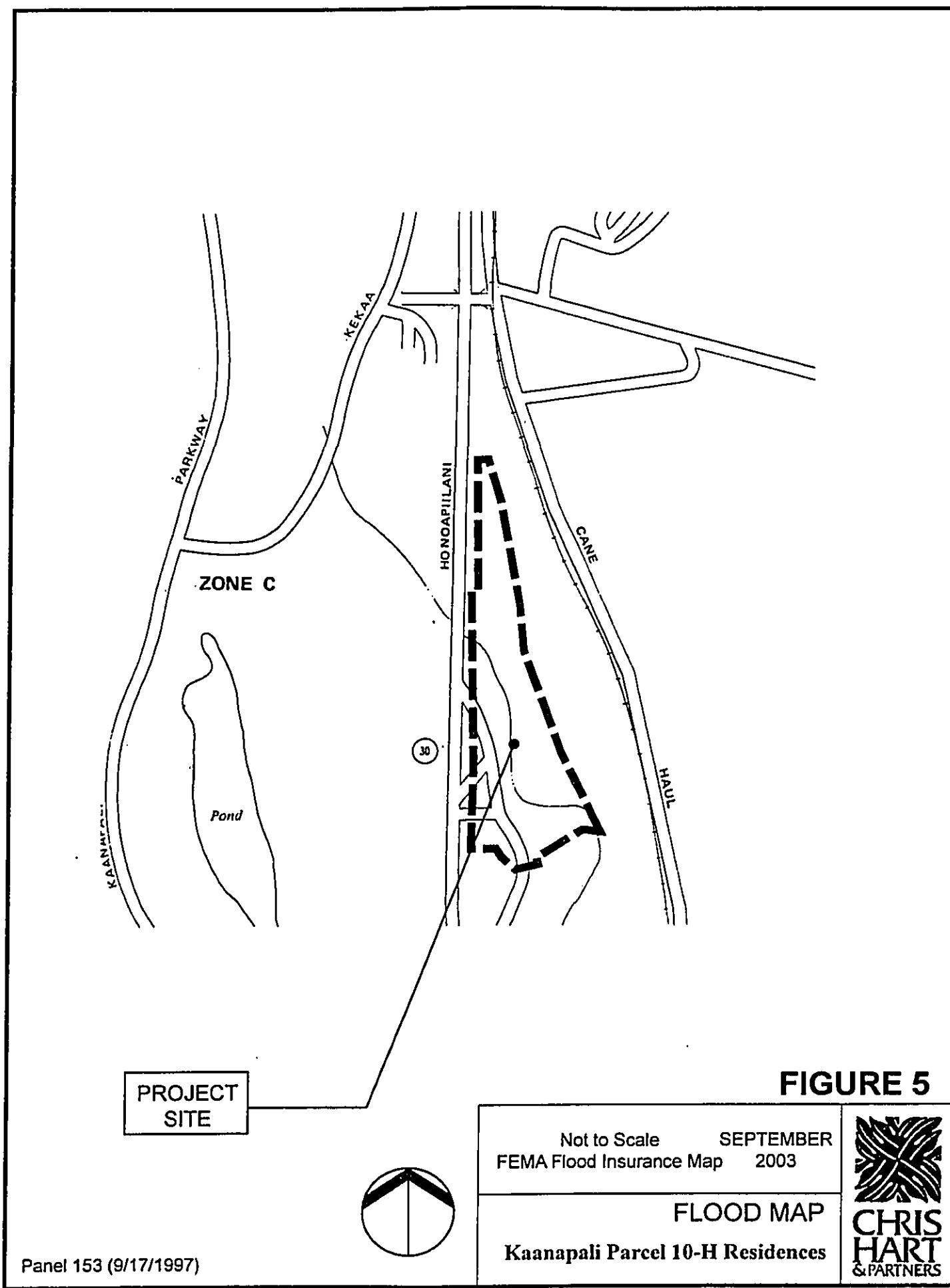


FIGURE 4



Scale: 1 Inch = 100 feet	SEPTEMBER 2003	 CHRIS HART & PARTNERS
TOPOGRAPHIC MAP Kaanapali Parcel 10-H Residences		



Panel 153 (9/17/1997)

FIGURE 5

Not to Scale SEPTEMBER
 FEMA Flood Insurance Map 2003

FLOOD MAP
Kaanapali Parcel 10-H Residences



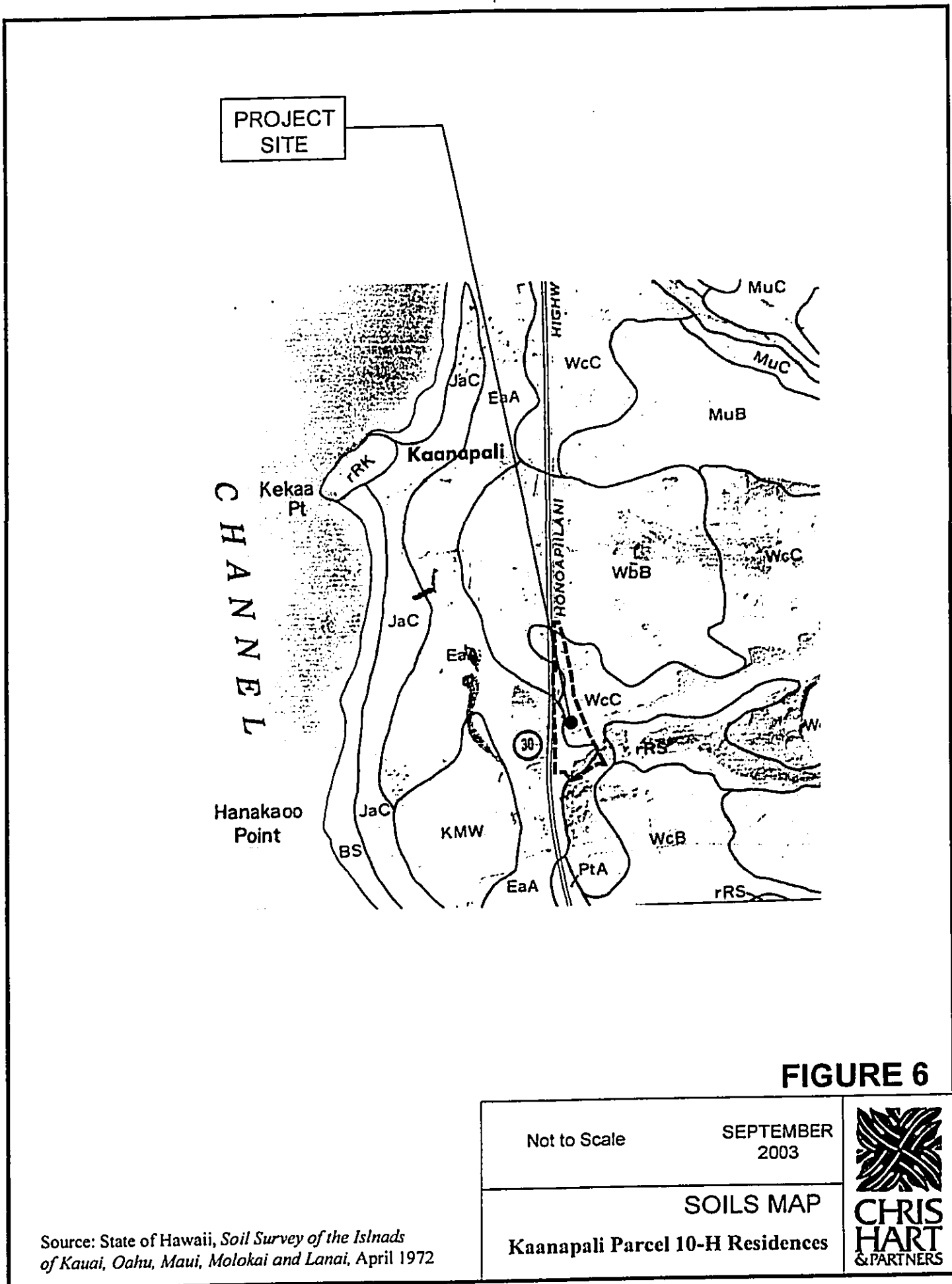



FIGURE 6

Not to Scale	SEPTEMBER 2003	
<p align="center">SOILS MAP</p> <p align="center">Kaanapali Parcel 10-H Residences</p>		

Source: State of Hawaii, *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai*, April 1972

RECEIVED AS FOLLOWS

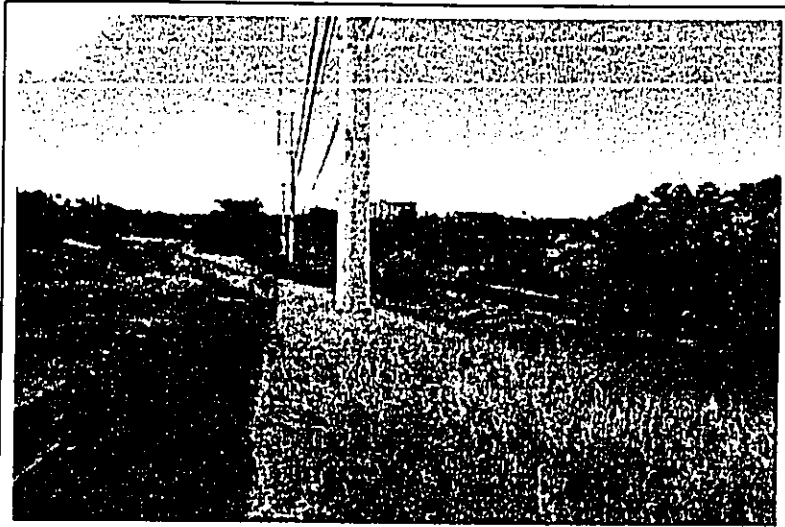


Photo 1: Looking south. Paved road & power poles running within project site. Honoapiilani Highway on the right.



Photo 2: Looking north. Paved road & power poles within project site.



Photo 3: Looking north. Interior of project site showing drainage ditch.

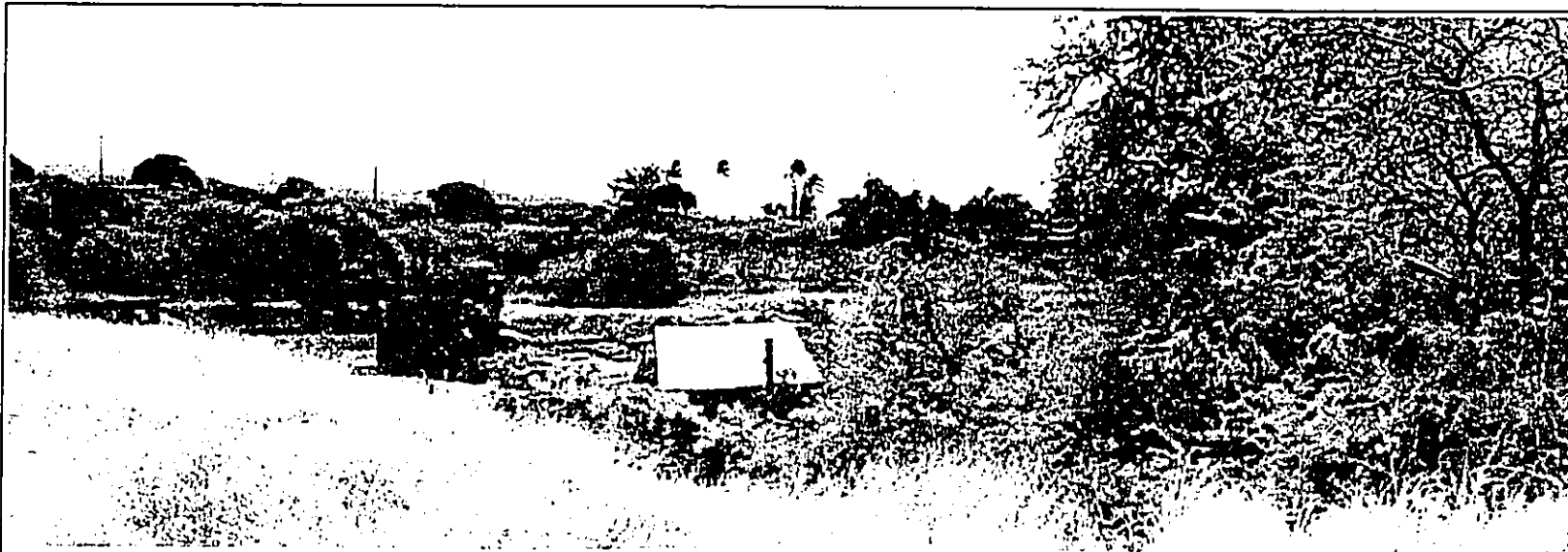
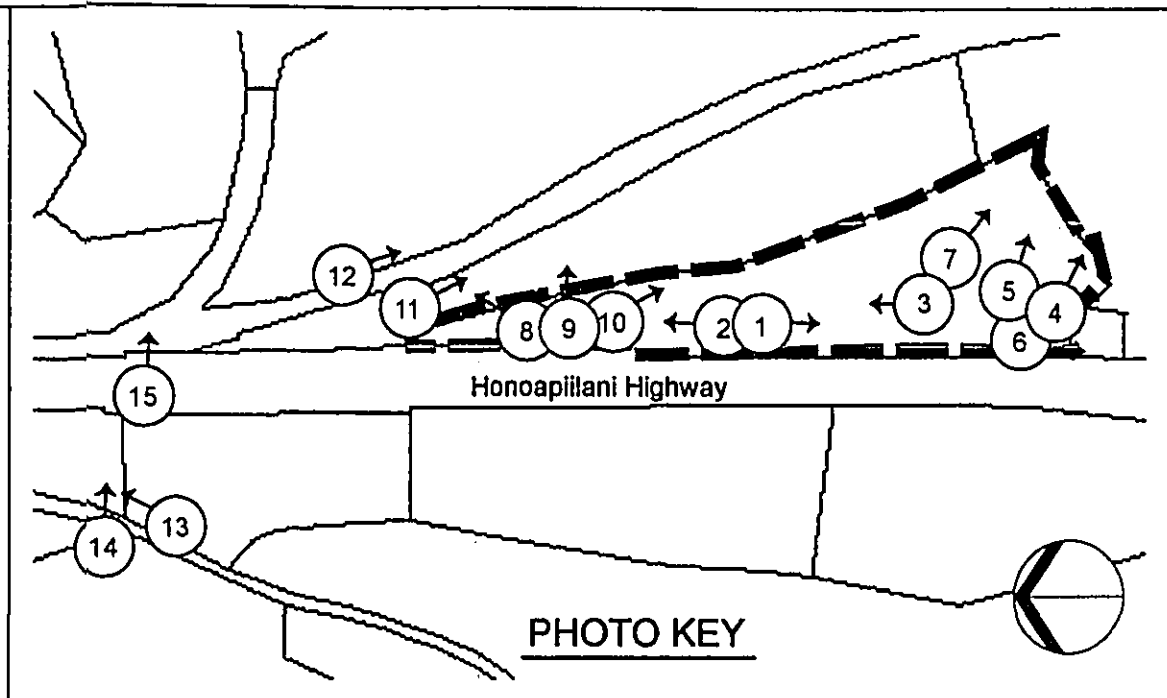


Photo 4: Hawaii Water Service Company pump house.



ect site showing drainage

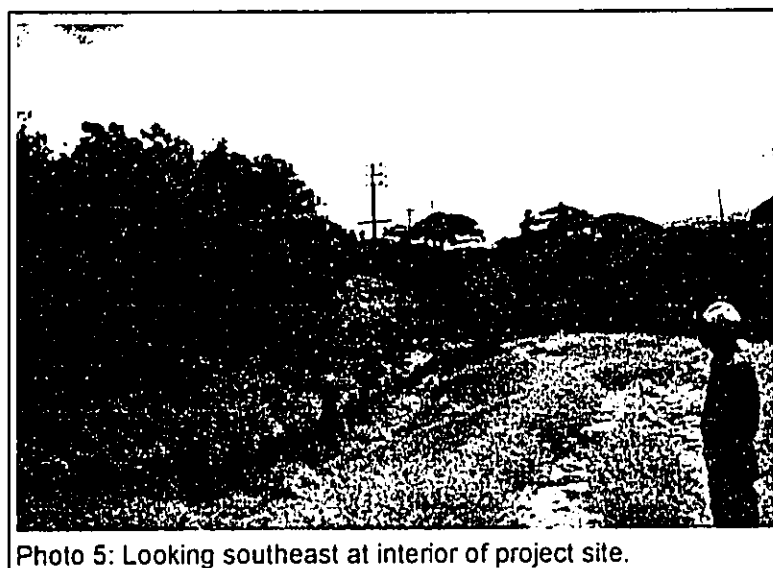



Photo 5: Looking southeast at interior of project site.



FIGURE 7.1

Taken 8/13/2003	SEPTEMBER 2003	 CHRIS HART <small>& PARTNERS</small>
PHOTOGRAPHS Kaanapali Parcel 10-H Residences		

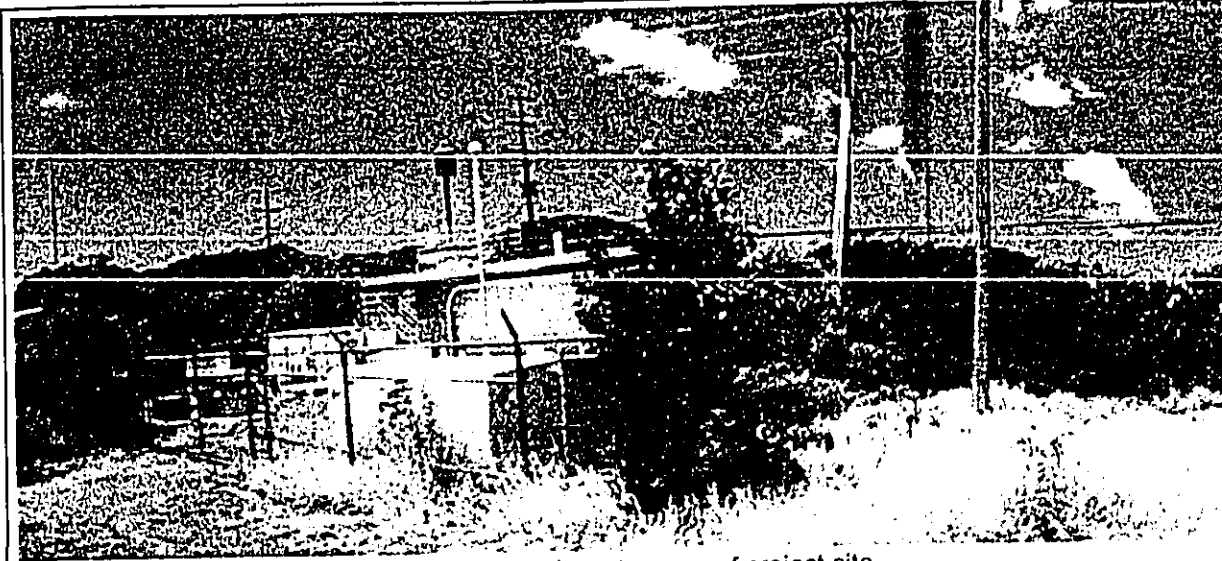


Photo 6: County sewage pump station at southwest corner of project site.



Photo 7: Plant nursery.



Photo 8: Landscape debris pile.



Photo 10: Landscape debris pile.

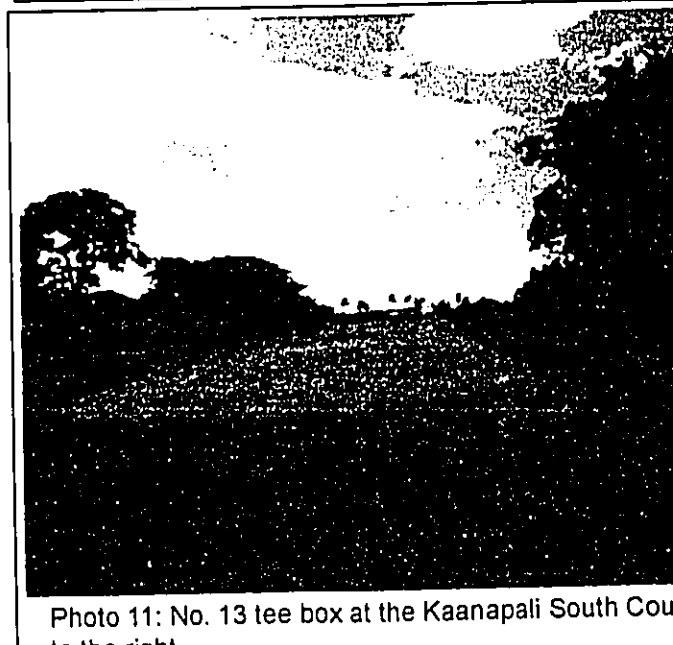
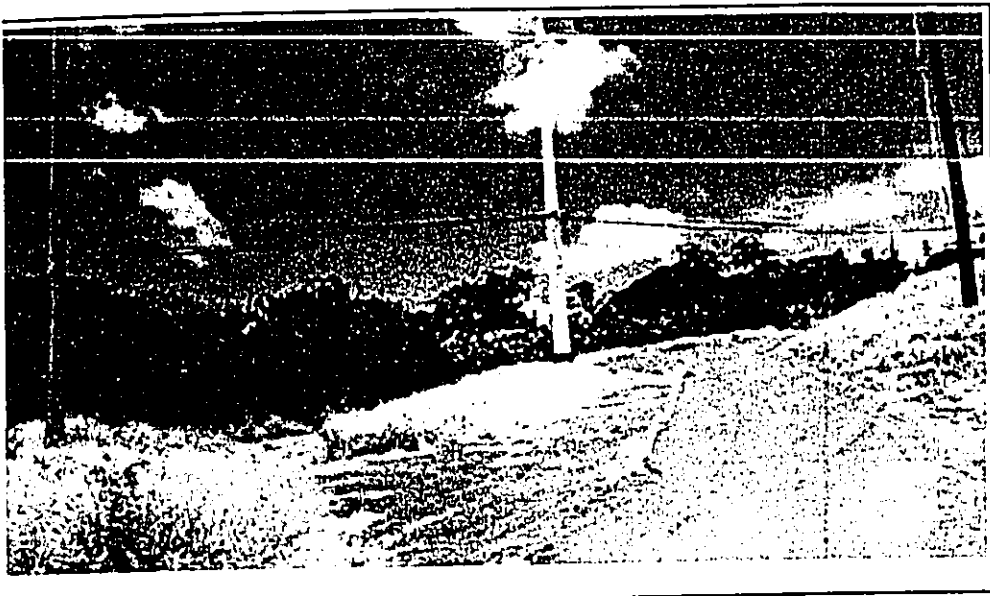


Photo 11: No. 13 tee box at the Kaanapali South Cou to the right.



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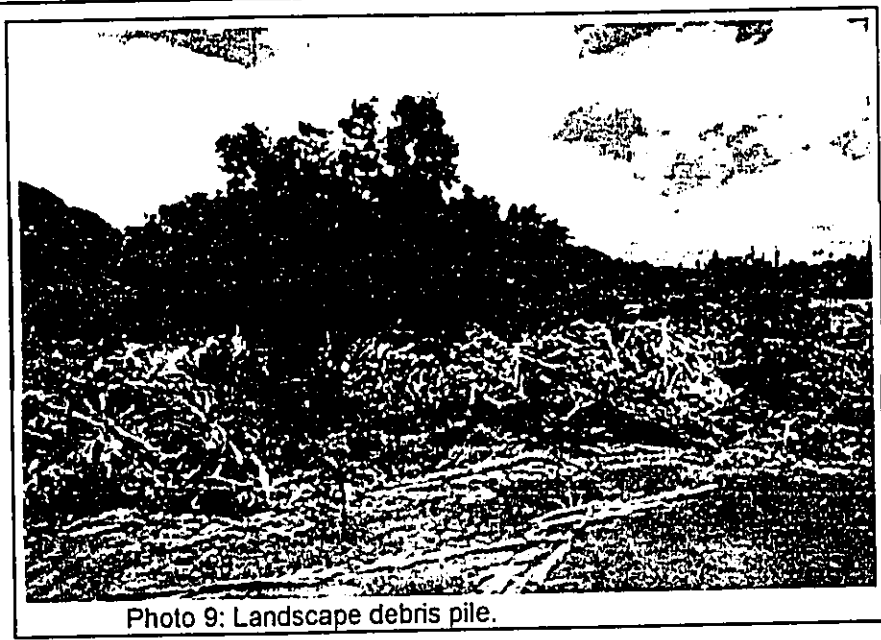


Photo 9: Landscape debris pile.



the Kaanapali South Course. Project site

FIGURE 7.2


Taken 8/13/2003	SEPTEMBER 2003	
PHOTOGRAPHS Kaanapali Parcel 10-H Residences		CHRIS HART & PARTNERS



Photo 12: Kaanapali Golf Course maintenance yard.



Photo 13: Ke

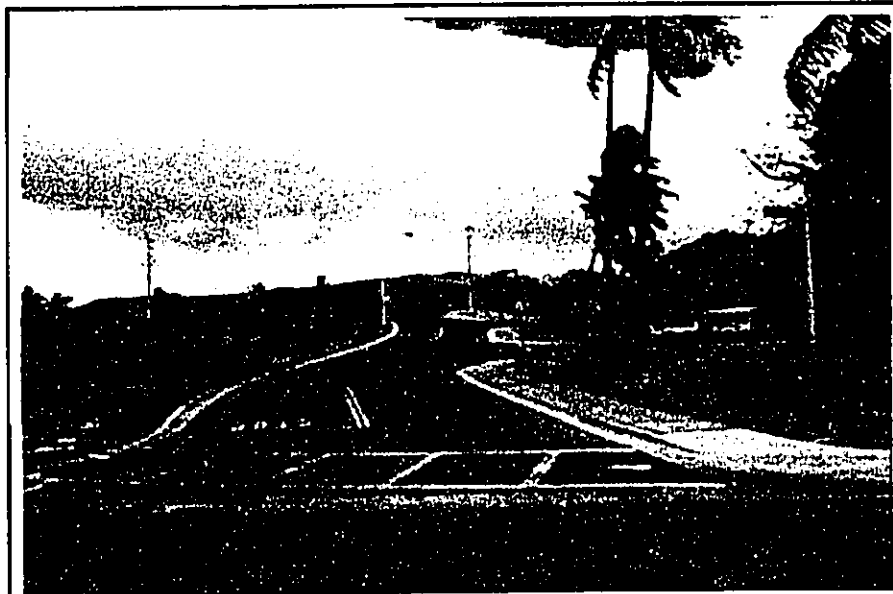


Photo 14: Kualapa Loop at intersection with Kekaa Drive.



Photo 15: Ku



Photo 13: Kekaa Drive (left) intersection with Kualapa Loop.



Photo 15: Kualapa Loop crossing over Honoapiilani Highway.

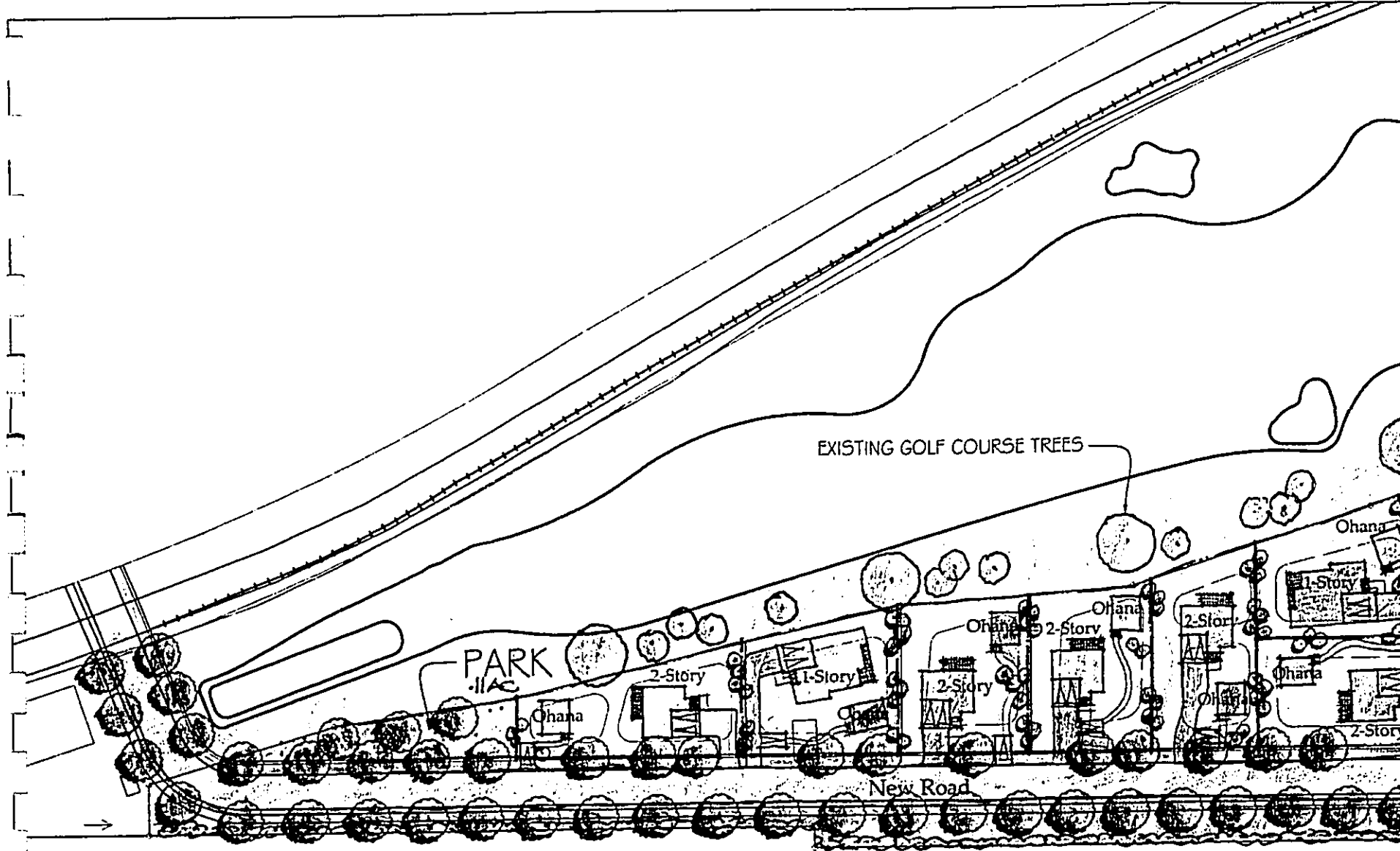
FIGURE 7.3

Taken 8/13/2003

SEPTEMBER
2003

PHOTOGRAPHS
Kaanapali Parcel 10-H Residences



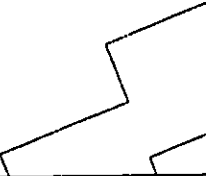
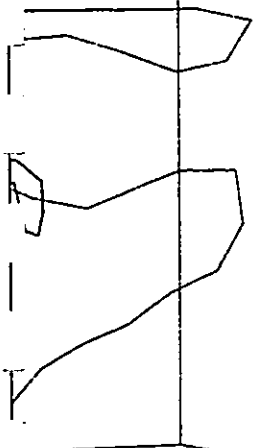


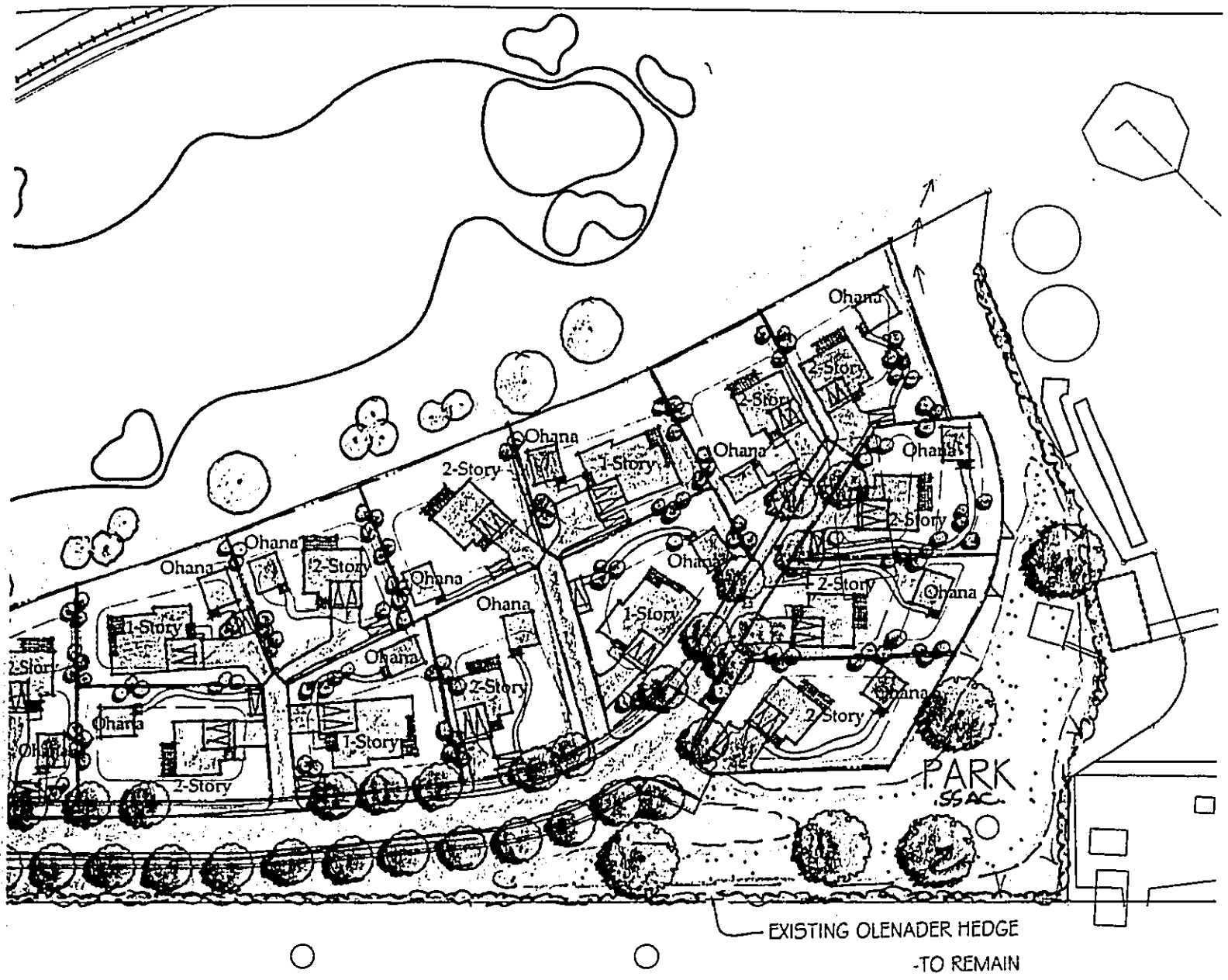
Unit Count:
 1-Story = 5 Units
 2-Story = 13 Units
 PARK AREA = 29,020 SQ.FT. (24200 & 4820)

HONOAPIILANI

Ka'anapali Parcel 10-H -CONCEPTUAL LANDSCAPE

January 12, 2004





HIGHWAY



LANDSCAPE PLAN

Plot Plan - Scheme #2

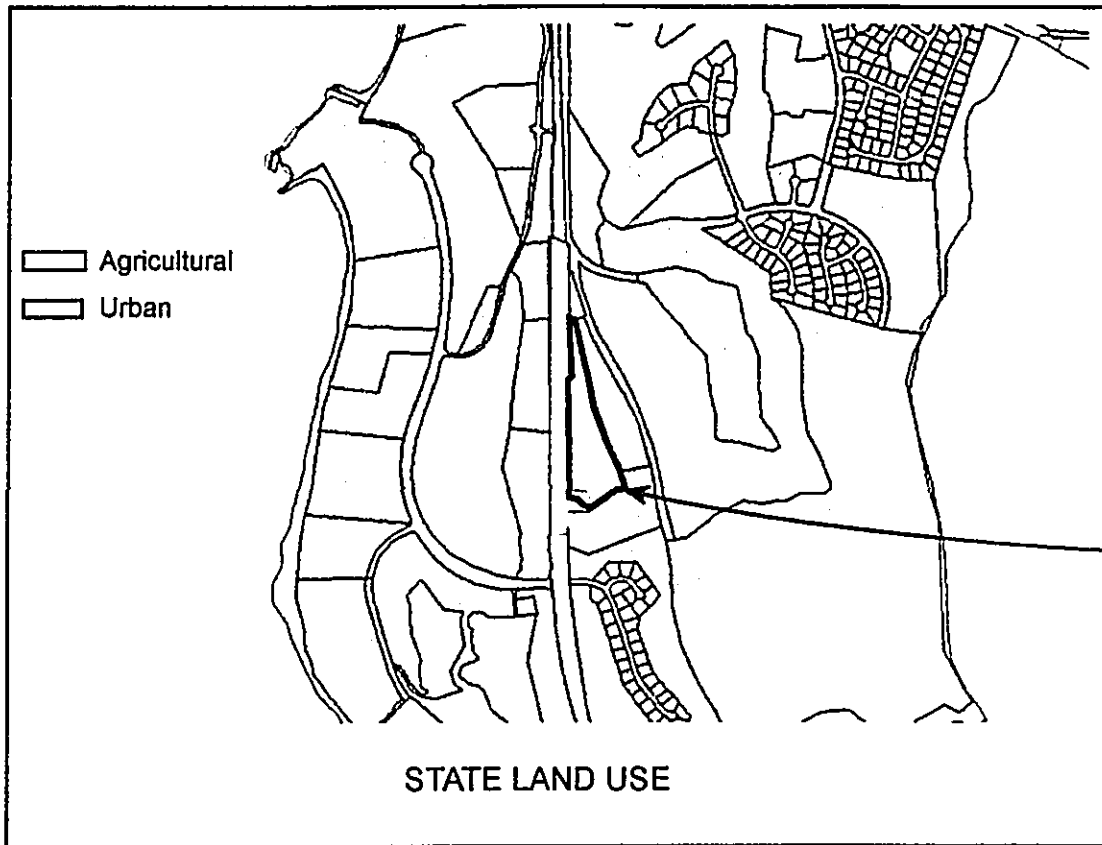
Design Partners Incorporated

FIGURE 8

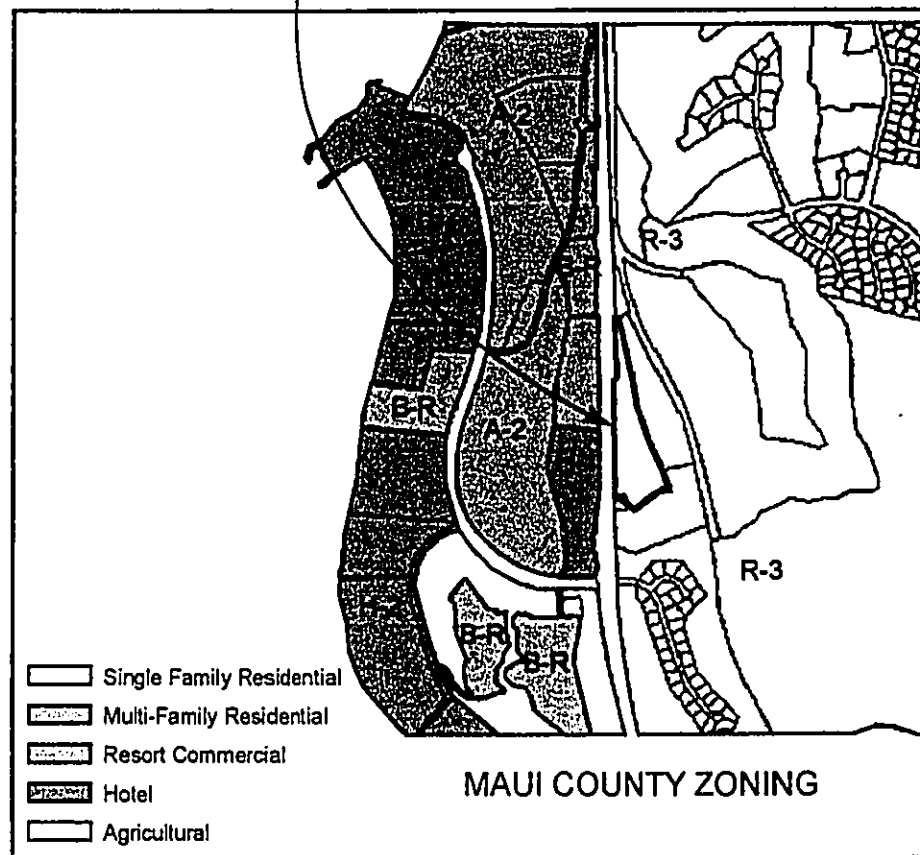


1955 Main Street
 Wailuku, HI 96793
 808-242-1955
 Fax: 808-242-1956

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PROJECT SITE



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E

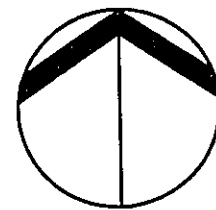
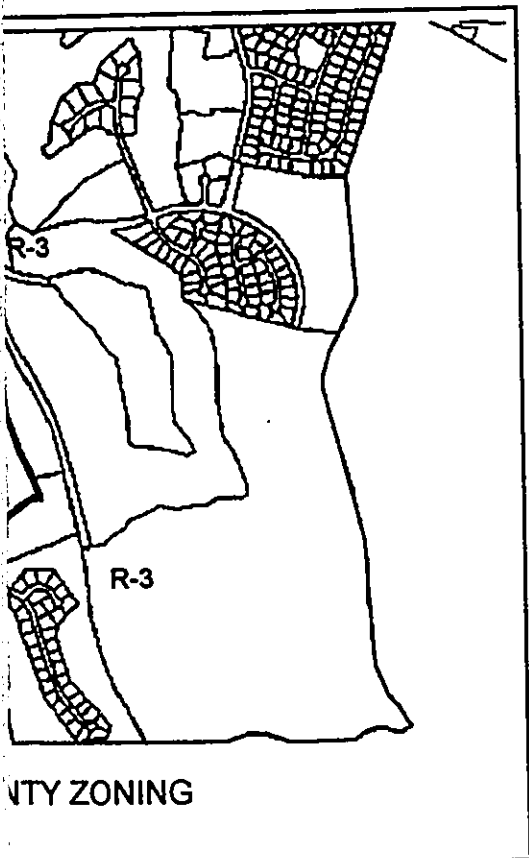
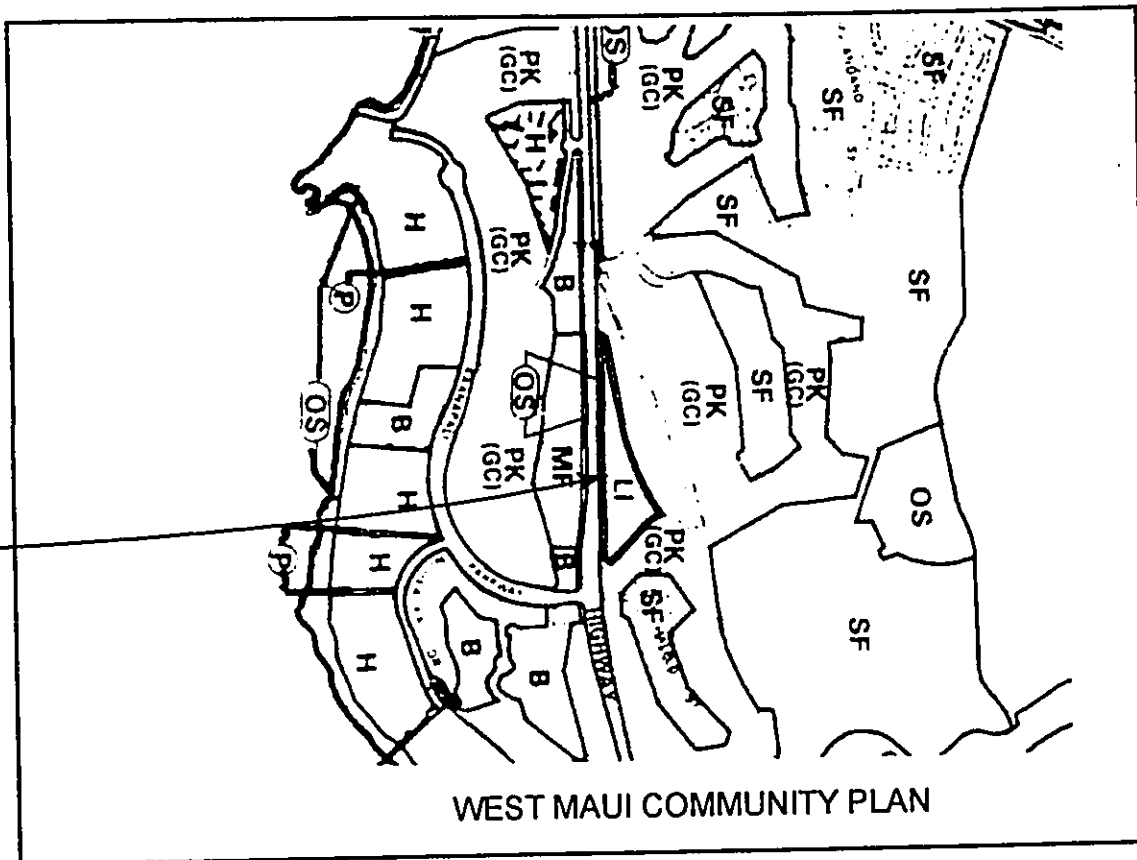

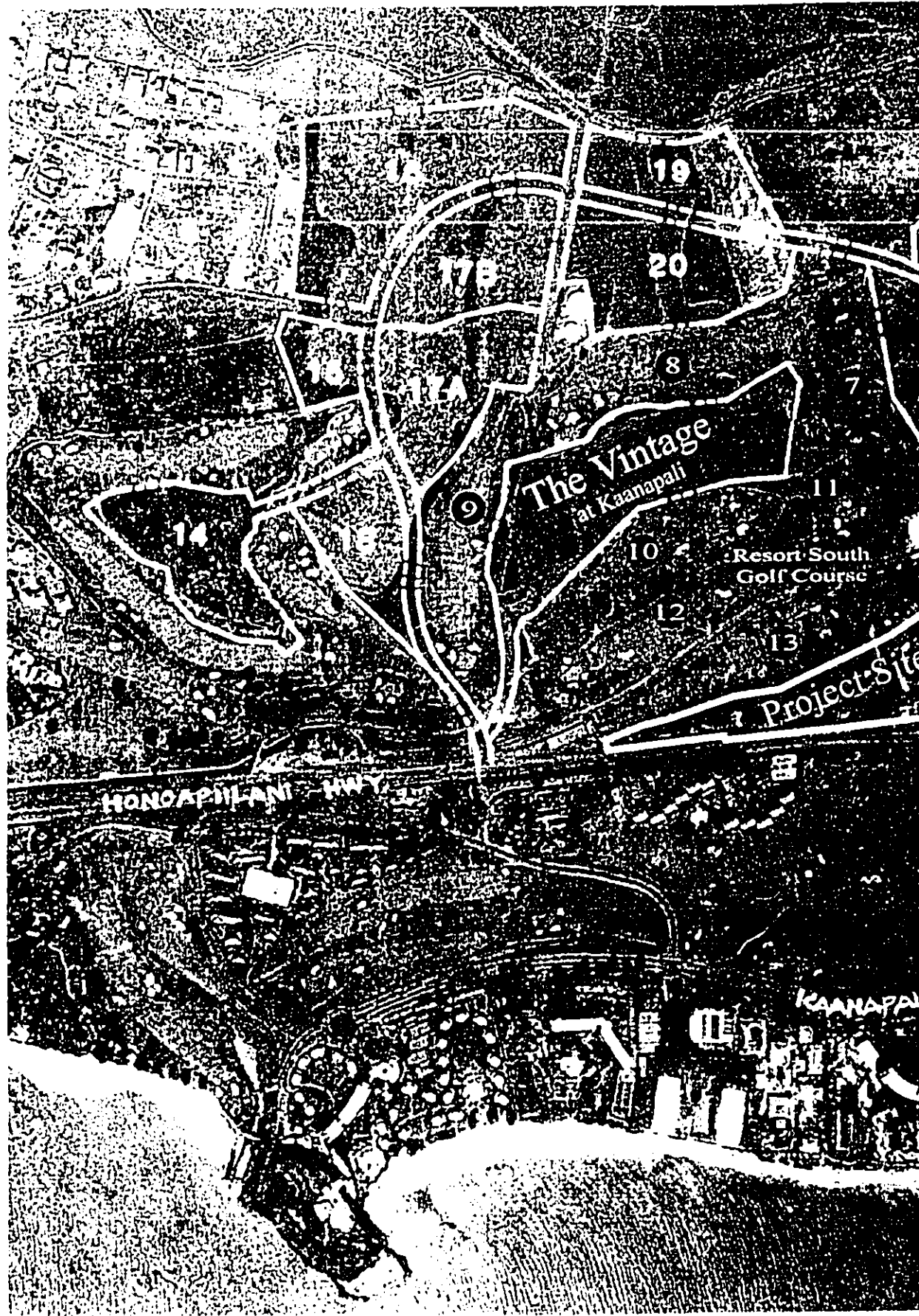


FIGURE 9

State Land Use West Maui Community Plan Maui County Zoning	FEBRUARY 2004	 CHRIS HART & PARTNERS
LAND USE DESIGNATIONS Kaanapali Parcel 10-H Residences		



Kaanapali Parcel 10-H

February 19, 2004.

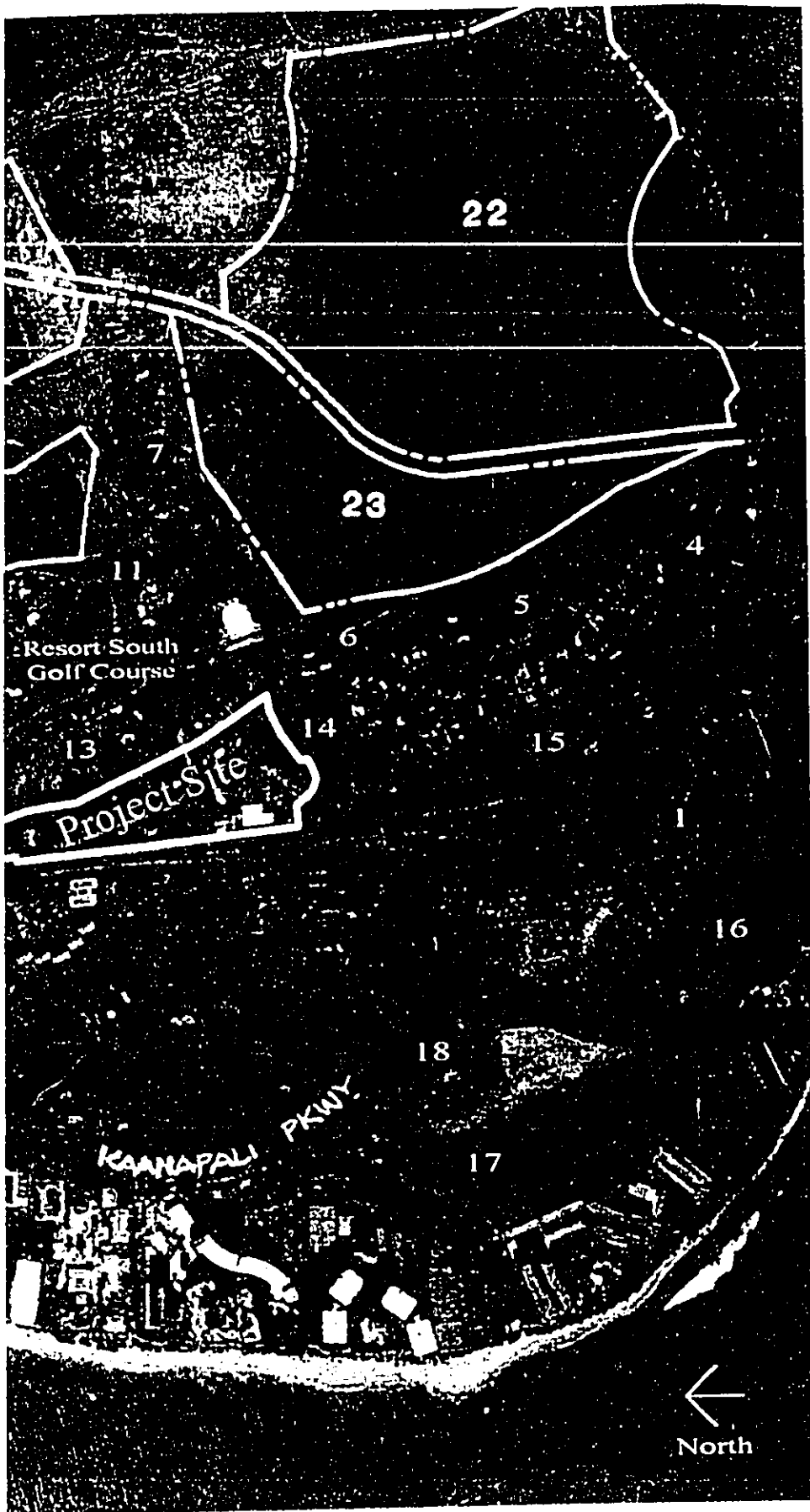


FIGURE 10.1



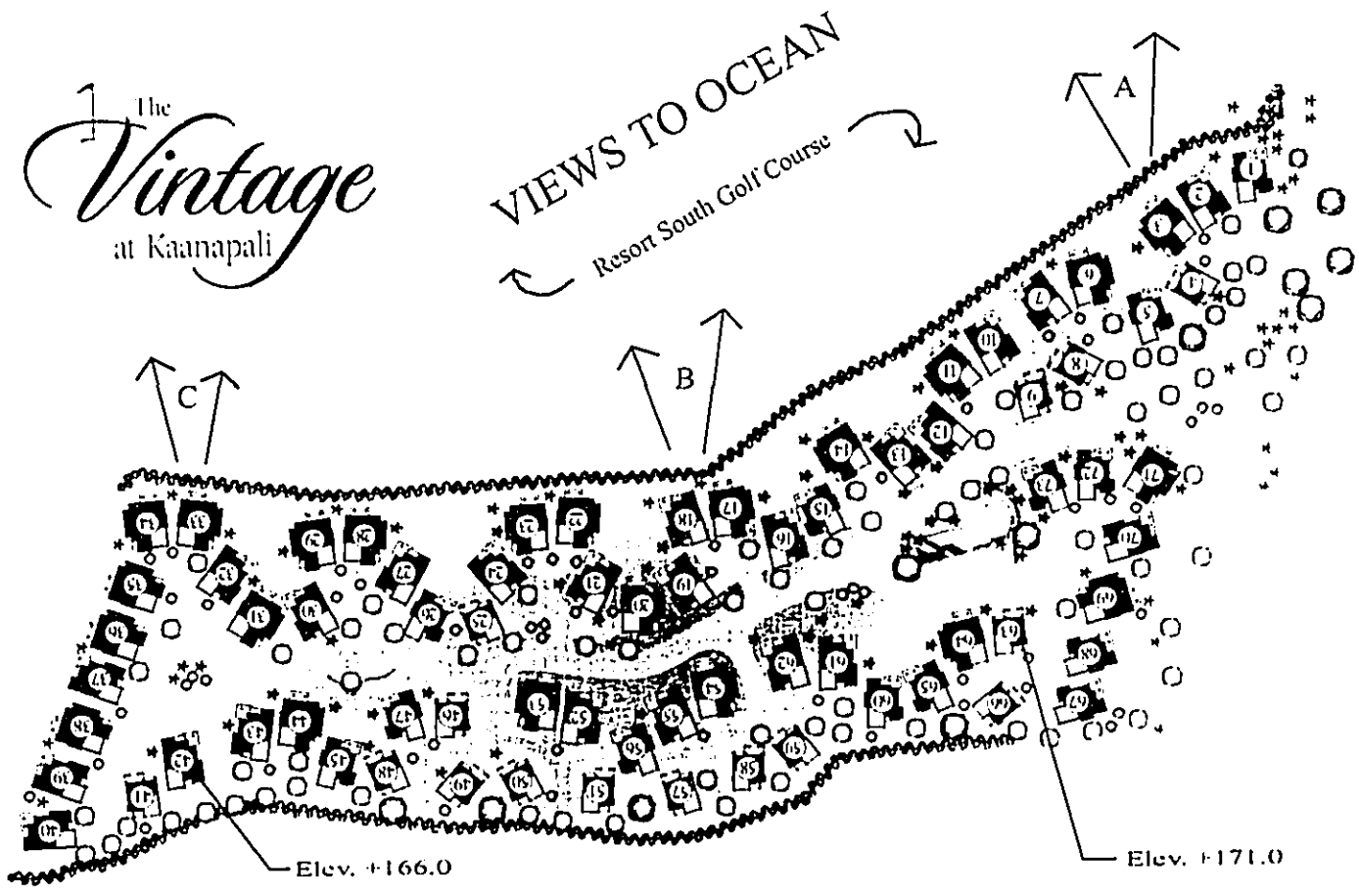
FEBRUARY
2004



Vicinity Map

Design Partners Incorporated

RECEIVED AS FOLLOWS



Kaanapali Parcel 10-H

February 19, 2004

RECEIVED AS FOLLOWS

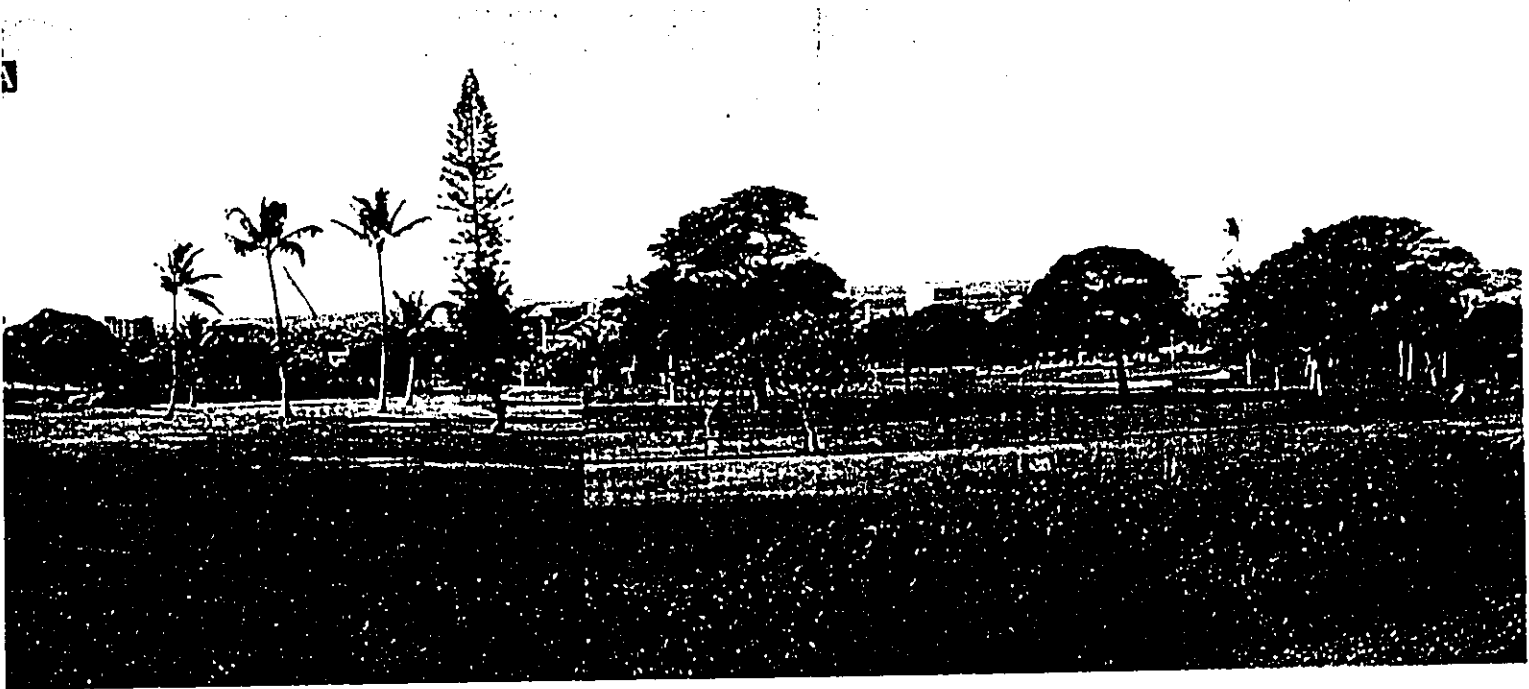
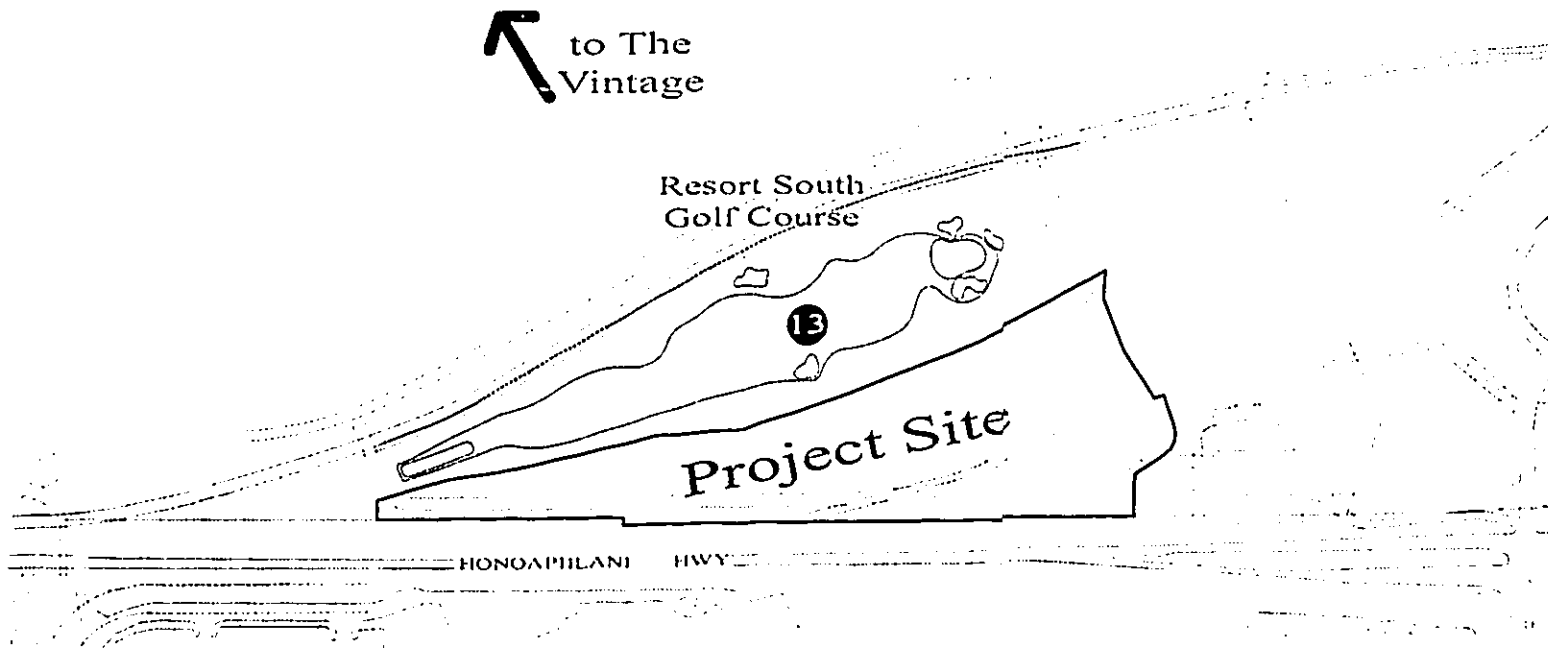


FIGURE 10.2

→

Existing Views from the Vintage
Design Partners Incorporated

RECEIVED AS FOLLOWS



Kaanapali Parcel 10-H

February 19, 2004

RECEIVED AS FOLLOWS

FIGURE 10.3

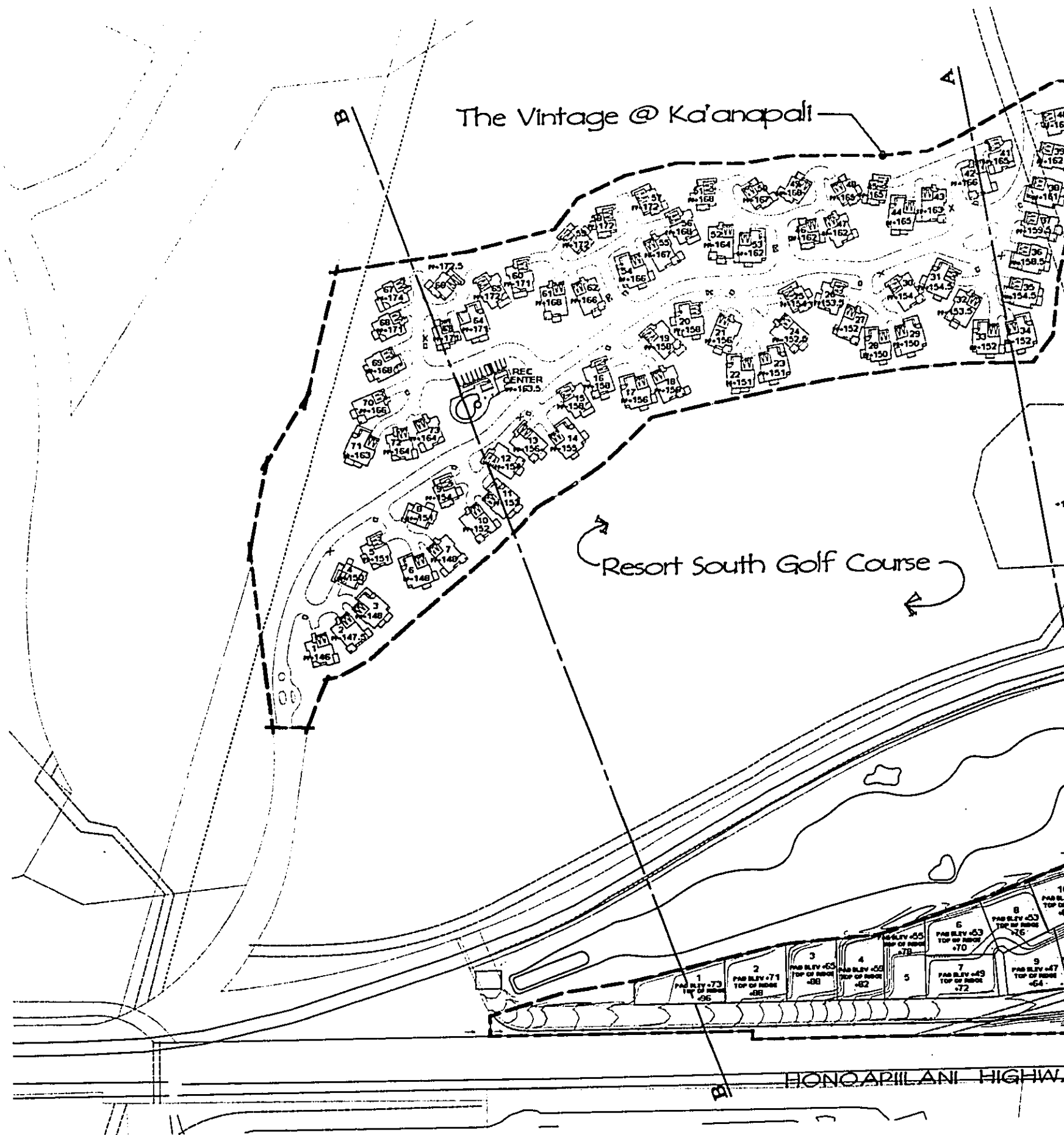


FEBRUARY
2004



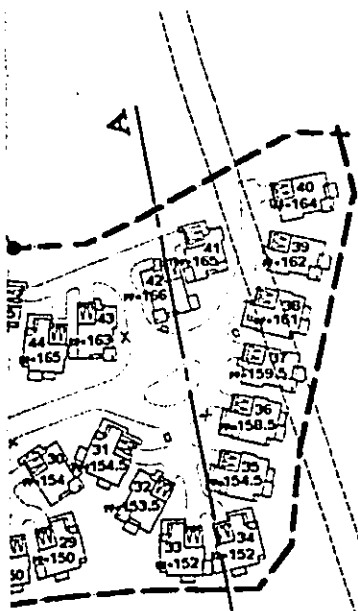
Existing Views from the Highway

Design Partners Incorporated



Kaanapali Parcel 10-H

February 19, 2004



The Vintage @ Kaanapali		Kaanapali Parcel 10-H	
	Finished Floor Elevation		Top of Roof Ridge
Lot 1	146	Lot 1	96
Lot 3	148	Lot 2	88
Lot 6	148	Lot 3	88
Lot 10	152	Lot 4	82
Lot 14	155	Lot 5	78
Lot 17	156	Lot 6	70
Lot 22	151	Lot 8	76
Lot 23	151	Lot 10	80
Lot 28	150	Lot 12	74
Lot 33	152	Lot 14	78
Lot 34	152	Lot 15	78
			Height Difference
			50
			60
			60
			70
			77
			86
			75
			71
			76
			74
			74

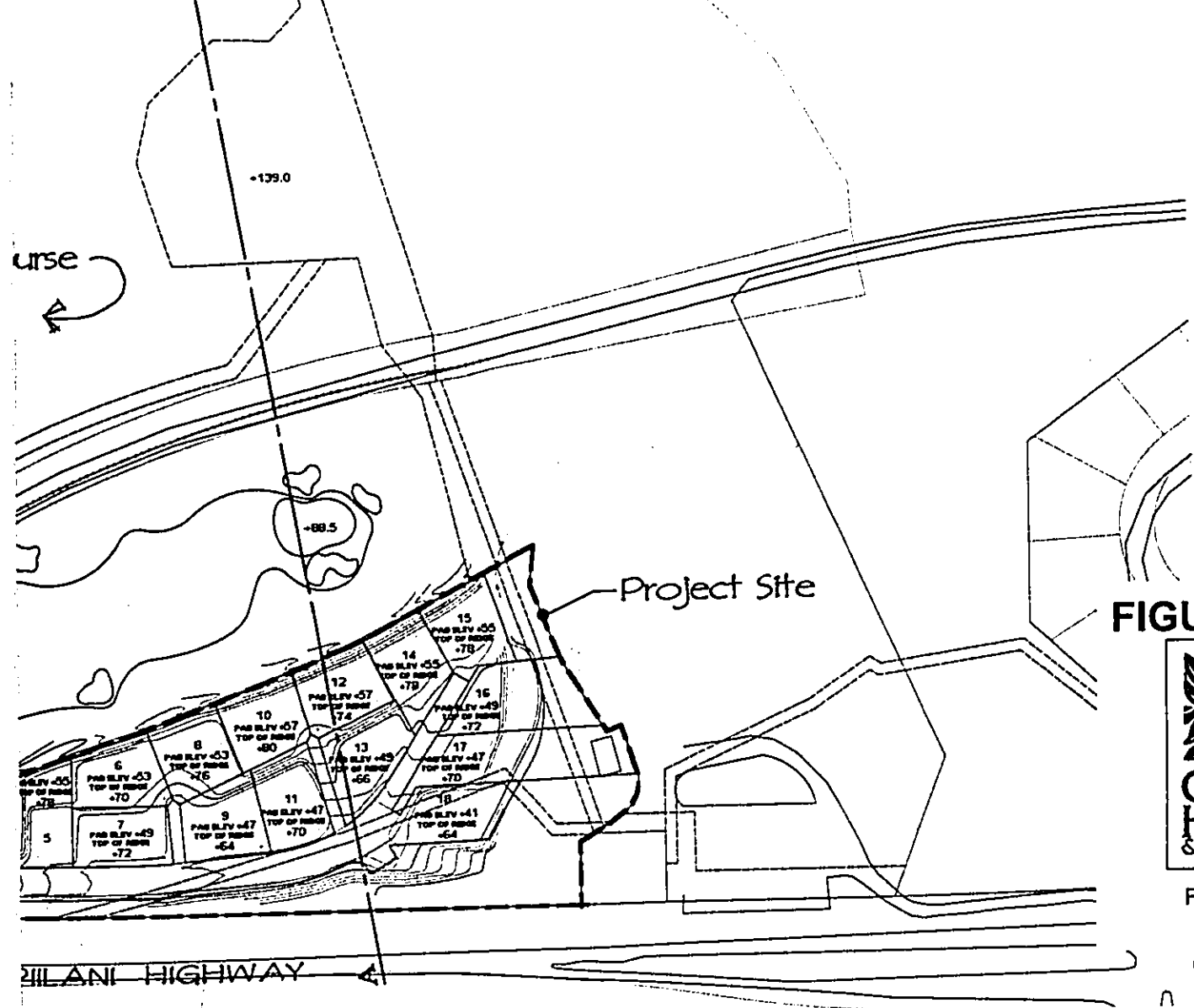


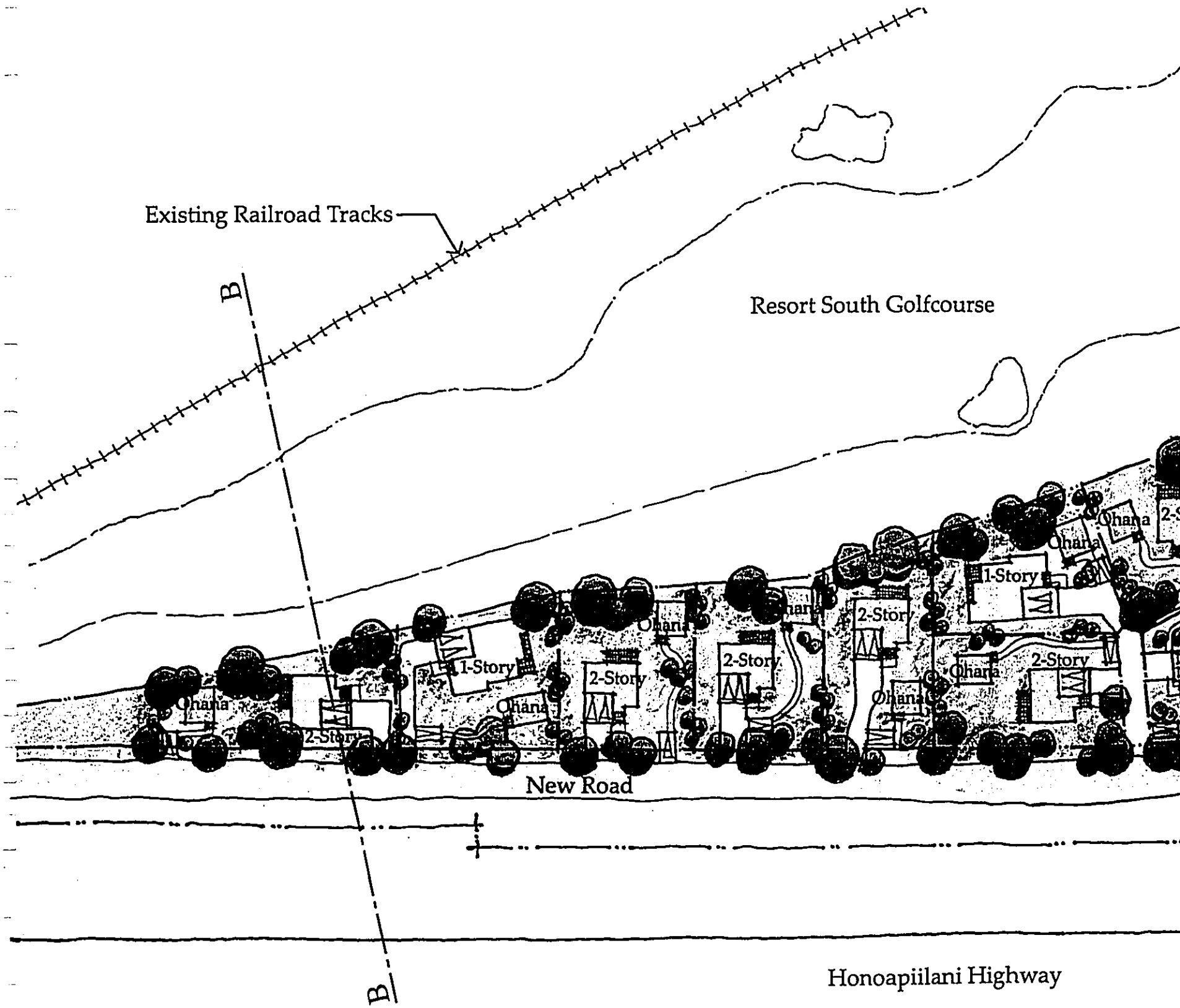
FIGURE 10.4



FEBRUARY 2004

Height Analysis

Design Partners Incorporated



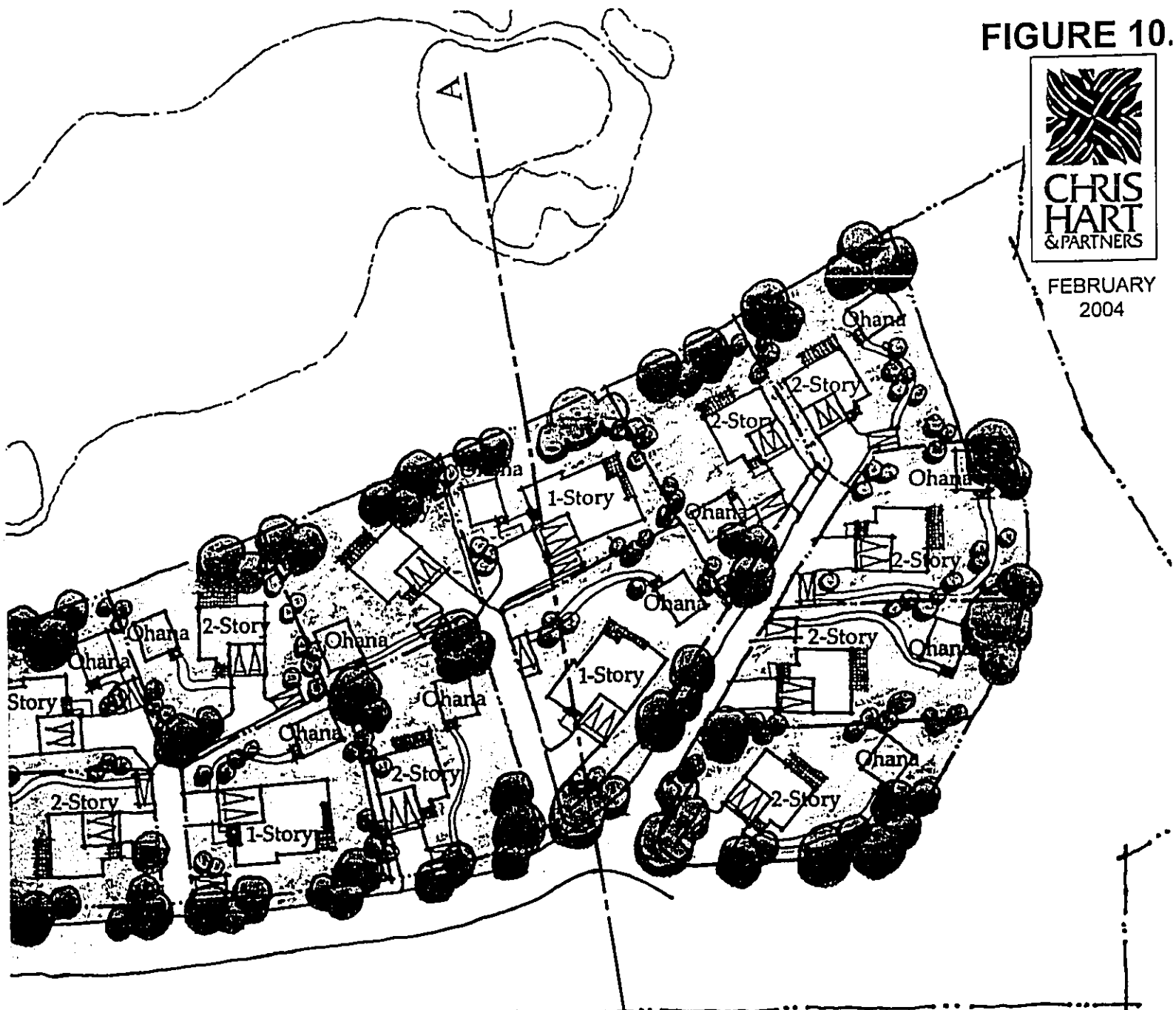
Kaanapali Parcel 10-H

February 19, 2004

FIGURE 10.



FEBRUARY 2004



ghway

Unit Summary:

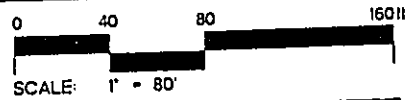
1-Story Model:	5 Units
2-Story Model:	13 Units
Total:	18 Units
Ohana Units:	18 Units

Acreage: 7.65 Acres
Density: 2.35 du/ac

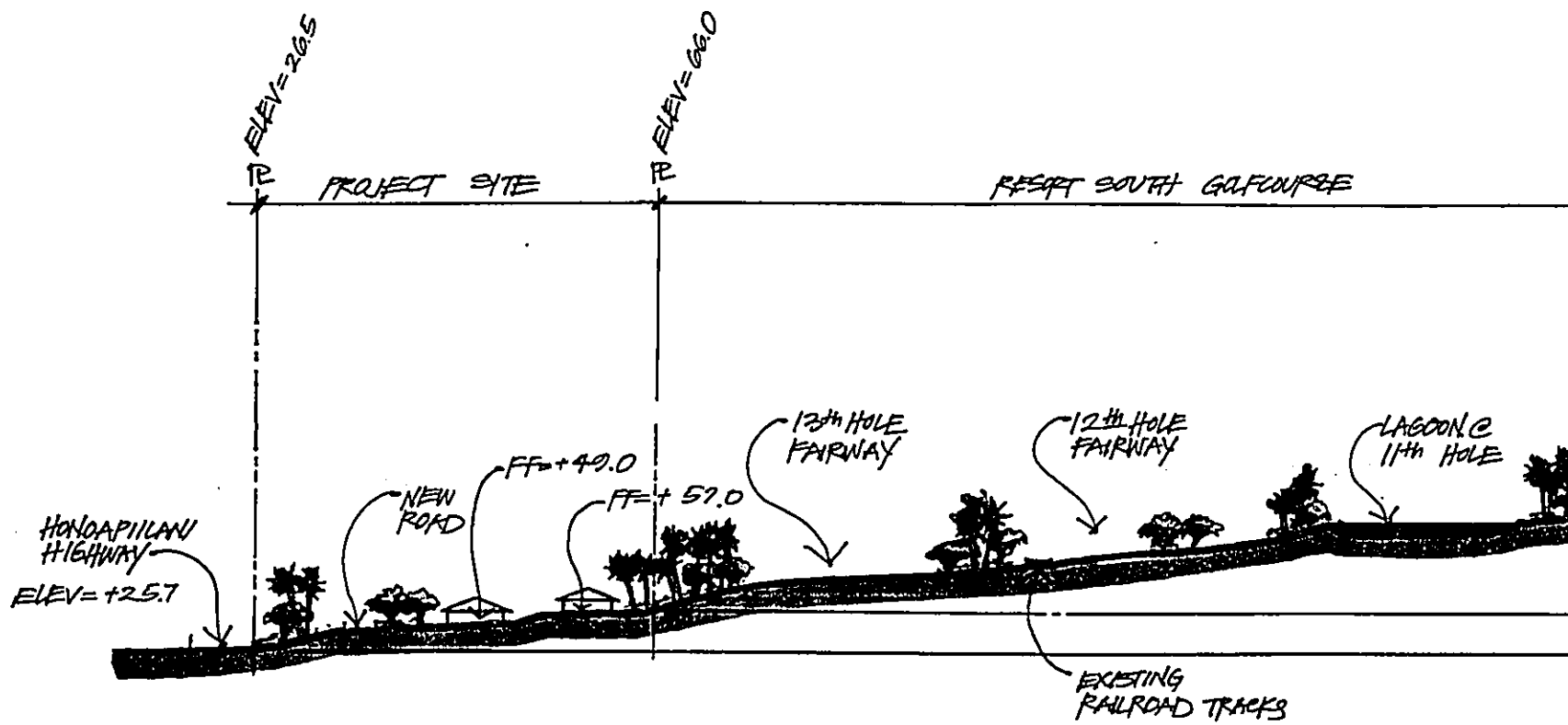


North

Conceptual Site Plan



Design Partners Incorporated



Kaanapali Parcel 10-H

February 19, 2004

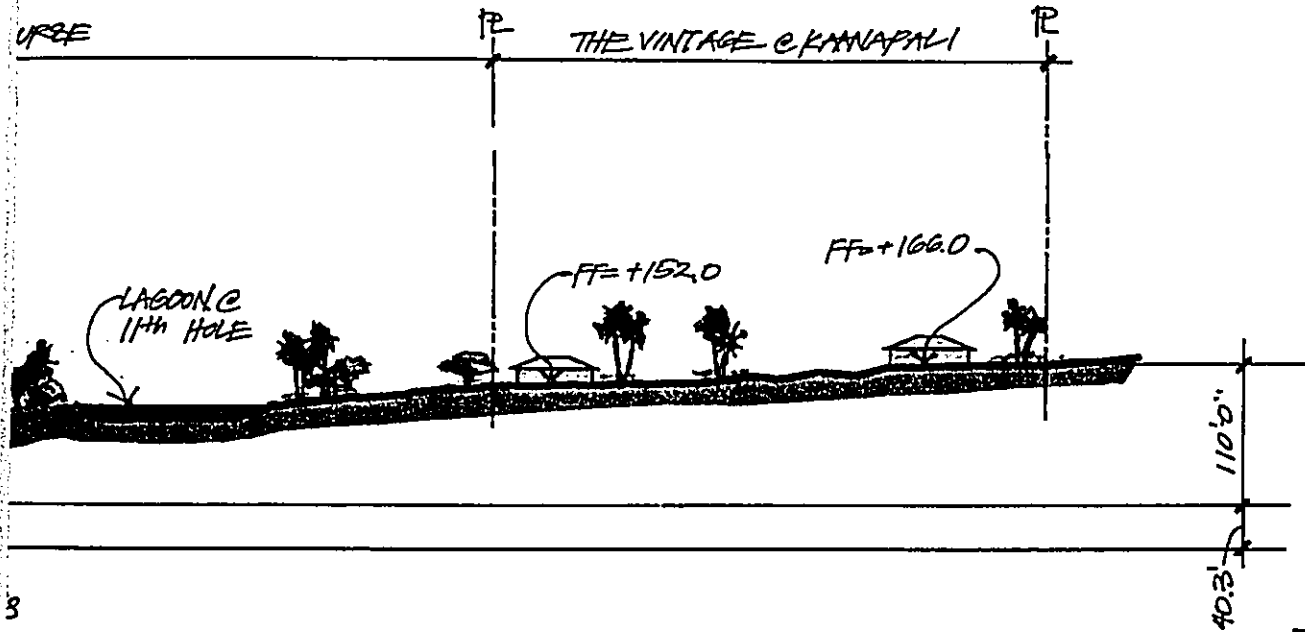


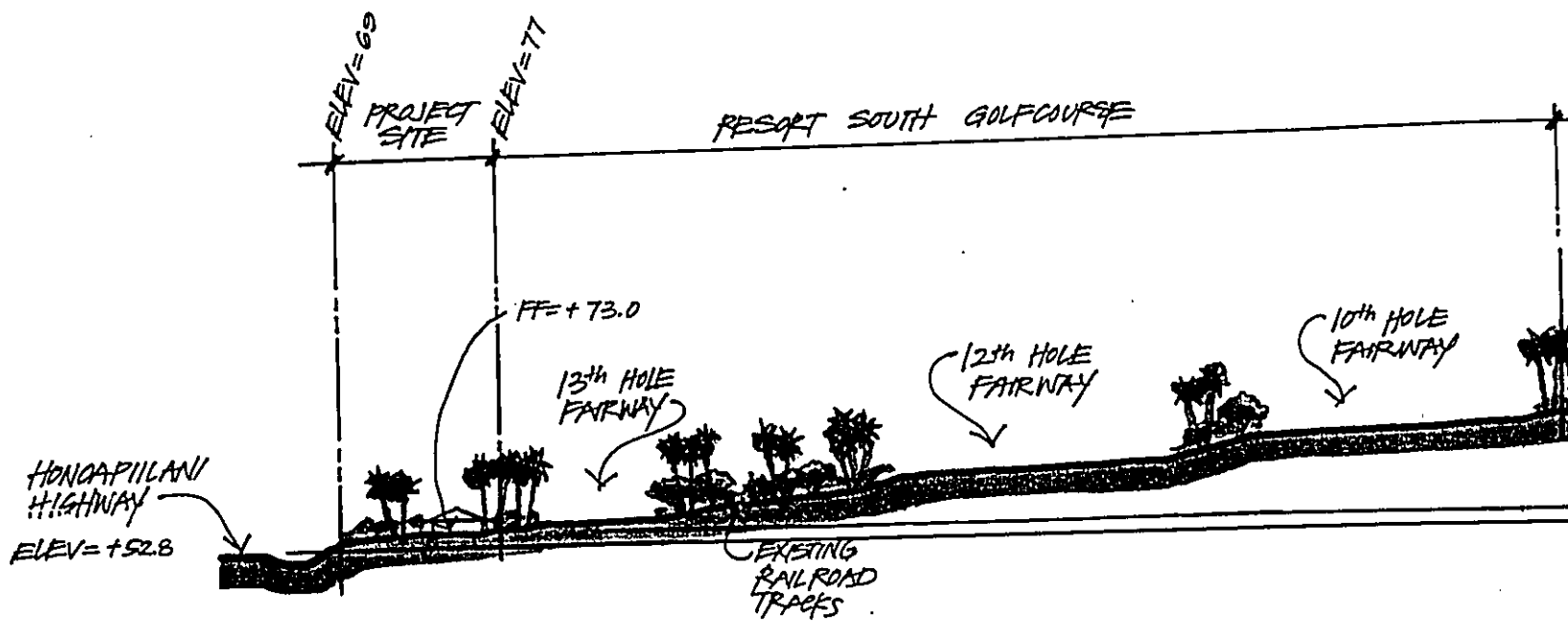
FIGURE 10.6



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2004

Conceptual Site Section 'A-A'

Design Partners Incorporated



Kaanapali Parcel 10-H

February 19, 2004

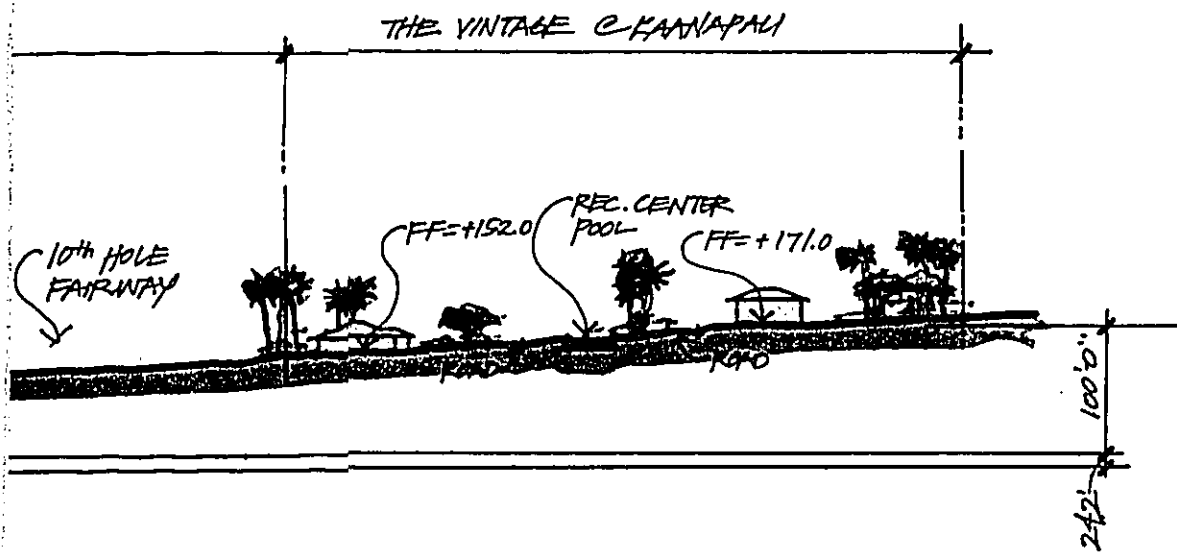


FIGURE 10.7

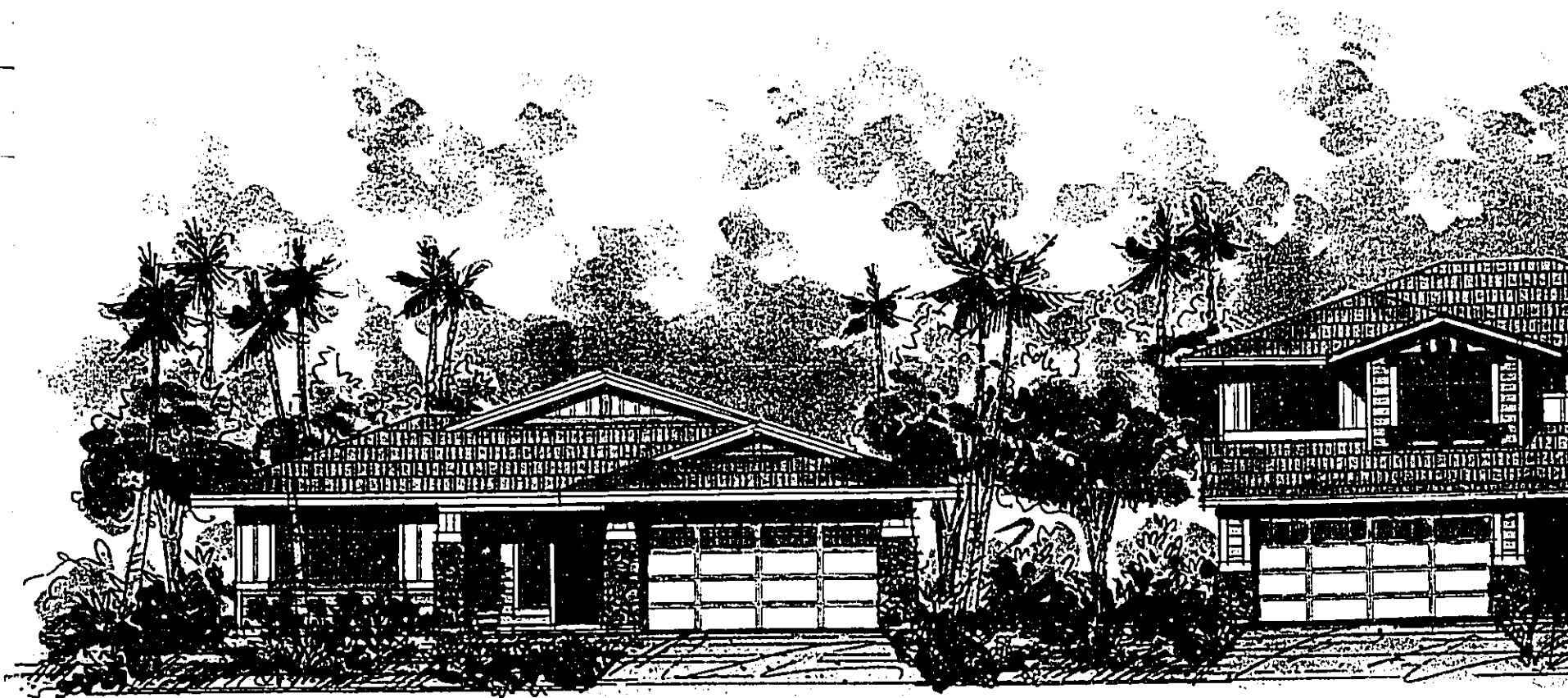


FEBRUARY
2004

H

Conceptual Site Section 'B-B'

Design Partners Incorporated

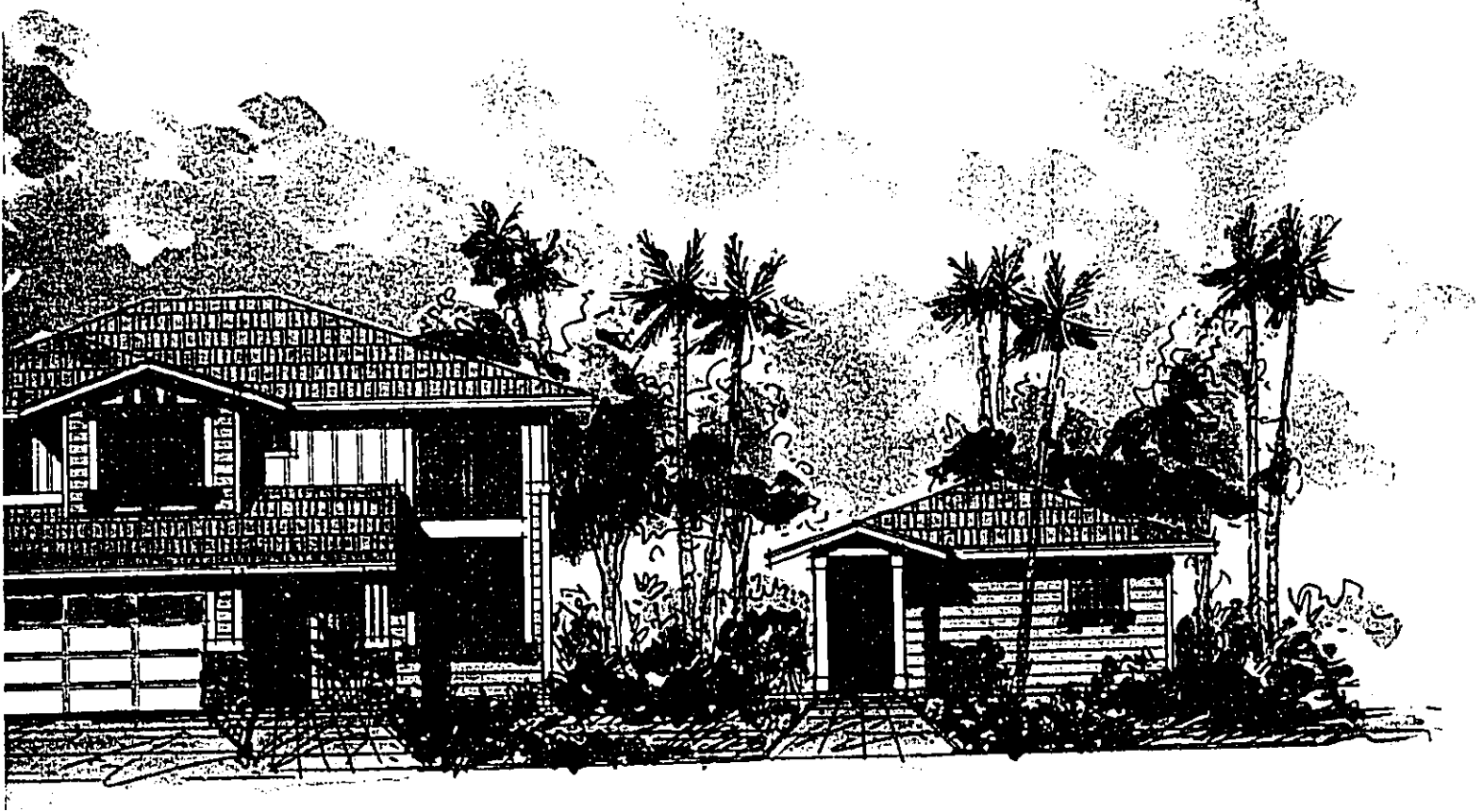


1-Story Model

2-Story Model

Kaanapali Parcel 10-H

February 19, 2004



2-Story Model

Ohana Unit

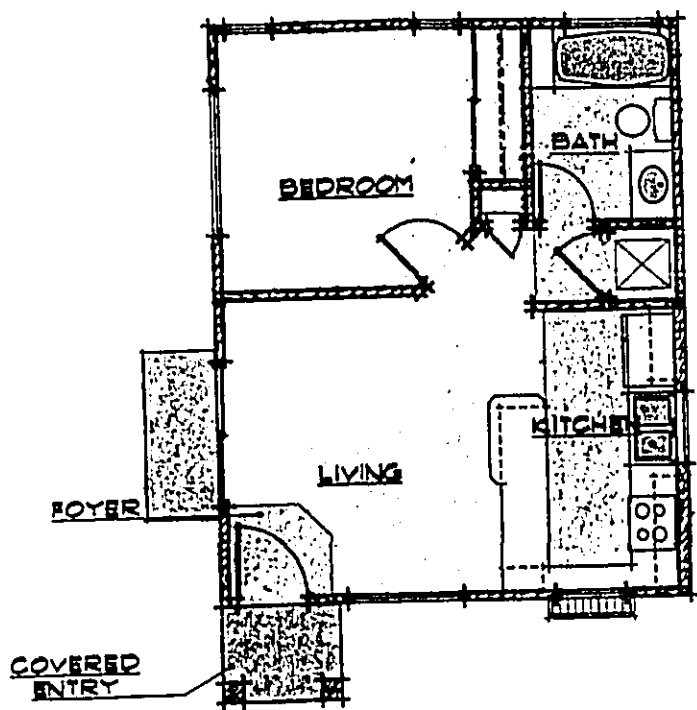
FIGURE 11.1



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2004

1

Conceptual Streetscene
Design Partners Incorporated



Ohana Unit Plan

Area Calculation

Single Story Living Area:

Total Living	1782 SFF
Covered Lanai	289 SF
Garage	467 SF
Covered Entry	47 SF
Net Total Area	2,585 SF

Ohana Unit Area:

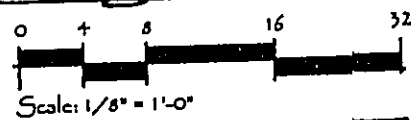
Total Living	480 SF
Covered Entry	20 SF
Net Total Area	500 SF

FIGURE 11.2



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2004

Single Story Plan



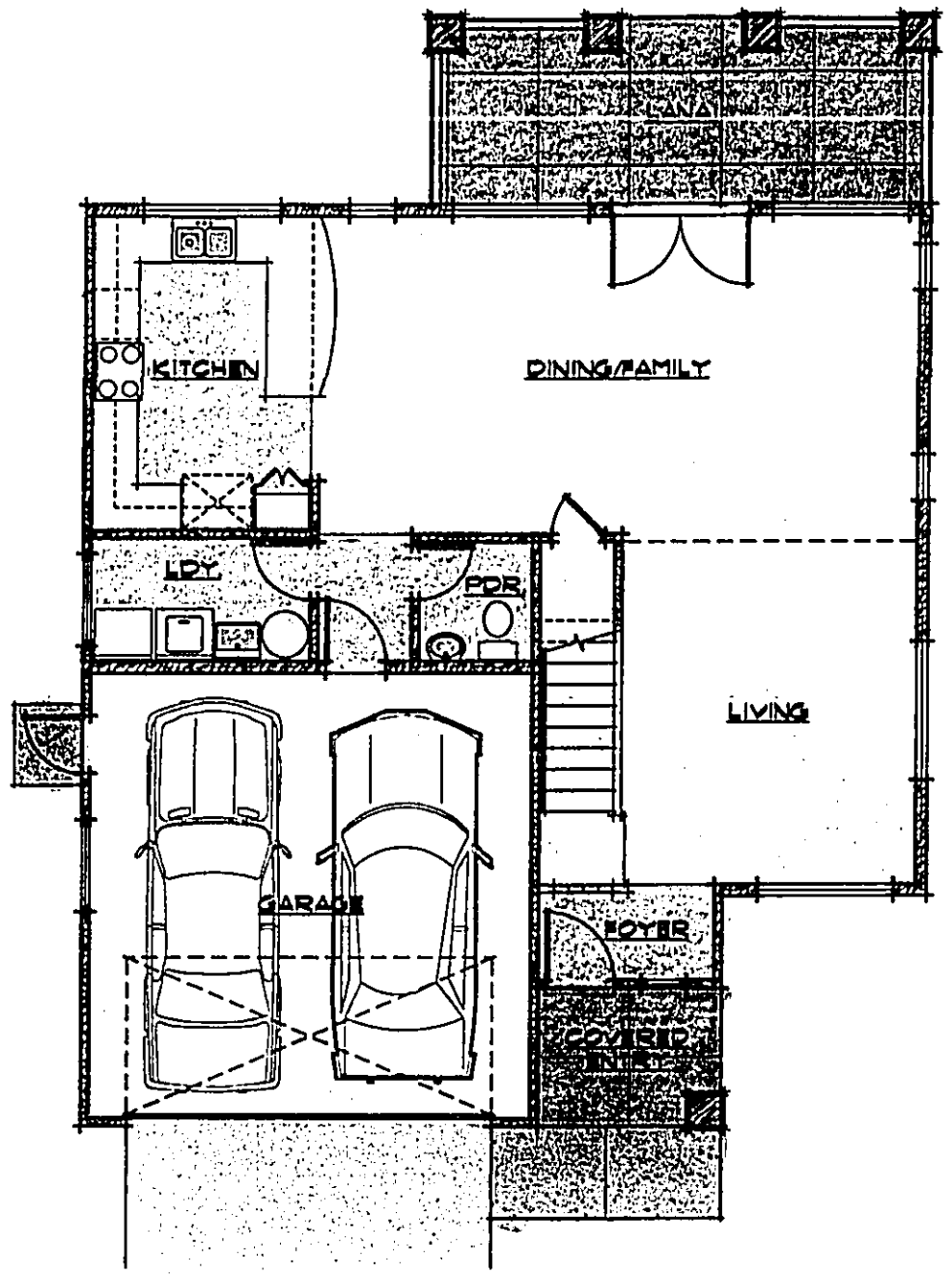
Design Partners Incorporated

Area Calculation

Living Area:

First Floor 953 SF
 Second Floor 903 SF

Covered Lanai (First Floor) 176 SF
 Covered Lanai (Second Floor) 176 SF
 Garage 389 SF
 Covered Entry 48 SF
 Net Total Area 2,645 SF



First Floor

Kaanapali Parcel 10-H

February 19, 2004

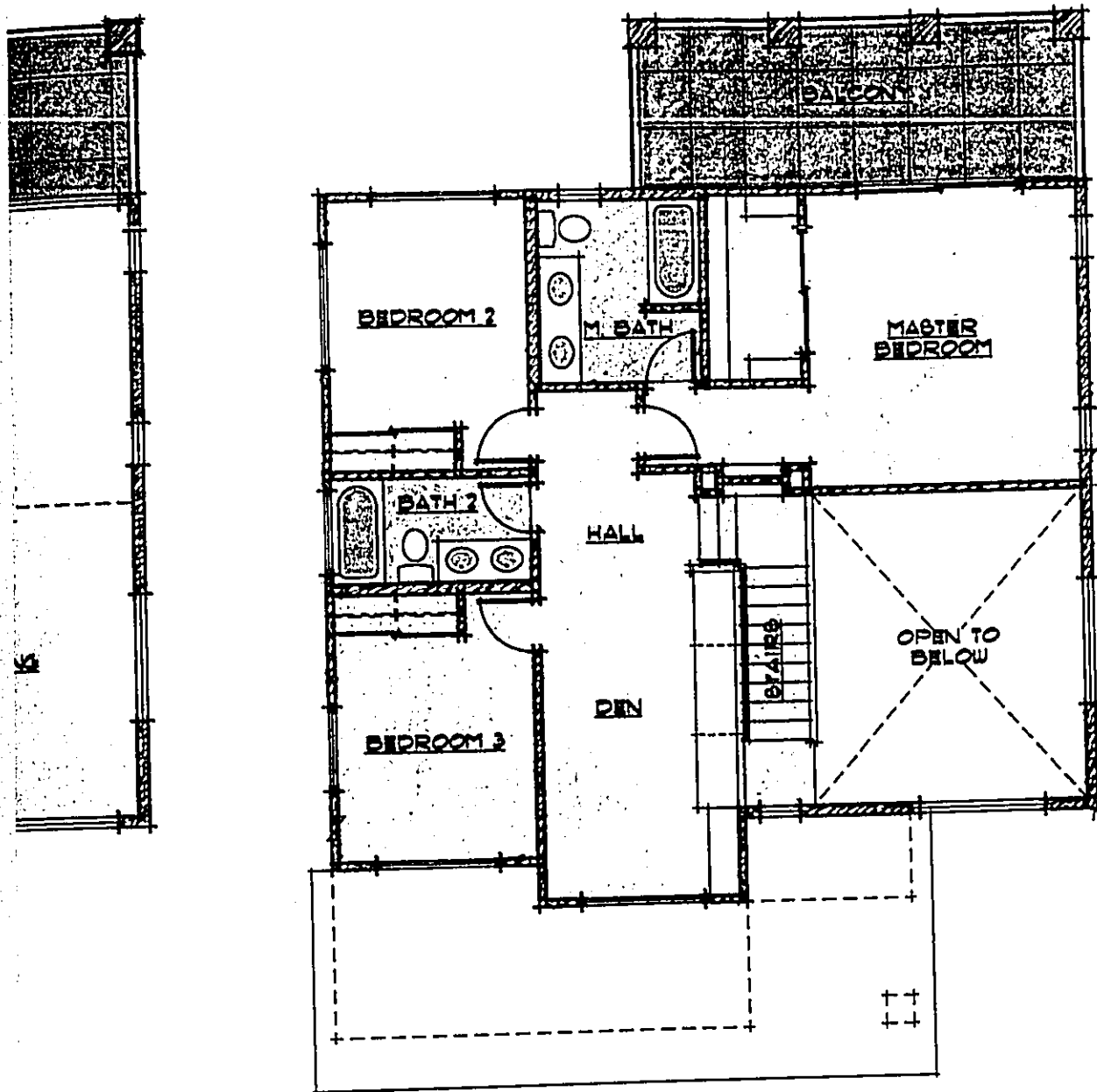


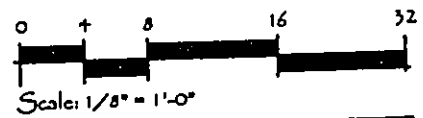
FIGURE 11.3



FEBRUARY
2004

Second Floor

Two Story Plan

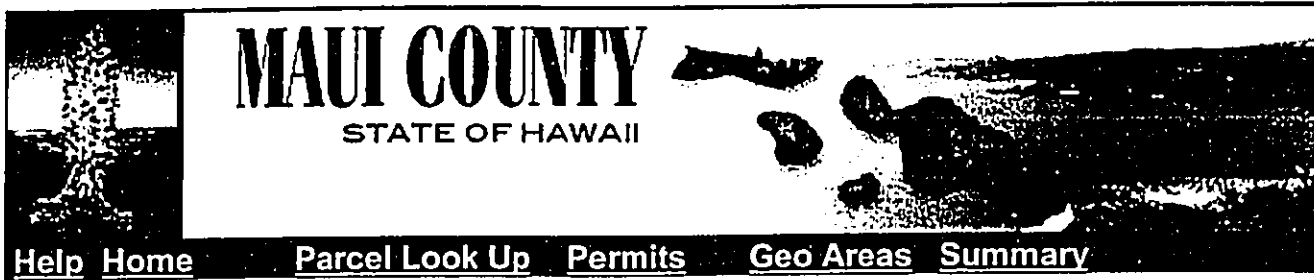


1

Design Partners Incorporated

APPENDICES

APPENDIX A
Ownership Documents



TMK: 2440060560000	Alt. TMK:
Domain:	Type: PAR
Status: EXST	Display Legal Go to GIS Map

Parcel Master Address						
Address	Frac.	Prefix	Street Name	Type	PD	Suite

Other Addresses		
Address	Alias	Origin
0 0000 HONOAPIILANI HWY 3D	MASTER	STRUCTURE
0 HONOAPIILANI HWY 3D	ALIAS	PARCEL
HONOAPIILANI HWY 3D	ALIAS	PARCEL

Tract:	Block:	Lot:
Subdivision:	Section:	Township:
Recorded No.:	Recorded Date:	Range:

Owner(s)
Name: PIONEER MILL CO., LTD Address: KAAPALI DEVELOPMENT CORP 10 HOOHUI RD STE 304/305 LAHAINA, HI, 96761 Phone: E-Mail:

Zone Code	Zone Description	Ordinance No.
STATE URB	STATE URBAN DISTRICT	.000000000
R-3	SINGLE FAMILY RESIDENTIAL MIN 10000 SQFT	.000000000
SMA NONE	NOT IN THE SPECIAL MANAGEMENT AREA	.000000000

Front:	0.00	Rear:	0.00
Side 1:	0.00	Side 2:	0.00
Acres:	7.65	SqFt.:	0.00
Frontage:	0.00		
Flood:	C - AREAS OF MINIMAL FLOODING		
Soil:			
Slope:			
Seismic:			
Parcel Land Use:			

APPENDIX B
Letter of Authorization

PIONEER MILL COMPANY, LTD.
C/O KAA NAPALI DEVELOPMENT CORP.
10 HO'OHUI ROAD, SUITE #305
LAHAINA, MAUI, HI 96761
(808) 669-9650
(808) 669-9658-FAX

September 17, 2003

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

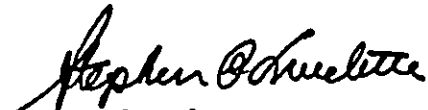
RE: Letter of Authorization: HRS Chapter 343 Environmental Assessment Review and
Community Plan Amendment Application from "Light Industrial" and "Open
Space" to "Single Family" use for a proposed 23-lot single family residential
subdivision at TMK #(2) 4-4-06: 56, Kaanapali, Lahaina, Maui, Hawaii.

Dear Mr. Foley:

On behalf of Pioneer Mill Company, Ltd., this letter authorizes Landtec, Inc. to apply for a HRS
Chapter 343 Environmental Assessment Review and a Community Plan Amendment Application
and to have Chris Hart & Partners, Inc. (CH&P), it's planning consultant, file all necessary
documents on behalf of Landtec, Inc. relative to this proposed project.

Thank you for your cooperation. If additional clarification is needed, please feel free to contact
me.

Respectfully yours,



Stephen Lovelette
Vice President

cc: Bob Johnston, Landtec, Inc.
Chris Hart, CH&P, Inc.

STATE OF HAWAII)
) SS.
COUNTY OF MAUI)

On this 17th day of September, 2003, before me personally appeared Stephen Lovelette, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

Witness my hand and seal.



My Commission Expires: 11/29/04

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APPENDIX C
Zoning and Flood Confirmation

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

ZONING AND FLOOD INFORMATION REQUEST FORM

APPLICANT Landtec, Inc.

PROJECT NAME Kaanapali Parcel 10-H Residences

ADDRESS Honoapiilani Highway

TMK: 4-4-006:056

FOR COUNTY USE ONLY

ZONING INFORMATION

STATE LAND USE URBAN COMMUNITY PLAN L1

COUNTY ZONING R-3

FLOOD INFORMATION

FLOOD HAZARD AREA* ZONE C

BASE FLOOD ELEVATION 0 mean sea level, 1929 National Geodetic Vertical Datum or for Flood Zone A0, FLOOD DEPTH 0 feet.

FLOODWAY [] Yes or [] No

FLOOD DEVELOPMENT PERMIT IS REQUIRED [] Yes or [] No

* For flood hazard area zones B or C; a flood development permit would be required if any work is done in any drainage facility or stream area that would reduce the capacity of the drainage facility, river, or stream, or adversely affect downstream property.


Zoning Administration and Enforcement Division

9/15/03
Date

S:\ZONING\ZONE_CHK\DCCS\FLDZNING.REG 3/00

APPENDIX D
List of Property Owners Within 500 Feet

<p>TMK: 44006010 0000 AMFAC PROPERTY INVESTMENT 10 HOOHUI RD #305 LAHAINA HI 96761</p>	<p>TMK: 44006013 0000 AMFAC PROP INVESTMENT CORP 10 HOOHUI RD #305 LAHAINA HI 96761</p>
<p>TMK: 44006014 0000 AMFAC PROPERTY INVESTMENT 10 HOOHUI RD #305 LAHAINA HI 96761</p>	<p>TMK: 44006028 0000 AMFAC PROPERTY INVESTMENT 10 HOOHUI RD #305 LAHAINA HI 96761</p>
<p>TMK: 44006042 0000 COUNTY OF MAUI <</p>	<p>TMK: 44006057 0000 AMFAC PROPERTY INVESTMENT 10 HOOHUI RD #305 LAHAINA HI 96761</p>
<p>TMK: 44006059 0000 PIONEER MILL CO., LTD KAAPALI DEVELOPMENT CORP 10 HOOHUI RD STE 304/305 LAHAINA HI 96761</p>	<p>TMK: 44006071 0000 PIONEER MILL CO LTD AMFAC PROPERTY INV CORP 10 HOOHUI RD STE #305 LAHAINA HI 96761</p>
<p>TMK: 44008010 0000 AMFAC PROPERTY INVESTMENT 10 HOOHUI RD #305 LAHAINA HI 96761</p>	<p>TMK: 44008018 0000 AMFAC PROPERTY INVEST CORP 10 HOOHUI RD LAHAINA HI 96761</p>
<p>TMK: 44008020 0000 THE GUTMAN REALTY COMPANY 3660 WAIALAE AVENUE #400 HONOLULU HI 96816</p>	<p>TMK: 44008023 0000 OKOA INC CONDO MASTER 0</p>
<p>TMK: 44008023 0001 GRACE, RAYMOND 2706 SPRECKELS LN REDONDO BEACH CA 90278</p>	<p>TMK: 44008023 0002 OKAMOTO, LYNN MASAKO 2560 KEKAA DR #A102 LAHAINA HI 96761</p>
<p>TMK: 44008023 0003 MONAGHAN, DONALD HUGH 2560 KEKAA DR, #A-201 LAHAINA HI 96761</p>	<p>TMK: 44008023 0004 FEDAK, CHARLES ZOLTAN FEDAK, CHARLES Z/MERI L 8061 DEVRIES LN LA PALMA CA 90623</p>
<p>TMK: 44008023 0005 DAIDO KOSAN COMPANY LIMITED ATTN: YOSHIYUKI MORIGUCHI 1-23-101 ESAKA SUITA OSAKA 564-0063 JAPAN</p>	<p>TMK: 44008023 0006 TAYLOR, BOYD TRS 611 METALS BANK BLDG BUTTE MT 59701</p>

Owners of Parcels
Within 500 Feet of
TMK: 4-4-006:056

<p>TMK: 44008023 0007 KARIYA, MASARU C/O ISLANDS + PLUS #402 3830-6 SAKURADA-CHO OMACHI-SHI, NAGANO-KEN 398 JAPAN</p>	<p>TMK: 44008023 0008 KOLONA, DAVID JR 2560 KEKAA DR, #B-101 LAHAINA HI 96761</p>
<p>TMK: 44008023 0009 O'BRIEN, JAMES A/MARGARET TR 2560 KEKAA DR, #B-102 LAHAINA HI 96761</p>	<p>TMK: 44008023 0010 MORAGA-KAANAPALI ASSOC ATTN: GERALD MEYERS 23 KENT CT MORAGA CA 94556</p>
<p>TMK: 44008023 0011 CHARLES, WILLIAM THOMAS 838 E CENTRAL AVE JERSEY SHORE PA 17740</p>	<p>TMK: 44008023 0012 GYSBERS, HARRIET A Q/P/R TR GYSBERS, ROBERT G TRS BOX 226 WAUPUN WI 53963</p>
<p>TMK: 44008023 0013 SWEENEY, JAMES JOSEPH VON HELMS, GRETCHEN 1100 GLORIETTA BLVD CORONADO CA 92118</p>	<p>TMK: 44008023 0014 SAMOULIDES, S/J TRUST C/O STEVE SAMOULIDES 718 SPRING DR WALNUT CREEK CA 94598</p>
<p>TMK: 44008023 0014 STERN, RONALD L ETAL 20 WARMWOOD WY BURLINGAME CA 94010</p>	<p>TMK: 44008023 0015 CORLEY, WILLIAM GORDON 2560 KEKAA DR, #C-101 LAHAINA HI 96761</p>
<p>TMK: 44008023 0016 CHAN, ANTHONY/ELLEN 1388 SUTTER ST #730 SAN FRANCISCO CA 94109</p>	<p>TMK: 44008023 0017 HARRIS FRED J/PAMELA L B 189 WEXFORD RD VALPARAISO IN 46383</p>
<p>TMK: 44008023 0018 PATRUCCO, ROBERT J TRUST PATRUCCO, ROBERT TRS 4200 LONGKNIFE RD RENO NV 89509</p>	<p>TMK: 44008023 0019 ASPHALT PAVING CO 14802 W 44TH AVE GOLDEN CO 80403</p>
<p>TMK: 44008023 0020 DELZER, CHARLES E ETAL 5809 SEASHORE DR NEWPORT BEACH CA 92663</p>	<p>TMK: 44008023 0021 PURE, ROBERT JOEL PURE, ROBERT J/DIANE 2560 KEKAA DR, #C-303 LAHAINA HI 96761</p>
<p>TMK: 44008023 0022 SHIBAMOTO HISATAKE 3-11 MIYANOMORI 4-JO 13-CHOME CHUO-KU SAPPO 064 JAPAN</p>	<p>TMK: 44008023 0023 LEWIS, DAVID/MARGARET TRS LEWIS, DAVID CO-TTEE ETAL 7328 PARKWOODS DR STOCKTON CA 95207</p>

<p>TMK: 44008023 0023 LEWIS,NATALIE J SURVIVOR'S TR LEWIS,NATALIE J TRS 8452 HAMILTON WAY STOCKTON CA 95209</p>	<p>TMK: 44008023 0024 COOK,FAMILY TRUST COOK,ALLEN R/MARJORIE A TRS 6028 HEDGECREST CIR SAN RAMON CA 94583</p>
<p>TMK: 44008023 0025 ESTIN,NORMAN M TR 200 NOHEA KAI,STE 100 LAHAINA HI 96761</p>	<p>TMK: 44008023 0026 JONES,DONALD S JONES,DONALD S/KATHLEEN A 1110 CHATEAU CT LODI CA 95242</p>
<p>TMK: 44008023 0027 NELSEN-CUDEIRO,JEFFREY CHARLES NELSEN-CUDEIRO,JEFFREY C ETAL 82 POKANOKET LN MARSHFIELD MA 2050</p>	<p>TMK: 44008023 0028 TOPPANO, ANGELO S/JUNE A 7429 SOUTH 128TH STREET SEATTLE WA 98178</p>
<p>TMK: 44008023 0029 KERR,JAMES/SHELLEY FAMILY TR 2560 KEKAA DR,#E-101 LAHAINA HI 96761</p>	<p>TMK: 44008023 0030 TOHKAI ZISHO INC MAUI RESORT MANAGEMENT 3600-C L HONOAPIILANI RD LAHAINA HI 96761</p>
<p>TMK: 44008023 0031 HYMAN,HAROLD AARON HYMAN,HAROLD AVIVIAN R 2846 WILLAMETTE ST EUGENE OR 97405</p>	<p>TMK: 44008023 0032 VAHRENKAMP, JURGEN P O BOX 12063 LAHAINA HI 96761</p>
<p>TMK: 44008023 0033 RICCITELLI,A.T./MARIE 69764 CAMINO PACIFICO RANCHO MIRAGE CA 92270</p>	<p>TMK: 44008023 0034 BARNESON,JOHN L JR/VICKILEE 4971 LAKERIDGE TERRACE W RENO NV 89509</p>
<p>TMK: 44008023 0035 KUBOTA,KOZO KIMIKO SEKINE P O BOX 2026 KIHEI HI 96753</p>	<p>TMK: 44008023 0036 BAGLEY,LAWRENCE MILES 1315 CRESTRIDGE DRIVE OCEANSIDE CA 92054</p>
<p>TMK: 44008023 0036 KARLIN,JOEL M KARLIN,JOEL M/CAROLINE M 4905 S ELIZABETH CIR ENGLEWOOD CO 80110</p>	<p>TMK: 44008023 0037 TERREBONNE, ROBERT A/NANCY 225 SURFBIRD ISLE SAN MATEO CA 94404</p>
<p>TMK: 44008023 0038 AMON SOLOMON ETAL 6729-82ND S E MERCER ISLAND WA 98040</p>	<p>TMK: 44008023 0039 DELANY,JUNE JACQUELINE TR P O BOX 11856 LAHAINA HI 96761</p>

Owners of Parcels
Within 500 Feet of
TMK: 4-4-006:056

<p>TMK: 44008023 0040 DAIDO KOSAN COMPANY LIMITED ATTN: YOSHIYUKI MORIGUCHI 1-23-101 ESAKA SUITA OSAKA 564-0063 JAPAN</p>	<p>TMK: 44008023 0041 VIGLIONE, DAVID LAWRENCE 2560 KEKAA DR, #F-302 LAHAINA HI 96761</p>
<p>TMK: 44008023 0042 GILLOGLY, JAMES GILLOGLY, JAMES/MARRIETTA 10933 WELLWORTH AVE, #5 LOS ANGELES CA 90024</p>	<p>TMK: 44008023 0043 MILLAN, GEORGE B 645 REDONDO AVE, #302 LONG BEACH CA 90814</p>
<p>TMK: 44008023 0044 MOODY, ROBERT C/JOYCE P TRUST SHERWOOD, GREGG E/CAROLE E 11504 KEY WEST N E ALBUQUERQUE NM 87111</p>	<p>TMK: 44008023 0045 RIST, MARGARET R 2530 KENILWORTH AVE WILMETTE IL 60091</p>
<p>TMK: 44008023 0046 HAPPY JACK N ETAL 4500 ROCKHILL TERRACE KANSAS CITY MO 64110</p>	<p>TMK: 44008023 0047 CAPITOL RESOURCE FUNDING 510 KING ST STE #501 ALEXANDRIA VA 22314</p>
<p>TMK: 44008023 0048 VISHANOFF, THOMAS HOWE 2560 KEKAA DR, #G-302 LAHAINA HI 96761</p>	<p>TMK: 44008023 0049 BECKER, HANS-JUERGEN GERHARD 11010 SANTA CLARA DR FAIRFAX VA 22030</p>
<p>TMK: 44008023 0050 COLLEY, GORDON TOWNSEND M/M ALEXANDER KLAIB 1000 BRIGITTE'S PL RESCUE CA 95672</p>	<p>TMK: 44008023 0051 ARMSTRONG, LUTHER KRISTIAN JACKSON, LARRY D ET AL 8084 BEACON LN NORTHVILLE MI 48167</p>
<p>TMK: 44008023 0052 MIKLETHUN, RENEE JANELL 2560 KEKAA DR #H201 LAHAINA HI 96761</p>	<p>TMK: 44008023 0053 STATE & "A" PROPERTIES C/O MR. KENNETH GREEMAN, JR. P O BOX 299 OCEANSIDE CA 92049</p>
<p>TMK: 44008023 0054 GREENE, FAMILY 1988 TRUST 19321 WILDFLOWER DR PENN VALLEY CA 95946</p>	<p>TMK: 44008023 0055 MAPES, FAMILY TRUST-1997 MAPES, WILLIAM F/LESLIE C TRS 6860 CALLE TENIA CAMARILLO CA 93612</p>
<p>TMK: 44008023 0056 OLSSON, SCOTT EDWARD ETAL 14 WOODSIDE DR DANVILLE CA 94506</p>	<p>TMK: 44008023 0057 GALLAGHER, JUNE JOY P O BOX 1045 PENNGROVE CA 94951</p>

Owners of Parcels
Within 500 Feet of
TMK: 4-4-006:056

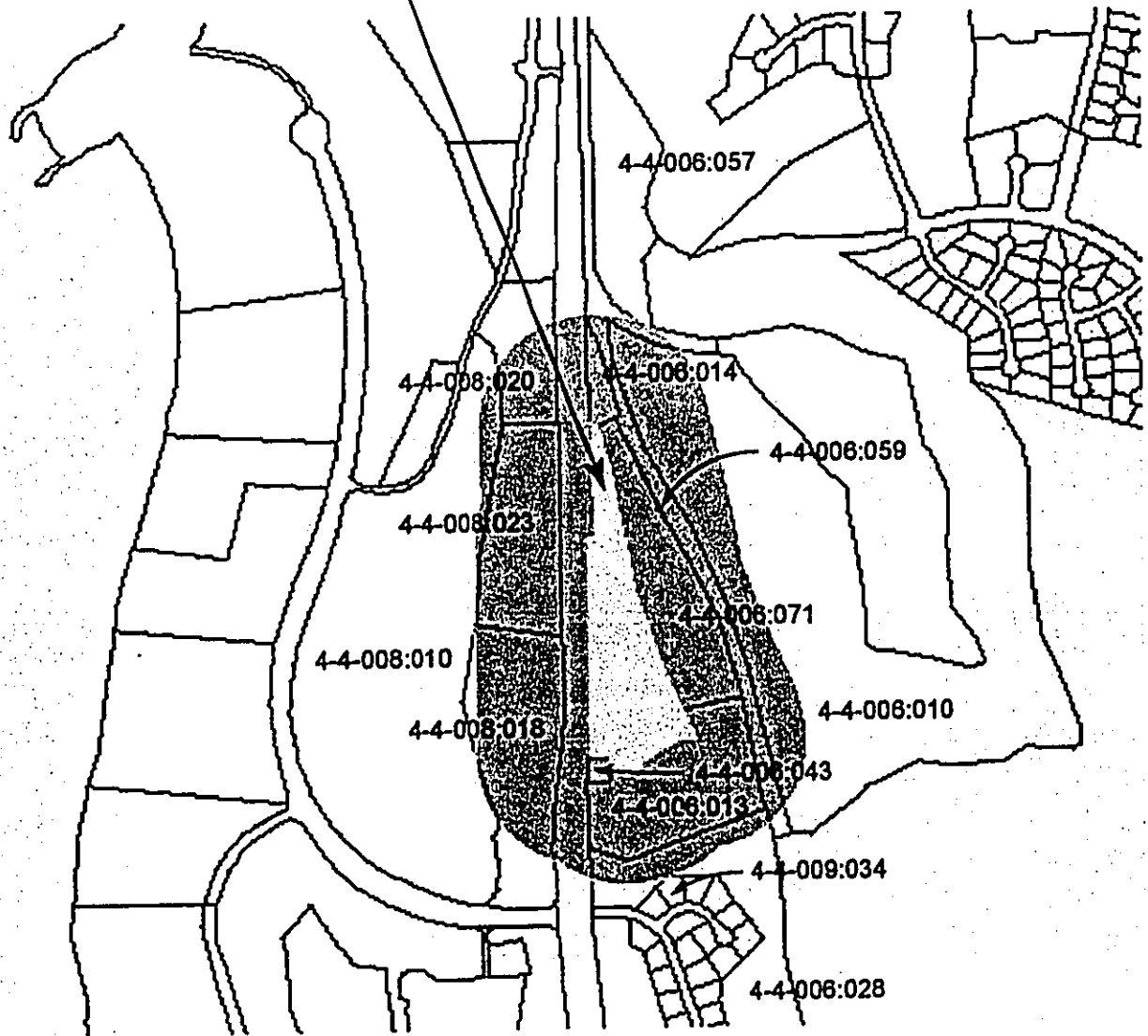
<p>TMK: 44008023 0058 BECKER,KIMBERLY SUE 2560 KEKAA DR #J102 LAHAINA HI 96761</p>	<p>TMK: 44008023 0059 CURRIER,RANDOLPH GOODWIN 1722 MONTANE DR E GOLDEN CO 80401</p>
<p>TMK: 44008023 0060 KNAACK,GERALDINE I TRUSTEE 110 BRIARGATE RD CARY IL 60013</p>	<p>TMK: 44008023 0061 BAINBRIDGE,TRUST VANCE W GRIBBLE TTEE 21620 S E 28 ST SAMMAMISH WA 98075</p>
<p>TMK: 44008023 0062 JASS,MICHAEL BRADLEY JASS,MICHAEL B/ANN M 2560 KEKAA DR,#J-302 LAHAINA HI 96761</p>	<p>TMK: 44008023 0063 HERMAN,ROBERT MARTIN HERMAN,ROBERT M/KAYE A 2560 KEKAA DR,#J-303 LAHAINA HI 96761</p>
<p>TMK: 44008023 0064 TAYLOR, BOYD TRUSTEE 611 METAL BANK BLDG BUTTE MT 59701</p>	<p>TMK: 44008023 0065 CONKLIN,RODNEY/DEBORAH TR CONKLIN,RODNEY/DEBORAH TRS ETAL 245 HILLSDALE WAY REDWOOD CITY CA 94062</p>
<p>TMK: 44008023 0066 MCSWEENEY,TRUST MCSWEENEY,WILLIAM V TRS ETAL 2560 KEKAA DR K-201 LAHAINA HI 96761</p>	<p>TMK: 44008023 0067 GOLDFLAM SHELDON L ETAL 718 N WALDEN DR BEVERLY HILLS CA 90210</p>
<p>TMK: 44008023 0068 616716 ALBERTA LTD BOX 1478-513 BANFF ALBERTA,TOLOCO CANADA</p>	<p>TMK: 44008023 0069 KRELL,FAMILY LIVING TRUST 599 PROSPECT BLVD PASADENA CA 91103</p>
<p>TMK: 44008023 0070 DUCKWORTH,DOUGLAS ROBERT DUCKWORTH,DOUGLAS/PRISCILLA 15833 FETLOCK LN CHINO HILLS CA 91709</p>	<p>TMK: 44008023 0071 PROKUSKI,LEON MARTIN PROKUSKI,LEON M/ELNORA 2560 KEKAA DR,#L-101 LAHAINA HI 96761</p>
<p>TMK: 44008023 0072 ANDERSON,PEPPER P.O. BOX 143 LAHAINA HI 96767</p>	<p>TMK: 44008023 0073 CARLSON,FAMILY TRUST 932 SKYLINE PL WENATCHEE WA 98801</p>
<p>TMK: 44008023 0074 THORP,DONALD KEVIN 4773 TRENTON COURT LONG GROVE IL 60047</p>	<p>TMK: 44008023 0075 ONISHI,FUMITAKA 1230 N HORN AVE 620 WEST HOLLYWOOD CA 90069</p>

<p>TMK: 44008023 0076 MADDIGAN,ARTHUR G II TR MADDIGAN,ARTHUR G II TRS 436 CRATER RD KULA HI 96790</p>	<p>TMK: 44008023 0077 LONDYNSKY,PAUL A LONDYNSKY,PAUL A/BETHANN K 30 SHAWN CT ALAMO CA 94507</p>
<p>TMK: 44008023 0078 BURGEMEISTER WILLIAM/PAT 9401 WORDSWORTH WAY APT 205 OWINGS MILLS MD 21117</p>	<p>TMK: 44008023 0079 WADDELL WALLACE R/FRANCIS C 2560 KEKAA DR M102 LAHAINA HI 96761</p>
<p>TMK: 44008023 0080 LOERS LLOYD D TRUSTEE 1709 SO SHORE DRIVE CLEAR LAKE IA 50428</p>	<p>TMK: 44008023 0081 CHAN,ANTHONY YIU WING CHAN,ANTHONY Y W/ELLEN D 1388 SUTTER ST #730 SAN FRANCISCO CA 94109</p>
<p>TMK: 44008023 0082 EBERT,MICHAEL LAVRENCE 4-26-1-709 KAMISHINDEN TOYONAKO-SHI,OSAKA JAPAN</p>	<p>TMK: 44008023 0083 NATIONAL DOLLAR STORES LTD 929 MARKET ST SAN FRANCISCO CA 94101</p>
<p>TMK: 44008023 0084 MOREHOUSE,JAMES E TRUST 680 DUNBARTON BARRINGTON IL 60010</p>	<p>TMK: 44008023 0085 LAMBERT,WILLIAM DAVID 24 LIVE OAK WY DANVILLE CA 94506</p>
<p>TMK: 44008023 0086 HESS,CONSTANCE M TR P O BOX 905 MC PHERSON KS 67460</p>	<p>TMK: 44008023 0087 MOSKOWITZ,FAMILY TRUST MOSKOWITZ, ALAN/HELENE 3918 ARCH DALE RD ENCINO CA 91436</p>
<p>TMK: 44008023 0088 GRAYBILL,JAMES LLOYD 2560 KEKAA DR #N202 LAHAINA HI 96761</p>	<p>TMK: 44008023 0089 O T B TIME HOLDINGS INC C/O BUTLER & COMPANY 923 WEST 8TH AVE VANCOUVER BC V5Z 1E4 CANADA</p>
<p>TMK: 44008023 0090 MATTSON DALE W 2560 KEKAA DR N302 LAHAINA HI 96761</p>	<p>TMK: 44008023 0091 FLINT,WILLIAM D/ANN C TR 187 RIVIERA DR SAN RAFAEL CA 94901</p>
<p>TMK: 44008023 0092 MARTIN PETER K ETAL 590 A OLD STABLE RD PAIA HI 96779</p>	<p>TMK: 44008023 0093 APPEGATE,HARVEY JON APPEGATE,HARVEY J/CORNELIA L 2560 KEKAA DR,#P-102 LAHAINA HI 96761</p>

Owners of Parcels
 Within 500 Feet of
 TMK: 4-4-006:056

TMK: 44008023 0094 MCKENZIE, E W/GENEVIEVE P O BOX 1209 RENO NV 89504	TMK: 44008023 0095 TRUJILLO,WILLIAM PATRICK TRUJILLO,WILLIAM P ETAL 3078 MIDDLETON ST OAKLAND CA 94605
TMK: 44008023 0096 BOUNDS,SHARON LAVER C/O HELEN BOUNDS P.O. BOX 1547 TORRANCE CA 90505	TMK: 44008023 0097 ISLAND INVESTMENTS LTD TR 1059 ALAMEDA, #113 BELMONT CA 94002
TMK: 44008023 0098 WISNIEWSKI, KENNETH J SR/L F 40424 N DEEP LAKE RD ANTIOCH IL 60002	TMK: 44008023 0099 SARIBAY,VICTOR SUNIO 2560 KEKAA DR,#Q-101 LAHAINA HI 96761
TMK: 44008023 0100 LUM, LEANN K ETAL 888 WAINEE ST #116 LAHAINA HI 96761	TMK: 44008023 0101 YANG,PAUL PO-TSANG 10008 RALEIGH ST WESTMINSTER CO 80031
TMK: 44008023 0102 BROWN,WILLIAM FREDERICK P O BOX 11539 LAHAINA HI 96761	TMK: 44008023 0103 O'BRIEN,JANET LEE P O BOX 481 HOLLISTER CA 95024
TMK: 44008023 0104 SMITH,MICHAEL ALLAN 301 SHIROGANA II 3-39-7-301 EBISU SHIBUYA-KU, TOKYO 150-0013 JAPAN	TMK: 44008023 0105 VALLEJO,DEBORAH ROSE VALLEJO,DEBORAH R ETAL 6669 EMBARCADARO DR,#20 STOCKTON CA 95219
TMK: 44009034 0000 ARAKAWA,BRIAN KEITH ARAKAWA,BRIAN K/MARGARET M 11 HOLOMAKANI PL LAHAINA HI 96761	

Project Site



Parcels Within 500 Feet of
TMK: 4-4-006:056



APPENDIX E
Pre-Consultation Letter

LANDTEC, INC.

2530 Kekaa Drive, Suite C-1
Kaanapali, Maui, Hawaii 96761
Phone: (808) 661-3232
Facsimile: (808) 661-1921

September 26, 2003

Dear Vintage Homeowner/Kaanapali Neighbor:

Re: Proposed 23-lot residential subdivision on a 7.65 acre site, TMK (2) 4-4-006: 056,
at Kaanapali, Lahaina, Maui, Hawaii.

Landtec, Inc., in partnership with Kaanapali Development Corporation, would like to take this opportunity to invite you to an informational meeting regarding our proposed 23-lot residential subdivision on a 7.65 acre parcel in Kaanapali.

The current property zoning is R-3 Residential District (10,000 square foot minimum lot size), and the current West Maui Community Plan designation for the parcel is "Light Industrial" use. The County of Maui requires that the zoning and the Community Plan designations shall be consistent. Therefore, an amendment to the West Maui Community Plan is required. Landtec, Inc. is in the process of submitting an application to amend the current West Maui Community Plan to change the designation to "Single Family" residential use. The County process will involve a review by the Maui Planning Commission and final approval by the Maui County Council.

Our informational meeting is scheduled for October ____, 2003 at 5:00 p.m. Landtec's office, located at 2530 Kekaa Drive, Suite C-1. Please RSVP by October 16, 2003 to Ms. Darlene Kim or Ms. Charmaine Molina at the office of our planning consultant, Chris Hart & Partners at (808) 242-1955.

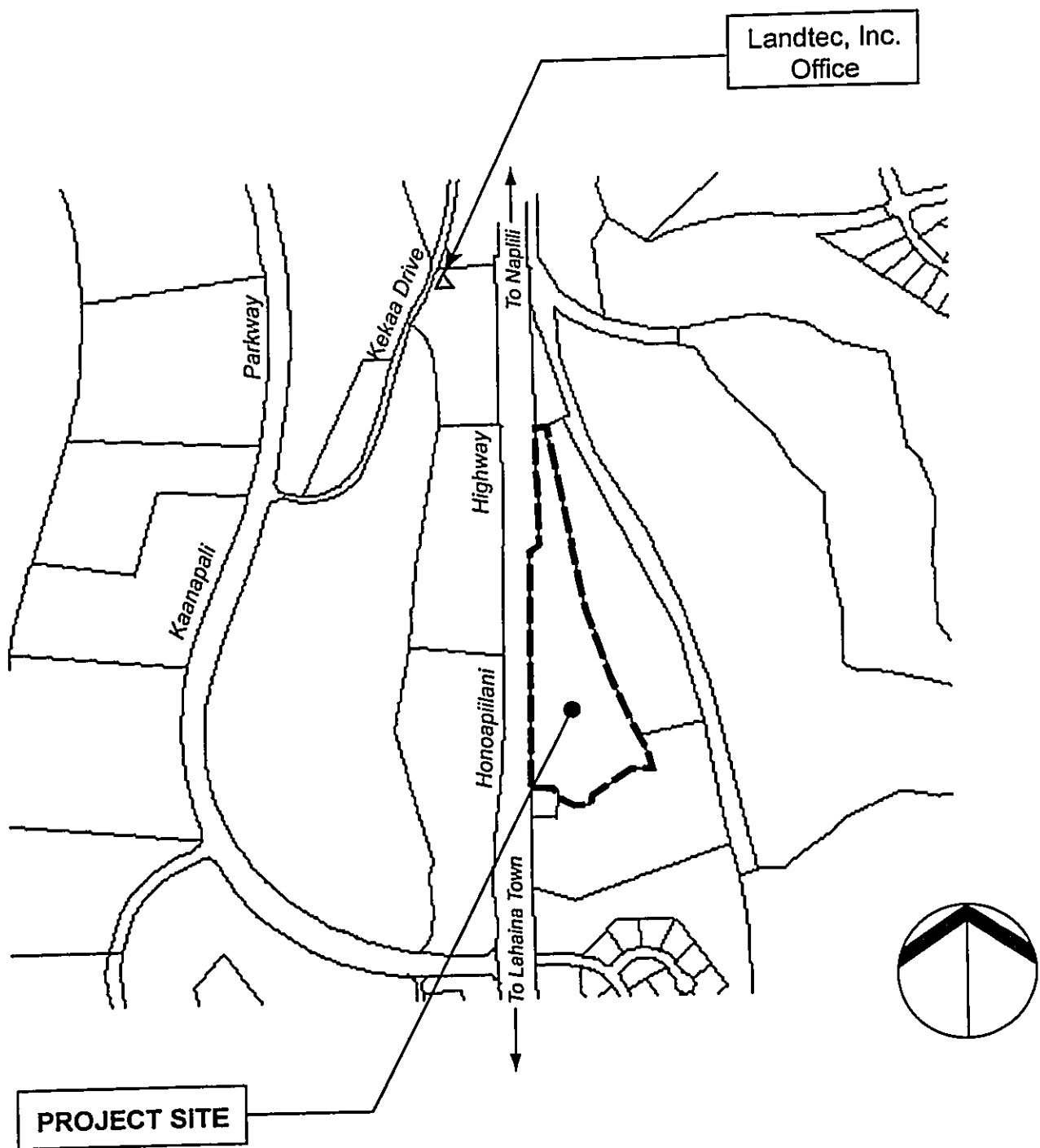
Enclosed for your reference is a location map of the project site and our office location. I look forward to seeing you at the meeting.

Sincerely,

Howard S. Kihune, Sr.
President

Encl.

Cc: Chris Hart, Planning Consultant



LOCATION MAP
 Tax Map Key: 4-4-006:056
 & Landtec, Inc. Office

KAANAPALI PARCEL 10-H RESIDENCES



APPENDIX F
Environmental Site Assessment: Phase I Investigation



Consultants, Inc.

Environmental Site Assessment: Phase I Investigation



Property: KAA NAPALI DEVELOPMENT CORPORATION
Kaanapali, Hawaii 96761
T.M.K. (2) 4-4-06:56

Prepared for: LANDTECH, INC.
2430 Kekaa Drive, Suite C-1
Kaanapali, Hawaii 96761
Attn: Mr. Bob Johnston

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared by the investigator under direct supervision and provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances.

Robert Davis, Site Investigator

- > B. S. Environmental and Hazardous Materials Management

7/28/03
Date

Jeffrey E. Kermode, Principal Investigator

- > B.A. (Geography), B.Tech. (Environmental Engineering)
- > Lead-Based Paint Inspector (EPA Accredited Course)
EPA Certification No. HI-03-0920045008
- > Asbestos Building Inspector (AHERA Accredited Course)
State of Hawaii Certification No. HIASB-0351

7/28/03
Date

John S. Vuich, M.S., Project Supervisor

- > Registered Environmental Assessor
Registration No. 1433 (State of California)

7/28/03
Date

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Disclosure

This document contains the results of services performed on this Project by **Vuich Environmental Consultants, Inc. (VEC)** pursuant to Agreement. The results represent the application of a variety of scientific and analytical disciplines which have been rendered using the standard of care, skill, and diligence normally provided by professionals in the performance of similar services under similar circumstances.

VEC assessments are intended to reduce, but not eliminate, uncertainty regarding recognized environmental conditions in connection with the Subject Site, as conducted within reasonable limits of time and cost. A general consensus of EPA's guidance on landowner liability is that *no environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property.*

The use of this document and the results reported are limited to the services performed and areas examined as described in this document and no inferences are intended with respect to anything not described herein.

VEC is not responsible for conditions or consequences arising from relevant data, facts, and information that were concealed, missing, withheld, not fully disclosed, or not reasonably available at the time these services were performed. VEC is not responsible for any indirect, incidental, or consequential damages of any nature arising from any cause.

VEC has no beneficial economic interest in the Project other than as an independent professional organization performing the agreed services. VEC's warranties are as described above and there are no other warranties of any kind, expressed or implied, regarding the services.

Executive Summary

Introduction

This Phase I Environmental Site Assessment (ESA) has been prepared for Mr. G. Robert Johnston of Landtec, Incorporated and was conducted pursuant to Vuich Environmental Consultants, Inc.'s (VEC's) written proposal and contract accepted by Mr. G. Robert Johnston on June 23, 2003. This investigation and report format follows the guidelines of the American Society of Testing and Materials (ASTM) Publication E1527-00.

Site Description

The subject site is located northeast of the intersection of Honoapiilani Highway and Kaanapali Parkway in Kaanapali, Maui, Hawaii. The property consists of one (1) parcel of land, irregular in shape, measuring approximately 7.65 acres in total area. The site is further described on the Tax Maps of the State of Hawaii as Division 2, Zone 4, Section 4, Plat 06, Parcel 56. (See Figure 1, Appendix A and Tax Map, Appendix B). Property access is from an access road from the northeastern or southern boundaries of the subject property.

Kaanapali is a resort town located on the western shores of the West Maui Mountains. It lies approximately four (4) miles north of the historic town of Lahaina.

The property consists predominately of vegetated land (grasses and small shrubs). Mature trees stands are situated along portions of the eastern and western property boundaries. An easement used for storm water management traverses through the property from the northwestern corner along the western boundary extending through the middle of the property until it reaches the southeastern boundary. The southern and western property boundaries have steep grades. High voltage transmission lines are located over the western boundary of the subject property. A single-lane paved road provides access through the property from the southern boundary to the northeast corner of the property. (See Figure 2, Appendix A).

One (1) plant nursery is located on-site and is leased by the Maui Marriott. One (1) vacant residence/sign painter's workshop is located near the central eastern boundary of the property. One (1) gravity well, one (1) water pump house, four (4) storage containers, one (1) storage shed, and one (1) distribution step-down substation are located near the southern boundary of the subject property. The subject property has been the site of historic dumping of landscaping and miscellaneous debris and household refuse. Evidence of several grading and grubbing activities are located throughout the parcel.

The Kaanapali Golf Course Maintenance Baseyard makes up the northern adjacent property and part of the golf course bounds the subject site to the east. The Hawaii Water Service Company and the Lahaina Sewer Pumping Station #2 (SPS) comprise the southern adjacent property. The Honoapiilani Highway is situated to the west, beyond which is the Kaanapali Royal Hotel and part of the Kaanapali Golf Course. (See Figure 2, Appendix A).

Records Review

The purpose of a records review is to obtain and review records that will help identify *recognized environmental conditions* in connection with the subject property. The services of Environmental Data Resources, Inc., were utilized to compile the database listings.

Our records review did not discover any current investigation of the subject site under any programs conducted by a federal, state, or local environmental agency.

The neighboring properties listed within the designated radial radius distances have no perceived impact to the subject property due to their current status, distance and/or geographic position in relation to the subject property. (See Appendix B for EDR Report).

Site Reconnaissance

A site investigation focuses on obtaining information indicating the likelihood of identifying physical *recognized environmental conditions* in connection with the property and assessing the subject property in relation to surrounding land uses and natural surface features. It includes a physical inspection of the real property and any on-site facilities.

On July 16, 2003, VEC personnel, Mr. Jeffrey Kermode and Mr. Robert Davis, conducted an overall site inspection of the subject site. Accessible areas of the property were visually and physically inspected. Approximately 25% percent of the subject site's total surface soils were not observable due to the subject site's building structures, storage containers, paved road, drainage infrastructure, landscaping debris, miscellaneous debris, and limited areas of dense vegetation.

The following are significant observations of field conditions: (See Site Plan, Figure 2)

- Historic landscape debris dumping has occurred on this site for decades;
- Limited construction debris dumping consisting of boulders, soil, metal, plastics, asphalt, and concrete were noted;
- A limited amount of miscellaneous debris, including some regulated materials, were noted;
- A rubbish dump measuring 18 feet x 26 feet was noted. The waste materials mainly consisted of household refuse. Limited regulated materials were also noted;
- Areas of former excavation activity were noted. VEC was informed these areas were excavated by Scientific Consultant Services Inc. (SCS) while conducting an archaeological inventory survey;
- A distribution step-down substation is located near the southern boundary of the subject site. Transformers in the substation may contain PCBs;
- Three (3) 5-gallon containers containing a petroleum-based liquid with characteristics of waste oil were noted;
- Several 55-gallon drums and 5-gallon containers containing petroleum-based products were noted at various locations on or immediately adjacent to the subject site;
- One (1) 55-gallon drum containing a residue of a petroleum-based liquid with characteristics of waste oil was noted. The contents of the drum had impacted the underlying surface soils;
- The residential structure/sign painter's workshop contained moderate quantities of household-sized containers of petroleum-based liquids, solvents and paints;
- In the interior of the water pump house building, two (2) 5-gallon containers were identified that most likely contain a petroleum-based substance used for the turbine. Two (2) possible back up generators that may contain petroleum-based liquids;
- A golf course is located immediately upgradient of the subject site;
- Pesticide and fertilizer storage and usage takes place in the nursery located on site;
- A former sewer treatment plant is located on the adjacent property;
- A sewer pump station with an above-ground diesel tank is located in the southwestern corner of the subject site;
- Improper drum management and related soil staining was noted on the southern adjacent property;
- Golf course maintenance yard and drum storage area was noted on the northern adjacent property.

Conclusions

Recognized environmental conditions, as defined by ASTM Standard E1527-00, are the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. *Recognized environmental conditions* are described with regard to (1) the nature and extent of the environmental condition, (2) potential or actual environmental threat, (3) potential for transport (migration) of

any environmental conditions, and (4) consideration for further investigation. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

VEC has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Practice E 1527-00 for *the subject property located northeast of the intersection of Honoapiilani Highway and Kaanapali Parkway in Kaanapali, Maui, HI, 96761 [TMK Map No. (2)-4-4-06:056]*. Any exceptions to or deletions from, this practice are described in Section 1.4, Limitations and Exceptions, of this report. **This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:**

- ***Database Listings (See Section 4.0 & EDR Report, Appendix B).***

The subject site is not listed.

The listed nearby sites were reviewed for environmental concerns relative to the subject site. It is unlikely these sites have had a significant environmental impact on the subject property, nor is there any expected impact therefrom.

- ***Current and Historic Use or Storage of Hazardous and Regulated Substances (See Section 5.3.1, 5.3.2 & 5.3.3).***

There is no evidence of any historic misuse or significant spills of hazardous or regulated substances on the subject property.

Sugarcane agriculture had been previously active on the subject property and adjacent properties for several decades. The subject property has a plant nursery operating near the eastern boundary and the eastern adjacent property is part of the Kaanapali Golf Course. Both pesticide and fertilizer use are related to the above noted activities.

While the use of pesticides and fertilizers on a property does not necessarily result in an adverse impact to the environmental condition of the subject site, it is possible (yet unlikely) for residual amounts of these substances to accumulate to concentrations that present a potential threat to human health or the environment. Soil and groundwater sampling and laboratory testing would provide additional information to evaluate potential environmental effects from these historic agricultural activities. There is, however, no regulatory requirement to conduct this sampling.

Limited containers of unidentified petroleum-based substances were identified during the site reconnaissance. All containers should be properly managed to avoid potential releases on to surface soils. Petroleum-impacted soil should be excavated and properly managed (disposed of). Clearance soil testing could be conducted to ensure all contamination has been removed.

The concerns listed below may not be considered recognized environmental conditions by ASTM definition, however, they may be considered regulated under other environmental laws and ordinances and may present a potential liability to the property owner.

- ***Surface Waters and Area Aquifer Protection (See Section 5.5.5)***

Currently, the subject property is mainly undeveloped. If future land use includes developing the land for residential or commercial use, the developer and property owner should be aware of the potential for contaminants to run off-site and into nearby storm water drains. Products of concern relating to any future development project or land clearing activity would be earthen material (silt), paints, oils, antifreezes and other fluids from automobile or on-site machinery, or leaks from on-site stocked items. Future land clearing of greater than one (1) acre will likely require both a County of Maui grading/grubbing permit and a National Pollution Discharge Elimination System (NPDES) General Permit (State of Hawaii, Department of Health).

- ***Solid Waste Management and Surface Fill Material: (See Section 5.5.4)***

A significant amount of historical dumping (landscaping, construction, and miscellaneous debris) was evident on the subject property. Some regulated items were noted. Management of these wastes needs to be performed in a manner that complies with all local, state, and federal regulations as applicable to the waste type. Confirmation of unidentifiable materials may require sampling and laboratory analysis.

Due to significant dumping of landscaping debris, rubbish debris, fill areas, and heavily vegetated areas, the entire subject site and underlying soils were not visibly inspected. It is important to note that if additional clearing of the property commences and large amounts of construction debris or unidentifiable substances (containers) are further discovered, proper waste identification, testing and applicable waste handling/disposal procedures are followed.

Excavation pits that were completed by Scientific Consultant Services Inc. (SCS) on the subject site indicated subsurface debris in certain areas, to depths of approximately 3 feet. Excavations indicated that approximately 3 feet of mixed fill soils overlie the native soil.

- ***Management of Building Materials (See Section 5.6.1)***

The ages of the on-site building structures are at least twenty (20) years old. It is, therefore, possible that some of the building materials may contain asbestos, or lead paint. The oil in the transformers of the distribution step-down substation may contain PCBs. Asbestos, lead paint, and PCBs may pose a concern to the subject property owner for any future planned renovation/demolition activities.

All worker safety and waste management concerns regarding the above-noted materials should be thoroughly addressed and undertaken during any future demolition/renovation activities.

The conclusions stated above should not be construed to mean that any regulatory agency would have the same opinion as this author, nor is any implication proposed therefrom.

The results of this environmental assessment are intended for general reference purposes only and are not intended as legal advice. The advice of legal counsel should be sought in regard to individual facts, circumstances and interpretation of environmental liability.

Environmental Site Assessment

Phase I Investigation

1.0 INTRODUCTION

A Phase I Environmental Site Assessment (ESA) is conducted to determine if a site may be contaminated with hazardous or toxic substances or wastes resulting from current or past site activities, unauthorized dumping or disposal, or migration of contaminants from adjacent or nearby properties. Its goal is to identify *recognized environmental conditions* on a property that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products. These release conditions apply to structures on the property as well as the soil, groundwater, or surface water of the property. The American Society of Testing and Materials (ASTM) Standard 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, is used to "...define good commercial and customary practices for conducting an environmental site assessment of a parcel of commercial real estate".

1.1 Purpose

The study objectives are to characterize the environmental setting of the subject property, to identify any obvious activity of environmental concern that may have occurred at or near the site, and to evaluate potential migration pathways for any identified contaminants. It may also address any activities that affect future considerations for potential environmental impairment to the property.

Another function of this Phase I ESA is to conduct an *appropriate environmental inquiry* in response to the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, its amendments, and similar state and local regulations. An ESA "appropriate inquiry" may provide the buyer, receiver, or lender making a loan secured by the subject real property with a basis to qualify for the *innocent landowner defense* should any legal action be initiated for environmental impairment to the property.

1.2 Detailed Scope of Services

This Phase I Environmental Site Assessment (ESA) has been prepared for Mr. G. Robert Johnston of Landtec, Incorporated and was conducted pursuant to Vuich Environmental Consultants, Inc.'s (VEC's) written proposal and contract accepted by Mr. G. Robert Johnston on June 23, 2003.

There were no other additional services requested of VEC by the Client.

1.3 Significant Assumptions

The assessment of *recognized environmental conditions* relies on: 1) sources of actual knowledge, 2) thorough appropriate inquiry, 3) reviewing reasonably ascertainable documents and records, and 4) conducting a visual and olfactory reconnaissance. In conducting this ESA, VEC has relied on the truthfulness of its inquiry sources and the validity of reviewed records. If obvious indications or VEC actual knowledge contradicted the reported/reviewed information sources, it has been so stated in the appropriate sections of this report.

1.4 Limitations and Exceptions

The investigation performed for this report is the component of an *appropriate inquiry* as to the potential for contamination to exist or have occurred at this site. It is also the basis of an *appropriate inquiry* into the presence or likely presence, release or threatened release, of hazardous substances and petroleum products at this real property. This Phase I Environmental Site Assessment was prepared according to guidelines presented in the American Society of Testing and Materials (ASTM E-1527-00) Document entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

Since no ESA can entirely eliminate uncertainty regarding the potential for *recognized environmental conditions* in connection with a property, the limiting intent of this investigation is to reduce the uncertainty to an appropriate level. Minimal requirements for the Phase I ESA include a review of historical records, a review of files and databases compiled by regulatory agencies, interviews with current owners and/or occupants of the property, and a field reconnaissance of the subject site and adjacent areas.

This ESA also takes into consideration the evaluation of other substances and products that are or may be interpreted as excluded under CERCLA. Commonly, these substances are of concern in commercial real estate transactions under current custom and usage and may include, but are not limited to, Radon, Lead-in-Drinking Water and Special Environmental Resources. Where appropriate, VEC has considered environmental concerns of other federal, state, and local regulations.

Some database resources developed for Maui County are in their infancy or are not cross-referenced in a manner as to be readily discernible. The Maui County Fire Department (MCFD) maintains material in a database format from 1995 to the present. Prior to 1995, material is maintained in hard copy format. VEC requests information from MCFD by fax and may also verbally discuss the subject site.

Databases and records utilized for this investigation were limited to those that are reasonably ascertainable; that is, they had to be publicly available, obtainable from its source within reasonable time and cost constraints, and practically reviewable with regard to volume, sorting, and organization. Additionally, the services of *Environmental Data Resources, Inc.* (EDR) were utilized to compile the environmental database listings. (See Appendix B).

1.5 Special Terms and Conditions

As a standard practice, a confidential client privilege was initiated by VEC for the work performed and contents of this report. VEC shall ensure that its officers, employees, agents, and independent contractors do not disclose this report or any information contained therein to any person without the proper knowledge and written consent from the Client (or as otherwise required by law). VEC shall ensure that each of its officers, employees, agents, and independent contractors understand and obey these requirements.

The information and opinions provided herein are intended as background data and planning guidance to interested parties. This should not be construed to mean that any regulatory agency would have the same opinion as VEC, nor is any implication proposed.

VEC has performed this study in a competent and professional manner. Since there may be hidden or unknown conditions that may be missed during this inspection, VEC cannot warrant the actual site conditions described in this report.



End of Section

2.0 SITE AND REGIONAL DESCRIPTION

Refer to Figure 1, Regional Setting Map, in Appendix A for a depiction of the general site setting of the subject site in relation to topographic features. Also depicted are the projected groundwater flows, regional surface water flows, and locations of other significant physical features or structures. See Figure 2, Appendix A for subject property details.

2.1 Location and Legal Description

The subject site is located northeast of the intersection of Honoapiilani Highway and Kaanapali Parkway in Kaanapali, Maui, Hawaii. The property consists of one (1) parcel of land, irregular in shape, measuring approximately 7.65 acres in total area. The site is further described on the Tax Maps of the State of Hawaii as Division 2, Zone 4, Section 4, Plat 06, Parcel 56. (See Figure 1, Appendix A and Tax Map, Appendix B). Property access is from both the northeastern and southern boundaries of the subject property.

Kaanapali is a resort town located on the western shores of the West Maui Mountains. It lies approximately four (4) miles north of the historic town of Lahaina.

2.2 Site and Vicinity General Characteristics

The property consists predominately of vegetated land (grasses and small shrubs). Mature trees stands are situated along portions of the eastern and western property boundaries. The southern and western property boundaries have steep grades.

The Kaanapali Golf Course Maintenance Baseyard makes up the northern adjacent property and part of the golf course bounds the subject site to the east. The Hawaii Water Service Company and the Lahaina Sewer Pumping Station #2 (SPS) comprise the southern adjacent property. The Honoapiilani Highway is situated to the west, beyond which is the Kaanapali Royal Hotel and part of the Kaanapali Golf Course. (See Figure 2, Appendix A).

The Pacific Ocean is located approximately 2,000 feet west of the subject site. Kekaa Point is located approximately 3,000 feet to the northwest of the subject property's northern boundary.

2.3 Description of Structures, Roads, Other Improvements

An easement used for storm water management traverses through the property from the northwestern corner along the western boundary extending through the middle of the property until it reaches the southeastern boundary. A single-lane paved road provides access through the property from the southern boundary to the northeast corner of the property.

One (1) plant nursery (consisting of two (2) structures) is located on-site and is leased by the Maui Marriott. One (1) vacant residence/sign painter's workshop is located near the central eastern boundary of the property. One (1) gravity well, one (1) water pump house, four (4) storage containers, one (1) storage shed, and one (1) distribution step-down substation are located near the southern boundary of the subject property. High voltage transmission lines are located over the western boundary of the subject property. See Figure 2 and Photos 1 through 8, Appendix A.

2.4 Current Use of the Property

At the time of this investigation, a portion of the site was primarily being used as a plant nursery and as a landscaping debris-dumping site. An operational groundwater well and pump house are also located on-site. The remainder of the property is essentially undeveloped.

2.5 Current Uses of the Adjoining Properties

The current uses of the adjoining properties as observed by the investigator during the site reconnaissance are as follows (see Figure 2, Site Plan, in Appendix A):

▪ <i>North Adjoining Property:</i>	Kaanapali Golf Course Maintenance Baseyard.
▪ <i>East Adjoining Property:</i>	Kaanapali Golf Course.
▪ <i>South Adjoining Property:</i>	Hawaii Water Service Company Baseyard and Maui County, Lahaina Sewer Pumping Station #2.
▪ <i>West Adjoining Property:</i>	Kaanapali Royal Hotel and Kaanapali Golf Course.



End of Section

3.0 USER PROVIDED INFORMATION

As a standard of practice, the following information was requested from the Client during the preliminary phases of this investigation:

- Title records and knowledge of environmental liens;
- Personal, specialized knowledge or experience in regard to *recognized environmental conditions* concerning the property; and
- If applicable, actual knowledge of a significant, low purchase price for the property, and explanation for the lower price.

The purpose of this information is to help identify the possibility of *recognized environmental conditions* in connection with the property. These tasks do not require the technical expertise of an environmental professional and are generally not performed by environmental professionals performing the Phase I ESA. VEC submits a Preliminary Environmental Investigation questionnaire to the Client for this information. The completed questionnaire is attached in Appendix B.

According to information provided by the Client in the Preliminary Environmental Investigation, the Client is not aware of any environmental liens, proceedings, or investigations against the subject property as of the date of this ESA.



End of Section

4.0 RECORDS REVIEW

The purpose of a records review is to obtain and review records that will help identify *recognized environmental conditions* in connection with the subject property. The service of Environmental Data Resources, Inc. (EDR) was utilized to compile the database listings.

4.1 Standard Environmental Record Sources

The subject property and properties within the minimum search distances were reviewed from the following record sources (see below). Risk sites, if any, that may be located on adjacent properties or within close proximity to the subject site are described. Refer to Appendix B, EDR Radius Map Report for a complete listing and description of all sites located within the designated search distances, details, and government agency database release dates.

The EDR Report bases the location of the listed risk sites on longitude/latitude information provided by the respective government agency. VEC confirms the locations of risk sites within close proximity to the subject site during the site visit. When the VEC site visit contradicts the EDR Report, it has been so stated.

Federal Database Listings

- ▼ **National Priorities List (NPL or Superfund) and Proposed NPL, EPA.** The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program.
 - The EDR database report indicates no listings within the one-mile search radius of the subject site.
- ▼ **Comprehensive Environmental Response, Compensation and Liability Information System List (CERCLIS), EPA.** The CERCLIS list contains data on potentially hazardous waste sites that have been reported to EPA by states, municipalities, private companies and private persons, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed to or on the NPL and sites, which are in the screening and assessment phase for possible inclusion on the NPL.
 - The EDR Report indicates no listings within the one-mile search radius of the subject site.
- ▼ **CERCLIS – No Further Remedial Action Planned (NFRAP), EPA.** NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.
 - The EDR Report indicates no listings within the ¼-mile search radius of the subject site.
- ▼ **Corrective Action Report (CORRACTS), EPA.** The CORRACTS report lists hazardous waste handlers with RCRA corrective action activity.
 - The EDR Report indicates no listings within the one-mile search radius of the subject site.
- ▼ **Resource Conservation and Recovery Information System (RCRIS), EPA/NTIS.** RCRIS includes selective information on sites that generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).
 - The EDR Report indicates no listings within the ½-mile search radius of the subject site, which treat, store, and/or dispose of hazardous waste (TSD).

- The EDR Report indicates no listings within the ¼-mile search radius of the subject site, which generate at least 1,000 kg/month of non-acutely hazardous waste or 1.0 kg/month of acutely hazardous waste (Lg. Quan. Gen. - LQG).
 - The EDR Report indicates no listings within the ¼-mile search radius of the subject site, which generates less than 1,000 kg/month of non-acutely hazardous waste (Sm. Quan. Gen. - SQG)
- ▼ **Emergency Response Notification System (ERNS), EPA/NTIS.** Records and stores information on reported releases of oil and hazardous substances.
- The subject site is not listed.

State of Hawaii Database Listings

- ▼ **Sites List (SHWS), DOH.** A list of facilities, sites, or areas in which the Office of Hazard Evaluation and Emergency Response (HEER) has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).
- The subject site is not listed.
 - The EDR Report indicates one (1) listing within the 1-mile search radius of the subject site. The Royal Lahaina Resort is listed with a Leaking Underground Storage Tank (LUST). This site is listed here and not under the LUST database because it is outside the search radius for a LUST, however, this site was turned over to the HEER office in June 2003. The site is listed as 'Site Cleanup Completed' and poses no significant concern to the subject site.
- ▼ **Permitted Landfills in the State of Hawaii (SWF/LF), DOH.** An inventory of solid waste disposal facilities or landfills in the State of Hawaii. These may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.
- The EDR Report indicates no listings within the ½-mile search radius of the subject site.
- ▼ **Leaking Underground Storage Tank (LUST) database, DOH.** An inventory of reported leaking underground storage tank incidents.
- The subject site is not listed.
 - The Lahaina Sewer Pumping Station #2 (SPS) (Facility ID# 9-501748) is located on the southern adjacent property and is listed with the State of Hawaii, Department of Health as a UST site with a confirmed release. The site is listed as "Site Cleanup Completed" as per State regulations. The UST is listed as "Permanently Out of Use" and unlikely poses an environmental concern to the subject site.
- ▼ **Underground Storage Tank (UST) database, DOH.** USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with DOH for administering the UST program.
- The subject site is not listed.
 - The Lahaina Sewer Pumping Station #2 (SPS) (Facility ID# 9-501748) is listed with the State of Hawaii, Department of Health as a UST site. The UST is listed as "Permanently Out of Use".
 - The AMFAC Maintenance Building (Facility ID# 9-501417) is listed with the State of Hawaii, Department of Health as a UST site. The UST is listed as "Permanently Out of Use".

The above listed sites unlikely pose an environmental concern to the subject site based on their current status.

4.2 Additional Environmental Record Sources.

The subject property and properties within the minimum search distances were reviewed from the following record sources. Those adjacent properties within close proximity to the subject site are described. Refer to Appendix B, EDR Radius Map Report, for a complete listing and description of all sites located within the designated search distances, details, and database release dates.

Federal Database Listings

- ▼ **Superfund (CERCLA) Consent Decrees (CONSENT), EPA Regional Offices.** Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites.
 - The EDR Report indicates no listings within the one-mile search radius of the subject site.
- ▼ **Records of Decisions (ROD), EPA.** ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.
 - The EDR Report indicates no listings within the one-mile search radius of the subject site.
- ▼ **National Priority List Deletions (De-listed NPL), EPA.** A list of sites that have been deleted from the NPL where no further response is appropriate.
 - The EDR Report indicates no listings within the one-mile search radius of the subject site.
- ▼ **Facility Index System/Facility Identification Initiative Program Summary Report (FINDS), EPA.** Contains both facility information and 'pointers' to other sources that contain more detail.
 - The subject site is not listed.
- ▼ **Hazardous Materials Information Reporting System (HMIRS), DOT.** A list of hazardous material spill incidents reported to DOT.
 - The subject site is not listed.
- ▼ **Material Licensing Tracking System (MLTS), Nuclear Regulatory Commission (NRC).** A list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements.
 - The subject site is not listed.
- ▼ **Mines Master Index File (MINES), Department of Labor, Mine Safety and Health Administration.** Contains both facility information and 'pointers' to other sources that contain more detail.
 - The EDR Report indicates no listings within the ¼-mile search radius of the subject site.
- ▼ **Federal Superfund Liens (NPL Liens), EPA.** A list of properties whereby the EPA has filed liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability.
 - The subject site is not listed.
- ▼ **PCB Activity Database System (PADS).** Identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs who are required to notify EPA of such activities.
 - The subject site is not listed.
- ▼ **RCRA Administrative Action Tracking System (RAATS), EPA.** A historical archived database containing records on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by EPA. The database was discontinued on September 30, 1995.
 - The subject site is not listed.

- ▼ **Toxic Chemical Release Inventory System (TRIS), EPA.** A list of facilities which release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313.
 - The subject site is not listed.
- ▼ **Toxic Substances Control Act (TSCA), EPA.** Identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list.
 - The subject site is not listed.

Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)/TSCA Tracking System (FTTS INSP and FTTS), EPA – Office of Prevention, Pesticides and Toxic Substances. FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA, and Emergency Planning and Community Right-to-Know Act (EPCRA).

- The subject site is not listed.

State of Hawaii Database Listings

- ▼ **Release Notifications (SPILLS), DOH.** Releases of hazardous substances to the environment reported to the HEER Office. The following databases are included in the HEER Spill List:

Release Notification Report: a compilation of releases reported to HEER.

Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA): a list of facilities that have submitted Tier II and Form Rs as a reporting requirement.

 - The subject site is not listed.
- ▼ **Registered Wells and Dry Wells, DLNR.** See Section 5.5.6. There is one (1) registered well (TVN #5541-01 listed for the subject property. (10/99 DLNR data). See Figure 1, Appendix A for the nearest well locations.
- ▼ **Air Quality Permit, DOH.** Current activities conducted on-site do not require an air quality permit.
- ▼ **Stormwater Discharge (NPDES) Permit, DOH.** Any disturbance to land that is greater than one (1) acre now requires a NPDES permit. Future land clearing or grading activity will likely require a NPDES permit with the State of Hawaii (Clean Water Branch).

County and Other Database Listings

Other local records of environmental interest that were reviewed or considered for review by VEC included:

- ▼ **Fire Department, County of Maui.** The Maui County Fire Department (MCFD) maintains file material that is not on a database. MCFD was contacted for an inquiry on the subject property but, to date, has not received a response. (See Appendix B).
- ▼ **Former Manufactured Gas (Coal Gas) Sites.** EDR provides exclusive information regarding the existence and location of Coal Gas sites.
 - The EDR Report indicates no listings within the one-mile search radius.
- ▼ **Grading/Grubbing Permit, County of Maui.** Future clearing/grading activity will likely require obtaining a Grading/Grubbing Permit.
- ▼ **Hazardous Waste Disposal Documents.** VEC did not review any hazardous waste disposal documents.

- ▼ **Maui Electric Company.** Maintains records on county power transformers regarding PCB-containing equipment and equipment maintenance.
 - Refer to Section 5.3.7 for a listing of any pole and/or pad-mounted transformers located on the property.
- ▼ **Other Environmental Reports.** Environmental site assessment reports that were previously completed by VEC in close proximity to the subject site were reviewed.
- ▼ **Planning & Zoning, County of Maui.** According to the Maui County Department of Planning, the subject site's zoning is "A-2 (Residential District)" and is **not** within the boundaries of the Special Management Area (SMA).
- ▼ **Property Tax Office, County of Maui.** The Maui County Property Tax Office maintains records of past ownership, maps, sketches, or other information as it pertains to the subject property. (See also Section 7.1). The property is currently owned by Kaanapali Development Corporation formerly AMFAC and Pioneer Mill Company, LTD.
- ▼ **Wastewater Discharge Permit, County of Maui.** VEC did not identify any wastewater discharge permits registered to the subject property.

4.3 Physical Setting Source(s)

The following sources were reviewed for physical setting information (refer to Section 7.0 for a complete listing):

- Atlas of Hawaii
- Civil Defense Tsunami Evacuation Map
- FEMA National Flood Insurance Rate Map
- Geologic and Topographic Map
- Groundwater Map and Water Quality Plan
- U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, HI
- U.S. Geological Survey, 7 ½ Minute Topographic Map

These data sources were used to provide information regarding physical characteristics of the subject site and surrounding area. This information is typically used in analysis of potential geological trends, which might impact environmental conditions of the subject site.

4.4 Historical Use Information on the Property and Adjoining Properties

The following historical data sources were reviewed for this report (refer to Section 7.0 for a complete listing):

- Aerial Photographs
- Department of Planning and Zoning, Maui County
- Maui County Fire Department (Fire Prevention Bureau / Hazardous Materials Division)
- Maui County Real Property Tax Records
- Maui Remembers: A Local History by Gail Bartholomew
- Personal Interviews
- Sanborn Maps (no available coverage)
- State of Hawaii, Department of Health, Environmental Management Division
- Environmental Data Resources, Inc. (EDR)

Historic Aerial Photographs

A series of aerial photographs, which covered the subject property and surrounding area, were examined. See Figure 2, Site Plan, for clarification of specific locations.

Table 1.0. Historical Aerial Photograph Analysis.																	
Date	Aerial Photo Analysis																
11/21/59	SS: Intensive agricultural activity (sugarcane crops) and associated road networks. N & E: Intensive agricultural activity (sugarcane crops) and associated road networks. S: Not on photograph. W: Two-lane Honoapiilani Highway beyond which lies intensive agricultural activity (sugarcane crops) and associated road networks. RG: Extensive agricultural activity on the slopes of West Maui (sugarcane and pineapple cultivation). Very limited development along the coast. Honoapiilani Highway is a two lane paved roadway.																
2/11/71	SS: No significant changes. N: Baseyard maintenance structure established. E: No significant changes. S: Water pumping station and transformer pads visible. Sewage treatment facility structures fully visible (including sludge drying pit). W: Kaanapali Golf course established. Kaanapali Parkway established as a paved roadway. RG: Sugar cane production continues. Dramatic commercial development along coastline.																
12/20/80	SS: Significant changes to the subject property. Storm water easement now traverses the subject property from the southeastern corner to the northwestern corner. Four (4) commercial structures are visible. Limited rock piles are visible near the central eastern boundary. N: Baseyard maintenance building's northern side has been remodeled and extended. E: Kaanapali Golf course established. S: One (1) additional large rectangular maintenance structure visible. One (1) building of the Sewer Pump Station present. W: Royal Kaanapali Hotel established. RG: Commercial development along the shoreline to the west continues.																
2/22/95	SS: Paved road traverses through the property. Two (2) structures and nursery are established. Two (2) previously noted commercial structures are no longer present. N: No significant changes. E: No significant changes. S: Sludge drying pit filled in. Sewer plant does not appear to be operational. Two (2) additional structures and an expansion nearly doubling the size of the maintenance structure. The Sewer Pump Station has three (3) additional structures. W: No significant changes. RG: Development has slowed, South Kaanapali Golf Course established.																
<p>Notes:</p> <table> <tr> <td>SS</td> <td>Subject Site</td> <td>W</td> <td>West Adjoining Property</td> </tr> <tr> <td>N</td> <td>North Adjoining Property</td> <td>RG</td> <td>Regional Area</td> </tr> <tr> <td>E</td> <td>East Adjoining Property</td> <td></td> <td></td> </tr> <tr> <td>S</td> <td>South Adjoining Property</td> <td></td> <td></td> </tr> </table>		SS	Subject Site	W	West Adjoining Property	N	North Adjoining Property	RG	Regional Area	E	East Adjoining Property			S	South Adjoining Property		
SS	Subject Site	W	West Adjoining Property														
N	North Adjoining Property	RG	Regional Area														
E	East Adjoining Property																
S	South Adjoining Property																

VEC did not observe any features on aerial photographs examined that would suggest the presence of significant vegetation stress, soil staining, or bulk storage of chemicals such as drums or tanks. However, limited possible dumping was noted in the 1980 and 1995 aerial photos on the subject property.



End of Section

5.0 SITE RECONNAISSANCE

Information regarding the storm water flow, property layout, physical characteristics, and adjoining property conditions are presented in Figure 2, Site Plan, and the site photographs. (See Appendix A).

5.1 Methodology and Limiting Conditions

A site investigation focuses on obtaining information indicating the likelihood of identifying *recognized environmental conditions* in connection with the property and assessing the subject property in relation to surrounding land uses and natural surface features. It includes a physical inspection of the real property and any on-site building structures.

On July 16, 2003, VEC personnel, Mr. Jeffrey Kermode and Mr. Robert Davis, conducted an overall site inspection of the subject site. The method used to observe the subject property included: (1) walking the entire perimeter of the subject property, (2) thoroughly inspecting all areas of observed dumping or material storage areas; (3) traversing the undeveloped vegetated land; and (4) inspecting buildings located on the subject property. The property boundaries were not clearly defined, and the VEC investigators made estimates based on the property TMK map.

Certain physical obstructions limited the investigators from total property observations of native surface soils. Approximately 25% percent of the subject site's total surface soils were not observable due to the subject site's building structures, storage containers, landscaping debris, miscellaneous debris, asphalt road surfaces, and limited areas of dense vegetation. Fill soil material also covers portions of the site's native surface soils.

Any environmental conditions reported here are not intended to include minimal conditions that 1) generally do not present a material risk of harm to public health or the environment and 2) generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

5.2 General Site Setting

5.2.1 Current and Past Uses(s) of the Property

Current Uses

Kaanapali Development Corporation, formerly AMFAC and Pioneer Mill Company, LTD., currently own the property.

Sugarcane agriculture had been previously active on the subject property and adjacent properties for several decades. The subject property has a plant nursery operating near the eastern boundary and the eastern adjacent property is part of the Kaanapali Golf Course. Both pesticide and fertilizer use are related to the above noted activities.

A storm water drainage easement transverses through the property from the northwestern corner along the western boundary extending through the middle of the property until it reaches the southeastern boundary of the subject site.

A gravity well and associated pump house is located along the southern boundary of the property. The well is primarily a back-up source for irrigation water to the Kaanapali Golf Course.

Information presented here represents those items visually or physically observed or identified in the interviews or records review.

Past Uses

Sugarcane cultivation was active on the subject site for several decades up until approximately the late 1970's. In 1980 three (3) commercial buildings were permitted with the Maui County Tax Office and built on the northeastern boundary of the subject property. The buildings were identified as a maintenance building, warehouse, and warehouse with office spaces. No other information was available about these structures. One (1) is believed to be the vacant residence/sign painter's workshop. Operations within this building were related to the making of signs for the golf course.

The subject property has been the site of historic dumping of landscaping debris.

The knowledge of past uses of the property was primarily made from aerial photographs and interviews. Topographic maps and the Hawaii Atlas provided limited regional information.

5.2.2 Current and Past Uses(s) of the Adjoining Properties and Surrounding Area

VEC has researched current uses of adjoining properties and at its discretion, past uses of the adjoining properties and the surrounding areas. Information presented here represents those items visually or physically observed or identified in the interviews or records review. The information is described herein as items that may indicate *recognized environmental conditions* with adjoining properties and those conditions that may indicate a high probability of migration of hazardous substances or petroleum products to the subject property.

Adjoining Property	Period	Land/Property Use	Concerns	Comments
North of Subject Site	Past	Agricultural activity (sugarcane).	Historical pesticide application on sugarcane crops leading to possible soil and groundwater contamination.	Sugarcane cultivation had been active on this site for several decades up until the late 1980's. During this time, there may have been the use of agricultural pest control chemicals and fertilizers, which has been long recognized by the U.S. Environmental Protection Agency (EPA) for contributing to the potential contamination of surface soils and groundwater systems. Although chemicals used for sugarcane crops could have been regularly used in significant quantities, they degrade with time in soil. Most agricultural chemical concerns typically arise when bulk (full strength) products leak or are spilled onto soils. However, it is possible that chemicals in long-term use remain at, or above, regulated levels.
	Present	Kaanapali Golf Course maintenance baseyard.	<ul style="list-style-type: none"> • Improper use / management of hazardous/regulated materials. • Former Underground Storage Tank(UST) site. 	There is no indication of improper use or management. Based on current status of the nearby listed site, it is unlikely the site has had a significant environmental impact on the subject property, nor is there any expected impact therefrom.
East of Subject Site	Past	Same as North (Past) above.	See North Adjacent Property (Past) above.	See North Adjacent Property (Past) above.
	Present	Kaanapali Golf Course.	Herbicide and fertilizer use. Possible transport of chemicals to the subject site via surface drainage and groundwater.	It is unlikely that the levels of chemical herbicides and/or fertilizers exceed federal/state criteria.
South of subject site	Past	Waste Water Treatment Facility.	Possible heavy metals contamination of site.	Historic sludge drying practices of the waste water treatment facility make contamination a possibility.
	Present	Hawaii Water Service Company Maintenance baseyard. Sewer Pump Station	Improper use of management of hazardous/regulated materials. Former Leaking Underground Storage Tank (LUST) site.	Limited soil staining was noted and would unlikely negatively impact the subject property. No indication of improper use or management. Based on current "Cleaned Up" status of the nearby listed site, it is unlikely the site has had a significant environmental impact on the subject property, nor is there any expected impact therefrom.
West of subject site	Past	Agricultural activity.	See North Adjacent Property(Past) above	See North Adjacent Property (Past) above.
	Present	Kaanapali Royal Hotel/Condominiums	None.	None.

The development of past uses of the adjoining properties was primarily made from interviews, VEC site reconnaissance, Maui County and State records, and aerial photographs. Topographic maps and the Hawaii Atlas provided limited regional information.

5.2.3 Topography

The regional area lies near the western shores of the West Maui Mountain side of the Island of Maui. Its physiographic type feature is described as Napili Dissected Upland.

Locally, the subject site's elevation ranges from approximately 18 feet to 90 feet above mean sea level and is characterized by westsouthwesterly trending slopes of approximately 7 percent. Steeper pitched slopes are located along the western and southern property boundaries. On-site relief is estimated to be approximately 60 feet, descending from high points along the eastern property boundary to low points along the southern and western property boundaries.

The Pacific Ocean is located approximately 2,000 feet west of the subject site. Kekaa Point is located approximately 3,000 feet to the northwest of the subject property's northern boundary.

5.2.4 Geology and Soils

The West Maui Volcanics have been divided into three series. The oldest series are the Wailuku Volcanics, which are the basaltic flows that built the bulk of the West-Maui island shield. The Honolua Volcanic Series overlies the Wailuku Volcanics and consists of thin, discontinuous andesitic and trachytic flows, domes and pyroclastic deposits. After a long period of erosion, renewal activity included the flows and cones of the Lahaina Volcanic Series.

According to the U.S. Department of Agriculture, the following soil series underlie the subject site:

- Wahikuli silty clay, 3 to 7 percent slopes (WbB). This soil is located on smooth, low uplands. In a representative profile the surface layer is dark reddish-brown silty clay that has subangular blocky structure. The sub-stratum is hard basic igneous rock. The soil is mildly alkaline in the surface layer and subsoil. Permeability is moderate. Runoff is slow, and the erosion hazard is slight.
- Wahikuli stony clay, 7 to 15 percent slopes (WcC). This soil is similar to Wahikuli silty clay, except that there are enough stones on the surface to hinder cultivation. Runoff is slow to medium, and the erosion hazard is slight to moderate. This soil is used mostly for sugarcane.

Other common, surface geologic phenomena investigated in an environmental site assessment are faults, landslides, rock falls, earthquake zones and volcanic eruptions. In 1992, the USGS reevaluated the seismic hazards for the State of Hawaii, and Maui County was classified as Zone 2B. This indicates that in any given year within a 50-year period (average building life span) there is a 10% chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.

After examination of the relevant data, it has been determined by VEC that these geologic phenomena are not a factor to the subject site. However, it should be noted that this is not an investigation for geological hazards.

5.2.5 Hydrology

The subject site area has an annual average rainfall of approximately 25 inches. The average temperature range from the annual high to the annual low is 82 degrees and 65 degrees Fahrenheit, respectively. The pre-development vegetation zones within this temperature and rainfall range are characterized as Kiawe and lowland shrubs. Characteristic plants for this zone are kiawe, koa haole, finger grass and pili grass.

On-site drainage is generally directed from the higher property elevations of the eastern boundary to the lower elevations of the western boundary. (See Site Plan, Figure 2).

The Civil Defense Tsunami Evacuation Maps indicates that the subject site is not in the Tsunami reach zone. The nearest shoreline is approximately 2,000 feet to the west.

The pertinent Federal Insurance Rate Map (FEMA FIRM MAP #15003 0153 B dated map on June 1, 1981) depicts the area as minimal flooding (Zone C).

5.2.6 Hydrogeology

As with all islands of the United States, Maui is regulated by the Coastal Zone Management Act of the Clean Water Act. These two designations require protective comprehensive plans for groundwater management and limit the extent of certain types of development and land use. One important management criterion is the disposal of wastewaters. The Water Resource Management Department of Hawaii has designated the groundwater management area as the *Honokowai Aquifer System* within the *Lahaina Aquifer Sector*. The groundwater underlying the subject site is defined as follows:

Aquifer	Aquifer Type Hydrogeology	Development Stage	Utility	Salinity (mg/l)	Uniqueness	Vulnerability to Contamination
Single Layer	Unconfined, basal aquifer within horizontally extensive lavas.	Currently Used	Drinking	Fresh	Irreplaceable	High

The following are descriptions of the aquifer classification codes, according to Water Quality Plan of 1992:

Aquifer Type Hydrogeology (*basal, high level, unconfined, confined, or confined/unconfined*): *basal* – freshwater in contact with seawater; *high level* – freshwater not in contact with seawater; *unconfined* – water table is the upper surface of the saturated aquifer; *confined* – aquifer is bounded by impermeable or poorly permeable formations; and *confined or unconfined* – the actual condition is uncertain.

Aquifer Type Geology: flank, dike, flank/dike, perched, dike/perched, and sedimentary.

Development Stage – currently used, potential use, no potential use: Aquifers are differentiated according to those already being used (currently used), those with potential utility (potential use), and those having no potential developability.

Utility – drinking, ecologically important, neither: Identifies aquifers by use.

Salinity – fresh, low, moderate, high and seawater: The gradation of groundwater from fresh to seawater is a feature of all basal aquifers in Hawaii. The upper limit of the standard for drinking water is 250 mg/l Chlorine (Cl⁻) (fresh) and true seawater has a chloride content of 18,980 mg/l.

Uniqueness – irreplaceable and replaceable: The classes irreplaceable and replaceable are direct EPA derivatives. Virtually all-potable water in the state of Hawaii should be considered irreplaceable over the long term.

Vulnerability to Contamination – high, moderate, low, none: Because of the geographical limits of resources, interconnection among groundwater sources and the relatively rapid time of groundwater travel, aquifers can be described as being either vulnerable or not vulnerable to contamination.

The estimated depth to the basal groundwater is projected to be range from approximately 14 feet to 95 feet below the ground surface, depending on the position on the subject site. The projected groundwater flow is expected to follow the general slope of the underlying volcanic flows and be in a westerly direction.

The subject site is located approximately 2000 feet makai (seaward) of the Underground Injection Control (UIC) line. The UIC line is the designated boundary that divides protected inland areas situated over drinking water sources from seaward areas located over non-potable water sources.

5.2.7 Potable Water Supply and Sewage Disposal System

The subject property is vacant and no services are required. This section does not apply.

5.3 Interior and Exterior Observations

5.3.1 Hazardous/Regulated Substances and Petroleum Products in Connection with Identified Uses

There are no significant amounts of hazardous substances or regulated materials currently used on-site, as visually or physically observed during the site visit or identified from interviews or records review. Limited quantities of regulated materials are stored on-site for nursery operations and water pump house maintenance. (See Photo 16, Appendix A). Items identified during the site visit are as follows:

- One (1) 55-gallon drum and approximately 5 five (5)-gallon containers labeled, "Chevron Turbine Oil ISO 68" (See Photo 13);
- Bags and small containers of herbicides, pesticides and fertilizers at the plant nursery (See photo 12).

The materials that were observed were mostly stored in their proper containers. Several containers have been stored outside exposed to environmental conditions. Continued exposure may result in a leak and possible surface soil contamination (See Photo 13).

VEC recommends the following management procedures be followed at facilities storing drums/containers:

- Drums containing hazardous or regulated waste/product should be stored in an area with underlying secondary containment. This may include concrete ground surfaces with retaining berms or similar spill control protection. Drum storage should be located in an area (preferably covered) that will be protected from accidental machinery or vehicular impact;
- Any product filling should be done in the containment area. If this is not possible, proper spill kits should be nearby to handle any spilled product. Spills should be cleaned up immediately and any contaminated soil or absorbent material disposed of properly;
- All drums/containers should be properly labeled with product identification and inventoried. Materials Safety Data Sheets (MSDS) should be available on each product inventoried;
- Drums with no remaining free product should be disposed of according to County regulations. Drums to be re-used and temporarily stored on-site should be empty, clean and labeled "Empty".

Spills and leaks from drums or machinery during the on-site operations should be kept to a minimum with proper product management and employee awareness. This will assist in minimizing the potential for soil contamination and even possible surface or groundwater contamination.

Herbicides, fertilizers and pesticides have been recognized by the U.S. Environmental Protection Agency (EPA) for contamination to surface soils, groundwater and surface water systems. The chemicals used for nursery operations are likely used in small quantities. Additionally, these chemicals degrade with time in soil and it is unlikely that any chemicals used are still at or above regulated levels. The typical chemical application is in a diluted form. Contamination concerns typically arise when bulk (full strength) products leak or are spilled on soils. Mike Cergota, Maui Marriott Landscape Manager, informed VEC that only limited mixing is done in front of the storage area and that bulk storage of chemicals is off the subject property. Mr. Cergota was unaware of any significant spills involving pesticides or fertilizers. Owner should ensure that employees understand and follow appropriate mixing and application guidelines of all pesticides, herbicides and fertilizers used on site.

There are no other hazardous substances or regulated materials currently used on-site, as part of a production process, or otherwise directly related to on-site operations, as visually or physically observed during the site visit or identified from interviews or records review.

5.3.2 Hazardous/Regulated Substances and Petroleum Products/Containers (not in connection with identified current uses)

The subject site had been involved in historical sugarcane cultivation for several decades up until the late 1970's. During this time, there may have been the use of agricultural pest control chemicals and fertilizers, which has been long recognized by the U.S. Environmental Protection Agency (EPA) for contamination to surface soils, groundwater and surface water systems. Although chemicals used for sugarcane crops could have been used in large quantities, they degrade with time in soil and it is unlikely (yet still possible) that chemicals used for historical cultivation remain at or above regulated levels. Additionally, the typical chemical application is in a diluted form over a field area. Agriculture chemical concerns typically arise when bulk (full strength) products leak or are spilled on soils.

From the 1980's until recently, the site had one (1) structure involved in sign production for the golf course. VEC personnel identified inadequate storage of moderate quantities of hazardous/regulated substances and petroleum-based products in household sized containers. (See Photo # 16). Items identified during the site visit were as follows:

- Limited quantities of paints and solvents (household container size);
- Limited petroleum-based products (household container size);

No evidence of leakage or spills relating to these containers was observed

There is no evidence of any bulk storage, or significant spills of hazardous or regulated substances on the subject property.

5.3.3 Unidentified Substance Containers

VEC identified the following unidentified substances suspected of being possible hazardous/regulated substances or petroleum products as visually and physically observed on the property at the time of the site reconnaissance:

- 1 x 55-gallon drum containing a residue of a petroleum-based liquid with characteristics of waste oil was noted. The contents of the drum have impacted the underlying surface soils (See Photo 14);
- 1 x 55-gallon drum and several unlabeled 5-gallon containers, containing petroleum-based liquid.
- 3 x 2-gallon buckets (full) containing a petroleum-based product with characteristics of waste oil. The containers were open; however, no evidence of leakage or spillage was observed (See Photo 15).

It should be noted that due to the large extent of landscape debris dumping on the subject site, other containers of hazardous, regulated, suspect, or unknown substances may be present that were unobserved by VEC personnel at the time of the site visit. See section 5.3.1 for proper management/storage practices.

5.3.4 Storage Tanks

No indications of underground or aboveground fuel storage tanks were observed on the subject property during VEC's site reconnaissance. This site is not registered in the regulatory databases.

5.3.5 Odors

VEC identified no suspect odors on the subject property besides odors emanating from the containers previously noted above (Section 5.3.3).

5.3.6 Pools of Liquid

The investigators did not observe any pools or sumps of liquids likely to be hazardous substances or petroleum products to the extent visually and/or physically observed on the subject property at the time of the site visit or from interviews or records review.

5.3.7 Indications of PCBs

Pole or pad-mounted transformers numbered 7777 or above are considered to be non-PCB containing by the Maui Electric Company.

One (1) distribution step-down substation was identified on the property. Some signs of leakage and staining were evident on the transformer pad; however, no evidence of surface or soil staining was observed at the time of VEC's site inspection.

Due to the age of the above-noted transformers (and the lack of identification numbers) these transformers may be PCB-containing. Disposal of these transformers, and transformer oils may require mainland disposal.

Background Information:

Polychlorinated biphenyls (PCBs) are a group of manufactured organic chemicals that contain 209 individual chlorinated chemicals (known as congeners) and were introduced in 1929. PCBs have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. Products containing PCBs are old fluorescent lighting fixtures, electrical appliances containing PCB capacitors, old microscope oil, and hydraulic fluids.

The manufacture of PCBs stopped in the United States in 1977 because of evidence that they build up in the environment and cause harmful effects. The distribution in commerce of PCB containing items was banned in 1979 (40 CFR 761.20). The EPA aggressively enforces regulations concerning PCB manufacturing, use, distribution, release and disposal under the Toxic Substance Control Act (TSCA). This federal agency extensively regulates the use, servicing, and disposal of PCBs in electrical equipment by enforcing marking, notification, inspection, and record keeping requirements.

5.4 Interior Observations

5.4.1 Heating and Cooling Systems of On-site Building Structures

The structures located on-site do not have heating and cooling systems. Therefore, this section does not apply.

5.4.2 Stains and Corrosion

No significant signs of stains or corrosion were noted in the interior of the buildings; however, VEC personnel did not have access to the storage shed or containers during the on-site visit.

5.4.3 Indoor Wastewater Drains, Sumps and Grease Interceptors

There were no building structures on site at the time of this investigation that contained indoor wastewater drains, sumps or grease interceptors. This section does not apply.

5.5 Exterior Observations

5.5.1 Pits, Ponds, and Lagoons

There were no areas identified as any man-made or natural depressions that are, or would have been, likely to hold waste liquids or sludge from industrial operations or other activities.

5.5.2 Stained Soil or Pavement

One (1) 55-gallon drum containing a residue of a petroleum-based liquid with characteristics of waste oil was noted. The contents of the drum have impacted the underlying surface soils (See Photo 14).

5.5.3 Stressed Vegetation

There were no areas of stressed vegetation identified on the subject property at the time of the site visit that are, or would have been, likely caused from something other than insufficient water (or flooding).

5.5.4 Solid Waste / Surface Fill Material

A series of extensive, debris mounds were identified in the eastern boundary area of the subject property, and numerous boulder piles are located throughout the central eastern area of the subject property. (See Figure 2). The height of the landscape debris mounds ranged from approximately 3 to 8 feet and up to 220 ft. in length.

The following solid wastes were noted during the site reconnaissance (See Figure 2):

- Landscape debris (i.e. tree limbs, palm fronds, grasses, shrubs, fiberglass filtration containers, bagasse, etc.);
- Construction debris (i.e. concrete, lumber, corrugated metal, re-bar, etc.);
- Miscellaneous items (i.e. metal tanks, derelict vehicle parts, derelict golf carts, golf course items, etc.);
- Household waste (i.e. rubbish, clothes furniture, dishware, etc.);
- Special waste (i.e. automobile tires, refrigerator).

Some wastes may be considered "Special Wastes" according to the Hawaii Administrative Rules (HAR) on Solid Waste, Title 11, Chapter 58.1. Special wastes are those wastes that do not fit in the mixed municipal solid waste (MMSW) category, either by general nature or because of special handling requirements. Special waste categories include: asbestos, sludge, medical waste, used oil, batteries, agricultural wastes, tires, derelict vehicles and white goods (i.e., appliances). Locally, the County of Maui, Department of Public Works, Solid Waste Division administers the disposal of these materials. These wastes need to be disposed of in a permitted solid waste landfill such as the Maui County Central Landfill. Special wastes' management needs to be performed in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type.

An undetermined amount of the subject property's surface soils consist of fill material. The exact source of the fill material is unknown, however, is likely from nearby or adjacent lands. Excavation pits that were completed by Scientific Consultant Services Inc. (SCS) on the subject site indicated subsurface dumping to approximately three (3) feet. No suspect or stained soil layers were identified. According to John Zachman of Scientific Consultant Services Inc. (SCS), the average fill depth was estimated to be approximately three (3) feet. The fill layer characteristics showed mixed fill layers in the upper strata, showing some signs of sub-surface debris.

Historical on-site disposal practices are unknown. Historical aerial photographs did indicate limited dumping activity on the subject property.

5.5.5 Wastewater or Storm Water – Discharge Drains, Dry Wells, Drainageways, and Retention Basins
One (1) storm water easement traverses through the property from the northwestern corner along the western boundary extending through the middle of the property until it reaches the southeastern boundary. VEC did not identify any outdoor wastewater sumps, drywells, or retention basins on the subject property.

Future developers should be aware of the potential for contaminants to enter nearby drainageways or storm water discharge drains. Products of concern relating to any future development project would be earthen material (silt), paints, oils, antifreezes and other fluids from automobile or on-site machinery, or leaks from on-site stocked items.

Any future grubbing or grading activity that may take place on the subject site (especially if > 1 acre of soil disturbance), both a Maui County Grading Permit and a Department of Health, Clean Water Branch, NPDES (National Pollutant Discharge Elimination System) permit will likely be required.

5.5.6 Wells

VEC's database search concluded that there were no production, domestic, abandoned, or monitor wells located on the subject site. (See Figure 1 for the nearest well locations). However, VEC did identify one (1) groundwater gravity well and associated pump house located on-site that was historically used for agricultural purposes. The groundwater interface from the ground surface is approximately 14 ½ feet. The well is an open pit measuring approximately four (4) feet by four (4) feet. A wooden structure covers the well for safety reasons. This type of well utilizes a tunnel/aqueduct system to bring water from upgradient to a central location. Mr. Tim Canute, of Kaanapali Golf Course Maintenance, informed VEC that the well is only used as a back up system to the golf courses primary irrigation system and water is rarely removed from the well. Water quality testing data was requested, but as to the date of this report VEC has not received any information. VEC did not notice any petroleum-like sheen on the well water surface.

5.5.7 Septic and Cesspool Systems

Currently the site is not connected to the county's wastewater sewer system. There is no operational septic or cesspool system located on the subject site; however, it is possible such systems were formerly in place. These systems have been out of service for at least a decade and, therefore, likely pose no significant environmental concern.

5.6 Non-Scope Considerations

The concerns listed below are not normally considered relevant under CERCLA, however, may be considered regulated under other environmental laws and ordinances and may present a potential liability to the property owner.

5.6.1 Asbestos-Containing Materials (ACM)

Current OSHA regulations for occupational exposure to asbestos hazards require commercial building owners to presume all thermal system insulation, sprayed or textured surfacing materials and asphaltic and vinyl flooring installed in buildings constructed before 1981 to contain ACM.

Original construction of the sign painter's workshop dates back to 1980 and it is possible that asbestos-containing materials could have been used during construction. The pump house was constructed of primarily sheet metal.

During the site inspection, AHERA-certified building inspector Jeffrey Kermode performed a visual survey for suspect asbestos-containing building materials (ACMs). The survey consisted of a reconnaissance of readily accessible areas only, and was limited in scope in the contract. The site inspection did not include any entry into crawl spaces, plenums, or locked areas. The following listing of suspected ACM was compiled from site assessment notes and does not constitute a *comprehensive* building inspection under EPA/AHERA protocol:

- Asphalt roofing material and felt located on the residential/sign painter's workshop structure;
- Sealant located on the metal siding and roofing material of the pump house structure.

Background Information:

Asbestos was widely used in building materials and in fire retardant applications up through the 1980s. Asbestos use in the United States did not start to decline until the EPA banned the spray-applied materials during 1973-1978. Further restrictions on U.S. manufactured asbestos products continued into the 1990s. The EPA ban rule and phase-out of all asbestos-containing materials (ACMs) was to be implemented in stages from 1990 to 1997, but the Rule was overturned in federal court.

Asbestos is a known health hazard causing progressive lung scarring and cancer. Asbestos related conditions usually develop within 15 to 40 years after exposure. Exposed smokers have an increased risk factor of 50 to 90 times that of the non-smoking population.

State and federal rules have established standards for the use and control of ACM. These standards apply to worker protection, notification procedures, *renovation/demolition activities, and construction debris (waste) management.*

Under the EPA's Asbestos Hazard Emergency Response Act (AHERA), 40CFR763, asbestos-containing material (ACM) is defined as any substance whose asbestos content exceeds one percent (1%) of the total volume as determined by Polarized Light Microscopy (PLM) analysis. Building inspector training, sampling procedures and laboratory analysis are also addressed under this rule. Some aspects of this rule have been extended to public and commercial buildings. The Hawaii Administrative Rules 11-502 have essentially adopted EPA's AHERA standard.

Current OSHA regulations for occupational exposure to asbestos hazards require commercial building owners to *presume* all thermal system insulation, sprayed or textured surfacing materials and asphaltic and vinyl flooring installed in buildings constructed before 1981 to contain ACM. The Federal Occupational Safety and Health Act (OSHA) Construction Standard for Asbestos requires that building owners communicate any potential or actual asbestos hazards (29CFR1926.1101(k)). Owner/Operators must inform in-house employees and any outside contractor (workers) who apply or bid for work in or adjacent to areas known or *presumed* to contain asbestos. Included asbestos materials are Thermal system insulation (TSI), sprayed or trowelled-on surfacing materials, and asphalt or vinyl flooring material installed prior to 1981. Hawaii Occupational Safety and Health (HIOSH) under HAR 12-141.1 has adopted the federal standard.

Under EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) 40CFR Part 61, are requirements for renovation and demolition work involving ACM.

5.6.2 Radon

VEC did not identify any man-made products on the subject property that are known or suspected to emit radioactive decay elements.

Background Information:

Radon is a colorless and odorless radioactive gas that can produce health effects such as cellular injury. Radon gas can occur in the natural environment as concentrations from certain rocks and geologic conditions have a high radon-emanation potential.

These surface rock types are not known to occur in Hawaii. It is possible that increased concentrations of Radon could occur in regions where geologic fault and volcanic rift zones may release gases from deeper earth sources. However, the State of Hawaii, Department of Health (DOH) has not addressed concerns for any significant levels of gas to occur anywhere in Hawaii. This was based on the 1992 and 1996 DOH investigations conducted in elementary schools throughout the State.

5.6.3 Lead-Based Paint

The interior and exterior painted surfaces of the sign painter's workshop could contain paint with measurable levels of lead. A significant amount of the paint is in poor condition (flaking). This is not a concern if the paint is left undisturbed or is even painted over. However, it does become a concern for the building owner/manager if renovation or demolition work is undertaken that will disturb the painted surfaces.

VEC did not identify significant construction materials/debris that might contain lead-based paint. Though unlikely, if significant amounts of building materials are uncovered during future land clearing activities,

proper waste identification and sampling should be conducted on suspect materials that could contain lead-based paint. Building materials containing lead-based paint require proper handling, notification and waste management procedures.

Background Information:

Lead is a metal element in pure form but is found in other chemical compounds used within manufactured and formulated products. Among these are pipe solder, paint and other coatings and water pipes - items commonly found in older buildings and homes.

Lead becomes toxic to the human body even in low levels by chronic over exposure. The exposure may occur by breathing dust, eating dust (on food, tobacco, fingers, or eating paint chips (children)). Lead poisoning affects the brain and central nervous system, especially susceptible are young children. Lead is also known to impact kidney and liver functions.

The EPA/HUD defines lead-based paint as paint or other coatings containing lead equal to or in excess of 0.5% lead by weight or 1.0 mg/cm². The prevalence of lead-based paint in housing built before 1940 is especially high according to research conducted by the U.S. Department of Housing and Urban Development (HUD). After 1940, its use diminished until 1972 when U.S. manufactured housing paint became regulated at 0.5 percent lead by weight and "banned" in 1978; this means that paint could not be manufactured and sold for housing use if it contained lead above the U.S. Consumer Products Safety Commission's (CC) 0.06 percent by weight. The "ban" provided a basis for using the cut-off date of 1978 when disclosing the possibility of lead-containing paint in sales and rentals of housing units.

Any detected lead-level in paint below HUD and the CPSC's criteria remains an environmental concern under the U.S. Occupational Safety and Health Administration's (OSHA) Lead Standard for Construction Workers, 29CFR1926.62 and the HIOSH equivalent, HAR 12-148.1. Communication of lead-levels in paint is required for worker safety, when conducting renovation or demolition, and for construction debris (waste) management.

5.6.4 Arsenic-Containing Substances

VEC did not identify any suspect arsenic-containing building materials or waste materials at the time of the site visit.

Background Information

Arsenic, like several other heavy metals, tends to accumulate in the body. Ingestion of a small dose may seemingly exert no adverse effect at all, while ingestion of multiple small doses could cause death. In lesser amounts, arsenic-containing compounds cause other health problems, like mottling of the skin, skin lesions, nervous disorder, and severe, irreversible liver damage. Arsenic is a human carcinogen, causing skin tumors when ingested and lung tumors when inhaled.

Arsenic-containing compounds were once used as components of some inorganic pesticides. In the 1940s, these pesticides were used to control insects and rodents.

To protect against exposure to high arsenic concentrations, OSHA requires workers to use air-purifying respirators and to wear protective clothing in areas where airborne arsenic compounds are known to exist.

The Resource Conservation and Recovery Act (RCRA), Subtitle C lists arsenic and arsenic-containing compounds as a hazardous waste. Therefore, construction/demolition debris (waste) management should be conducted in accordance with all Federal, State, and Local regulations. This typically requires waste segregation into construction material and dust/debris waste. Sampling using the Toxicity Leach Characteristic Procedure (TCLP) for arsenic is required for hazardous waste determination.

5.6.5 Lead in Drinking Water

The subject property is primarily undeveloped. This section does not apply.

5.6.6 Ecological Resources, Endangered Species, Cultural and Historic Resources, and Wetlands

There are no known wetlands, critical habitats, or threatened and endangered species designated for the subject site.

5.6.7 Indoor Air Quality

The subject property's structures are dirty and in need of good house keeping practices, however, since the pump house is unoccupied and the sign painter's shop is unoccupied and is likely to be demolished, indoor air quality is not a significant concern.

5.6.8 High Voltage Transmission Lines

High voltage transmission lines are located over the western boundary of the subject property. Transmission lines may produce weak to moderate electromagnetic fields (EMF). This concern is not expected to impact the subject site at this time; however, these lines should be addressed during the development of any residential properties.



End of Section.

6.0 FINDINGS, OPINIONS, AND CONCLUSIONS

6.1 Recognized Environmental Conditions

Recognized environmental conditions, as defined by ASTM Standard E1527-00, are the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. **Recognized environmental conditions** are described with regard to (1) the nature and extent of the environmental condition, (2) potential or actual environmental threat, (3) potential for transport (migration) of any environmental conditions, and (4) consideration for further investigation. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

VEC has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Practice E 1527-00 for *the subject property located northeast of the intersection of Honoapiilani Highway and Kaanapali Parkway in Lahaina, Maui, HI, 96761 [TMK Map No. (2)-4-4-06:056]*. Any exceptions to or deletions from, this practice are described in Section 1.4, Limitations and Exceptions, of this report. **This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:**

6.1.1 Database Listings (See Section 4.0 & EDR Report, Appendix B)

Findings/Concerns:

The subject site is not listed. The listed and unmapped nearby sites of the EDR report were reviewed for environmental concerns relative to the subject site.

Opinions and Conclusions:

Based on the current statuses of the nearby listed and unmapped sites, it is unlikely these sites have had a significant environmental impact on the subject property, nor is there any expected impact therefrom. No further investigation regarding these sites is recommended.

6.1.2 Current and Historic Use or Storage of Hazardous and Regulated Substances (See Sections 5.2.1, 5.2.2, 5.3.1, & 5.3.2)

Findings/Concerns:

There is no evidence of any historic or current significant misuse of hazardous or regulated substances on the subject property.

One (1) 55-gallon drum containing a residue of a petroleum-based liquid with characteristics of waste oil was noted. The contents of the drum appear to have slightly impacted the underlying surface soils.

Three (3) 5-gallon buckets (full) containing a petroleum-based product with characteristics of waste oil, were open, however, no evidence of leakage or spill was observed.

One (1) 55-gallon drum and several 5-gallon containers not labeled, containing petroleum-based liquid.

Historically, several activities have been actively occurring on the subject site and adjacent properties for several decades. Sugarcane agriculture, golf course landscaping and plant nursery operations all have been activities that have been associated with the application of pesticides and fertilizers.

Additionally, a sewer treatment plant historically located on the southern adjacent property may have contributed to the degradation of the subsurface soil and groundwater quality underlying this site and possibly the subject site.

Opinions and Conclusions:

The areas of petroleum-impacted soil should be excavated and properly managed as per State and County regulations. Clearance soil testing could be conducted to ensure all contamination has been effectively removed. If the contamination extends to beyond the immediate upper surface soil layers (and the release appears to be greater than 25 gallons), then sampling, State (DOH) notification and documentation should be conducted along with proper waste management. All drums and containers should be properly secured, positioned and labeled to avoid any future release.

VEC has outlined management procedures in Section 5.3.1 that should be followed for storing drums/containers.

While the use of pesticides and herbicides on the subject property and adjacent properties does not necessarily result in adverse impacts to the environmental condition of the site, it is possible (yet unlikely) for residual amounts of these substances to accumulate to concentrations that present a potential threat to human health or the environment. Soil and groundwater sampling and laboratory testing would provide additional information to evaluate potential environmental effects from these agricultural activities. There is, however, no regulatory requirement to conduct this sampling.

Additionally, subsurface soil and groundwater testing could be conducted on the subject site to determine if the sewage treatment plant activities and possible related pollutant leachate plume has impacted the subject site. There is, however, no regulatory requirement to conduct this sampling.

6.2 Other Environmental Concerns

The concerns listed below may not be considered *recognized environmental conditions* by ASTM definition. However, they may be considered regulated under other environmental laws and ordinances and may present a potential liability to the property owner.

6.2.1 Surface Waters and Area Aquifer Protection (See Section 5.5.5)

Findings/Concerns:

Residential development may be planned for the subject site. For any future grubbing and grading and construction activities planned for the site, the property owner should be aware of the potential for contaminants to run off-site and into nearby watercourses or adjacent stormwater drains. Products of concern relating to any future development activity would be earthen material (silt), paints, oils, antifreezes and other fluids from automobile or on-site machinery, or leaks from on-site stocked items.

Opinions and Conclusions:

Construction managers and developers of any future on-site development activities should consider implementing conservative, proactive environmental policies during the development-planning phase.

Future land clearing projects will likely require a County of Maui grading/grubbing permit and if the size of a project creates greater than one (1) acre of soil disturbance, the developer will also require a National Pollution Discharge Elimination System (NPDES) General Permit (State of Hawaii, Department of Health, Clean Water Branch).

6.2.2 Solid Waste Management (See Section 5.3.3 & 5.5.4)

Findings/Concerns:

A significant amount of dumping (landscaping, construction, miscellaneous debris, and household waste) is evident on the subject property. Due to some densely vegetated areas and debris stockpiles located on the subject property, the entire subject site was not visibly inspected.

Opinions and Conclusions:

Any waste disposal should be in a permitted solid waste landfill or recycled in a manner that complies with all local, state, and federal regulations as applicable to the specific waste type.

It is important to note that if additional clearing of the property commences and significant amounts of construction debris or unidentifiable substances (containers) are discovered, proper waste identification, testing and applicable waste handling/disposal procedures are followed in accordance with federal, state, and local regulations.

Ensure that proper container management is utilized for all hazardous/regulated materials.

6.2.3 Management of Building Materials (See Section 5.6.1)

Findings/Concerns:

The subject site's building structure may undergo demolition/renovation in the near future. Certain building materials may pose a concern to the subject property owner.

Asbestos – Suspect materials should be presumed ACM until further sampling and laboratory analysis is conducted. An asbestos sampling survey should be conducted prior to any demolition activities. Removal of asbestos-containing materials is required prior to demolition activity. State and federal rules have established standards for the use and control of ACM. (See also Section 5.6.1).

PCBs- The substation contains three (3) pole mounted type transformers and two (2) pad mounted transformers. No identification number was visible, however, due to the age of the site, it is likely PCB containing. The EPA aggressively enforces regulations concerning PCB manufacturing, use, distribution, release and disposal under the Toxic Substance Control Act (TSCA). This federal agency extensively regulates the use, servicing, and disposal of PCBs in electrical equipment by enforcing marking, notification, inspection, and record keeping requirements. (See also Section 5.3.7)

Lead Paint- The interior and exterior painted surfaces of the sign painter's workshop could contain paint with measurable levels of lead. A significant amount of the paint is in poor condition (flaking).

VEC did not identify significant construction materials/debris that might contain lead-based paint. Though unlikely, if significant amounts of building materials are uncovered during future land clearing activities, proper waste identification and sampling should be conducted on suspect materials that could contain lead-based paint.

Opinions and Conclusions:

All worker safety and waste management concerns regarding the above-noted materials should be thoroughly addressed and undertaken during any future demolition or renovation activities.



End of Section

The conclusions stated above should not be construed to mean that any regulatory agency would have the same opinion as this author, nor is any implication proposed therefrom. The results of this environmental assessment are intended for general reference purposes only and are not intended as legal advice. The advice of legal counsel should be sought in regard to individual facts, circumstances and interpretation of environmental liability.

7.0 REFERENCES

7.1 Published References

1. American Standard of Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E1527-00, 2000.
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4. Bartholomew, Gail, "Maui Remembers: A Local History", 1994, Mutual Publishing.
5. County of Maui, Real Property Tax Division, Historical Records for TMK: (2) 4-4-006:056, Maui. June 27, 2003.
6. Hawaii Administrative Rules, Title 11, Department of Health, Chapter 58.1, Solid Waste Management Control.
7. Maui Civil Defense Agency, "Tsunami Evacuation Maps".
8. State of Hawaii, Department of Health, Solid and Hazardous Waste Branch, Underground Storage Tank Section, List of Leaking Underground Storage Tank Release Sites, January 2003.
9. State of Hawaii, Department of Health, Solid and Hazardous Waste Branch, Underground Storage Tank Section, List of Underground Storage Tank Facilities, January 2003.
10. State of Hawaii, Department of Health, Office of Hazard Evaluation and Emergency Response, List of HEPCRA Facilities, October 2001.
11. State of Hawaii, Department of Health, Office of Hazard Evaluation and Emergency Response, List of Release Notifications, September 2000.
12. State of Hawaii, Department of Health, Office of Hazard Evaluation and Emergency Response, List of Sites List, July 2001.
13. State of Hawaii, Department of Land and Natural Resources, Registered Wells and Dry Wells, 1999.
14. State of Hawaii, Department of Land and Natural Resources, "State of Hawaii Water Quality Plan and Groundwater Map", June 1990, Revised December 1991.
15. U.S. Department of Agriculture, Soil Conservation Service, "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii", 1972.
16. U.S. Environmental Protection Agency, Office of Air and Radiation et al., Indoor Air Facts No. 4 (revised) Sick Building Syndrome, April 1991.
17. U.S. Environmental Protection Agency, Building Air Quality: A Guide for Building Owners and Facility Managers, 1991.

7.2 Map and Other References

1. Environmental Data Resources, Inc., "The EDR Radius Map Report", June 12, 2003.
2. Federal Emergency Management Agency, "Flood Insurance Rate Map", # 150003 0151B, June 1, 1981.
3. R.M. Towill Corporation, Aerial Photographs, Honolulu, Hawaii.
4. Air Survey Hawaii, Inc. Aerial Photographs, Honolulu, Hawaii.
5. Sanborn Maps (Not available for this area).
6. U.S. Geological Survey, "Napili Quadrangle", 7.5 Minute Series, Topographic Map, 1983.

7.3 Record of Personal Communications

Date	Interviewee	Title & Organization	Address	Phone Number
7/16/03	Mr. G. Robert Johnston	Vice-President, Landtec, Inc.	2530 Kekaa Drive, Suite C-1 Kaanapali, HI 96761	(808) 661-3232
7/16/03	Mr. Lloyd E. Akiona	Superintendent, Hawaii Water Service Company	P.O. Box 13220 Lahaina, HI 96761	(808) 661-4510
7/17/03	Dr. Michael F. Dega	Senior Archaeologist, Scientific Consultant Services, Inc.	711 Kapiolani Blvd., Suite 1475, Honolulu, HI 96813	(808) 597-1182
7/17/03	Mr. John Zachman	Island Operations Manager, Scientific Consultant Services, Inc.	P.O. Box 790519 Paia, HI 96779	(808) 597-1182
7/21/03	Mr. Mike Cergota	Landscape Manager, Maui Marriott	100 Nohea Kai Dr. Kaanapali, HI 96761	(808) 667-1200
7/22/03	Mr. Tim Canute	Kaanapali Golf Course Maintenance	2290 Kaanapali Pkwy. Kaanapali, HI 96761	(808) 661-3691



End of Section

Appendix A:

Maps, Plans, and Photographs

FIGURE 1: REGIONAL SETTING MAP

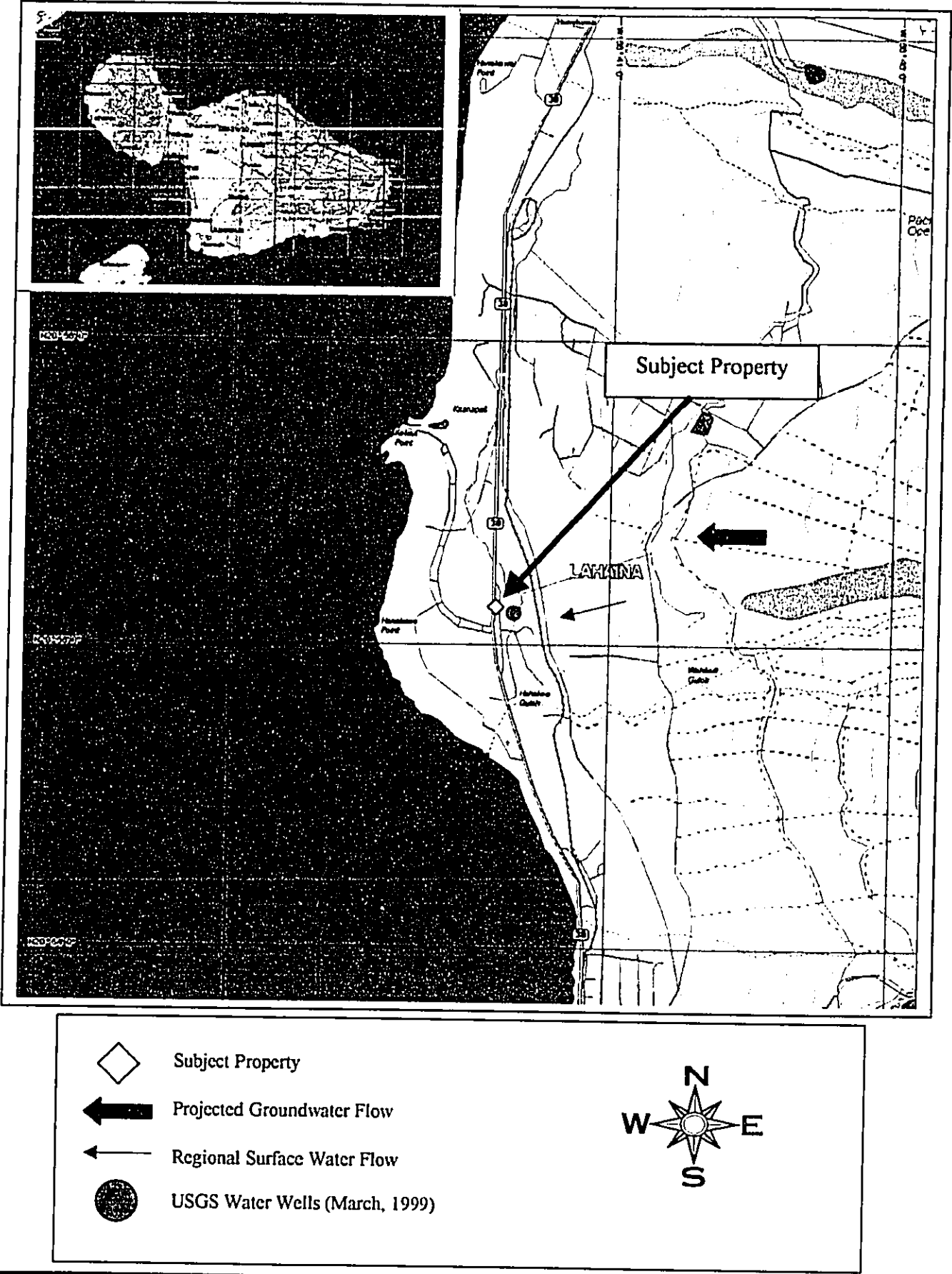
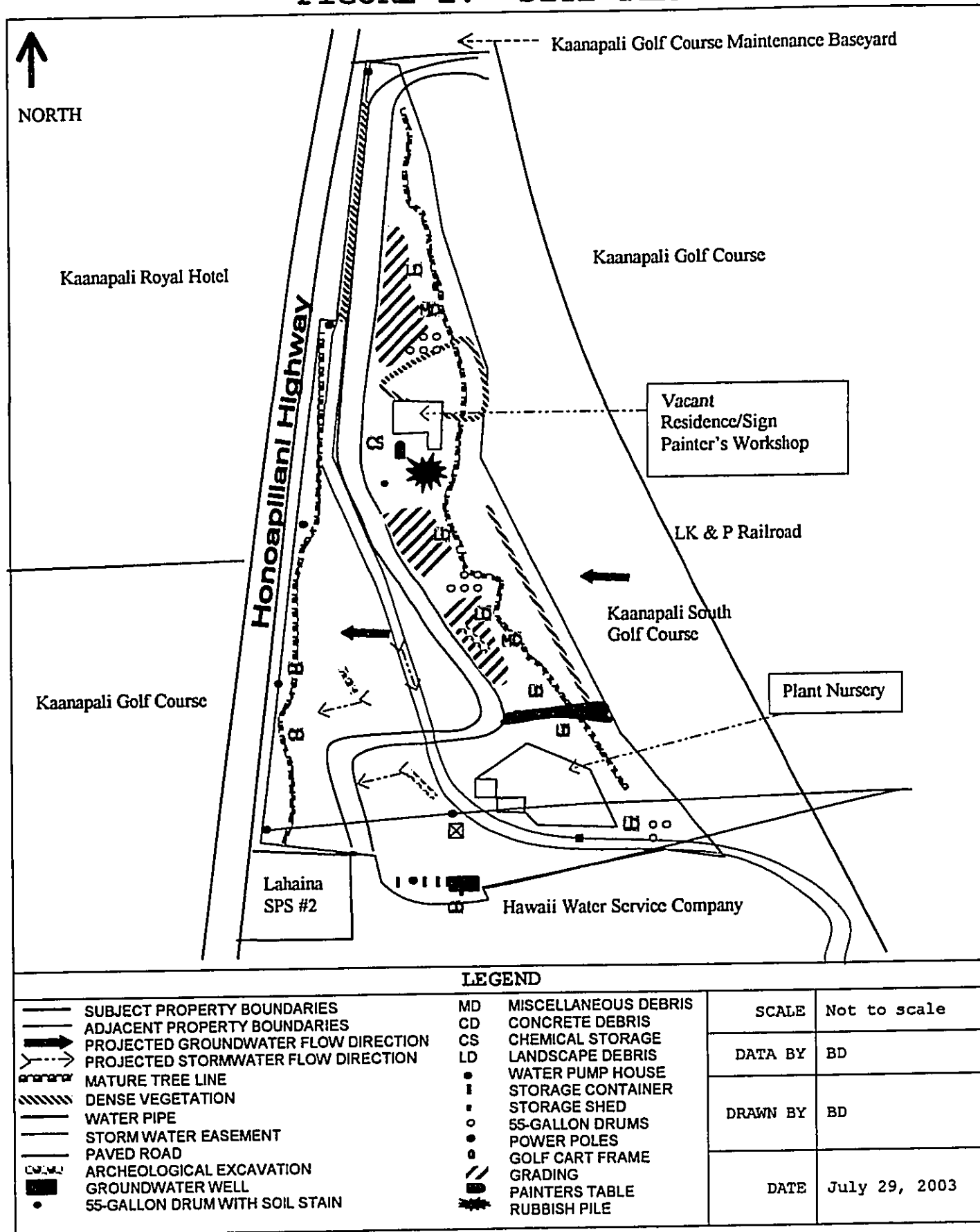


FIGURE 2: SITE PLAN



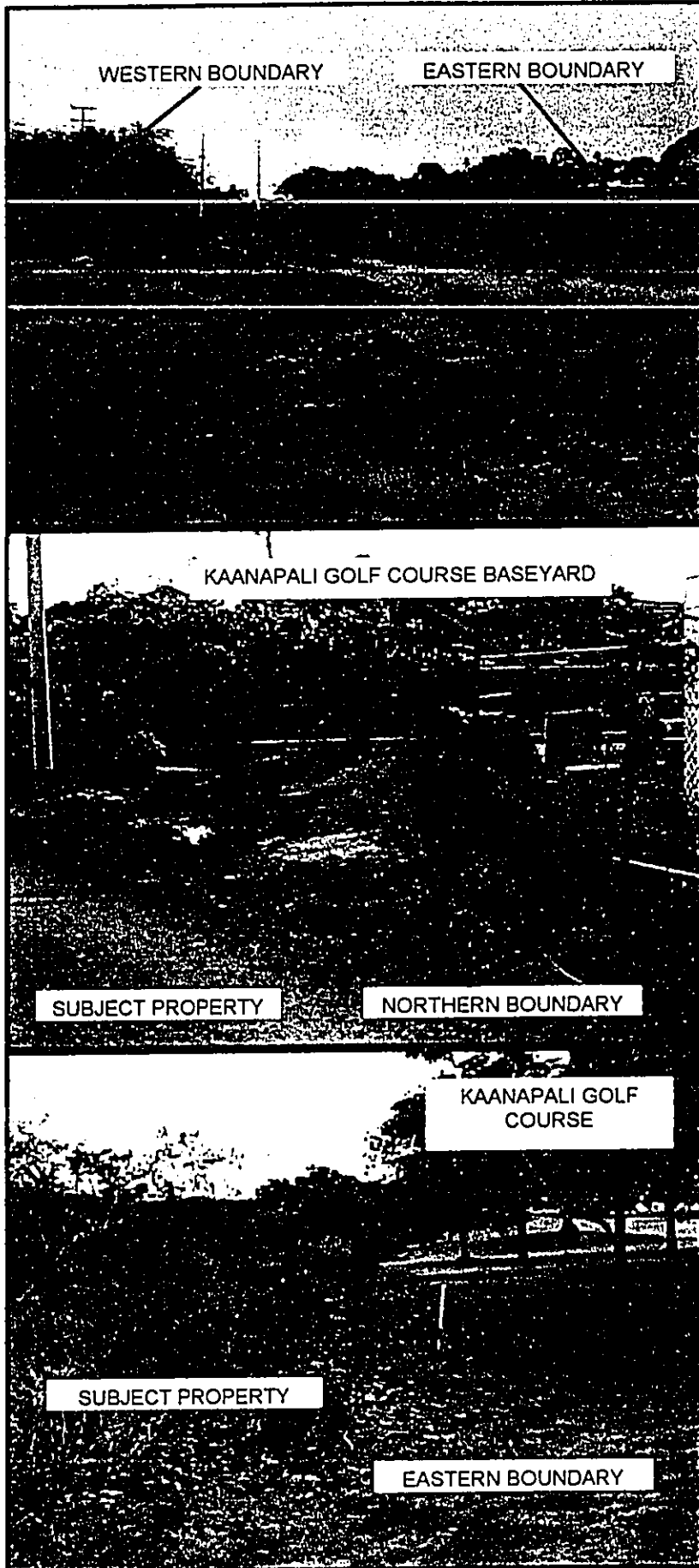


PHOTO 1

Northerly view of the property from the southern portion of the subject site.

PHOTO 2

Westerly view along the subject property's northern boundary. The photograph is taken from the northeastern corner of the subject property.

PHOTO 3

Northerly view along the subject property's eastern boundary. The Kaanapali Golf Course is located upgradient of the subject site.

RECEIVED AS FOLLOW

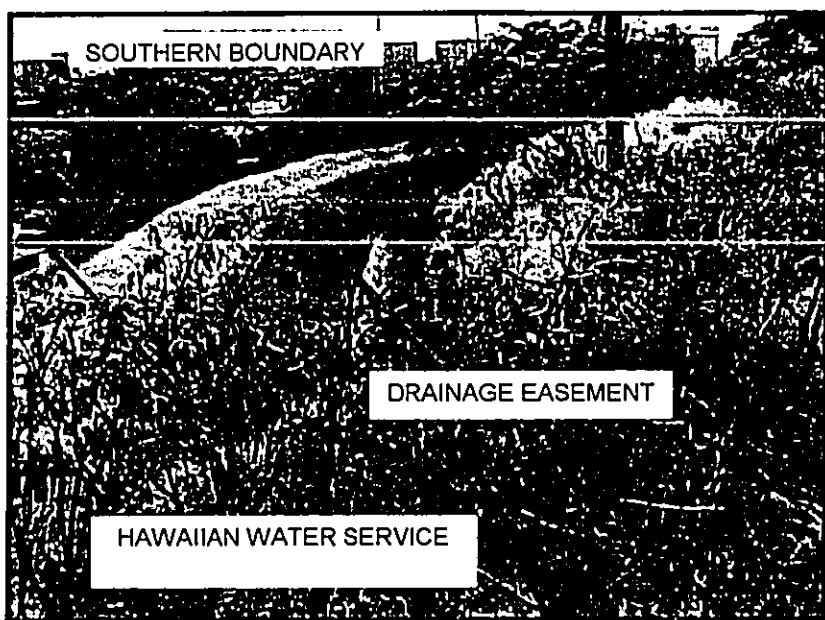


PHOTO 4

Westerly view of the subject property's southern boundary. Photo is taken from the southeast corner of the subject property.

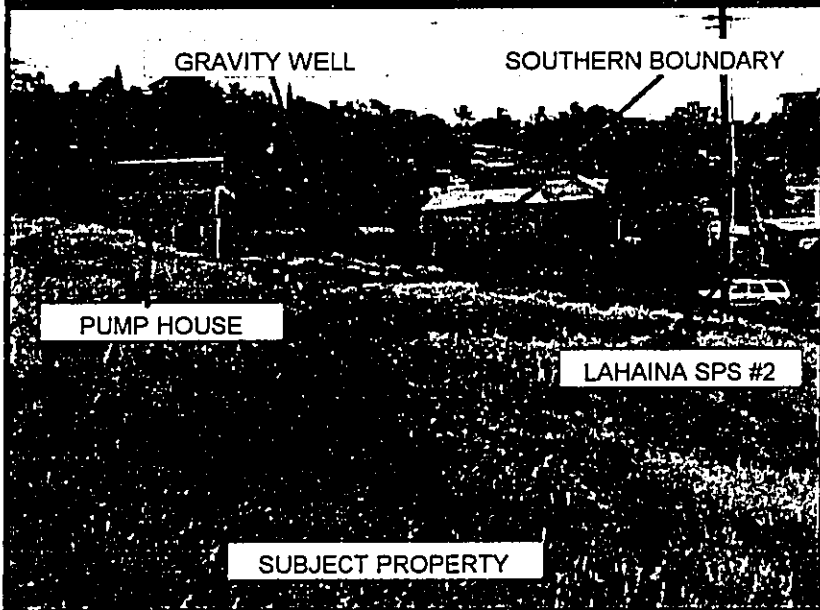


PHOTO 5

Southerly view of the subject property's southern boundary.

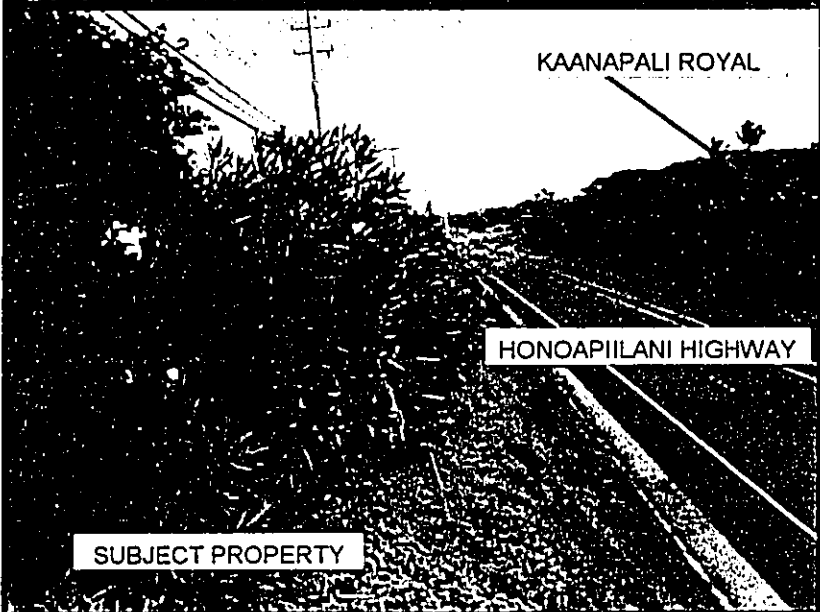


PHOTO 6

Southerly view along the subject property's western boundary.

RECEIVED AS FOLLOWS

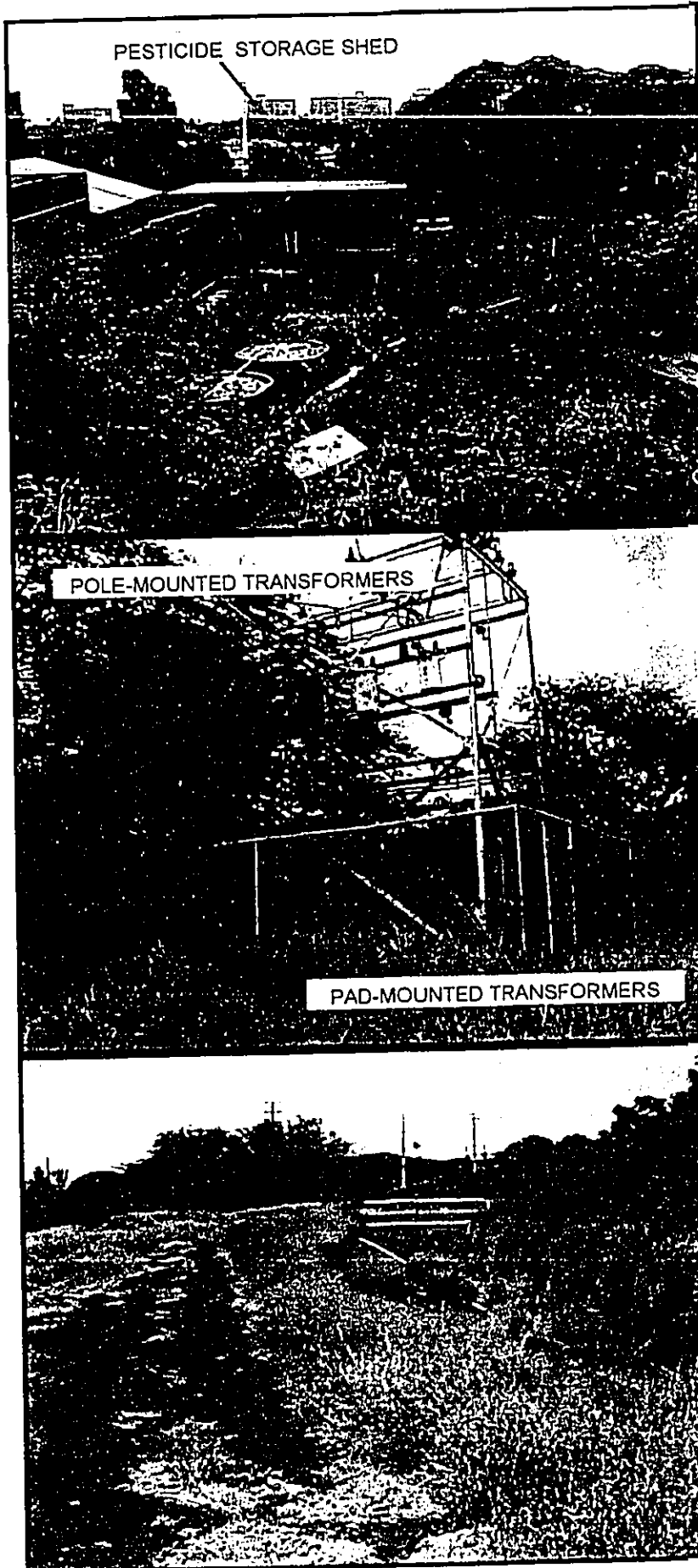


PHOTO 7

View of the plant nursery located on-site (leased by Maui Marriott) from the eastern fence line of the nursery. Limited pesticide and fertilizer mixing takes place in front of the storage shed.

PHOTO 8

Distribution step-down substation on the southern portion of the subject property. These transformers may be PCB-containing.

PHOTO 9

Easement used for storm water management traverses through the property from the northwestern corner along the western boundary extending through the middle of the property to the southeastern boundary of the subject property. View is northerly.

RECEIVED AS FOLLOWS



PHOTO 10

Vacant residential structure/sign painter's workshop located on-site. Significant refuse dumping and inappropriate waste oil management was noted in this area.

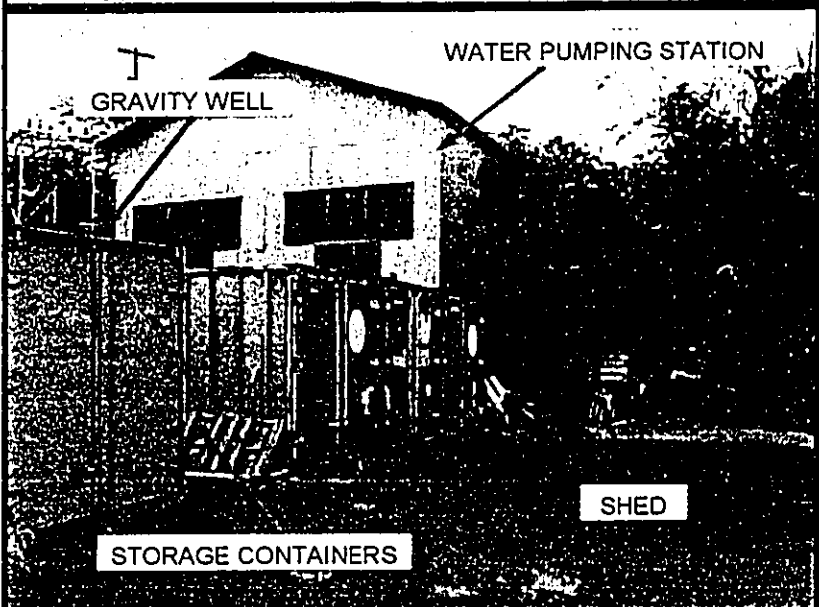


PHOTO 11

Water pumping station located on the subject property's southern boundary. Four (4) storage containers and one (1) shed were locked at the time of the site visit.



PHOTO 12

Effective storage of herbicides and fertilizers in the plant nursery.

RECEIVED AS FOLLOWS

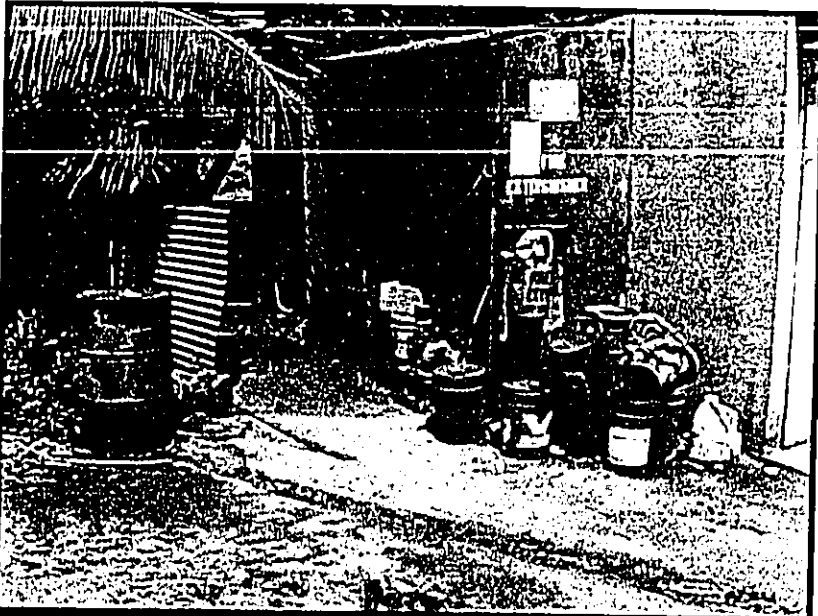


PHOTO 13

Improperly stored containers of unknown petroleum-based liquid on or immediately adjacent to the subject property's southern boundary. Some of the containers were labeled, "Chevron Turbine Oil ISO 68". No sign of related soil staining was noted.



PHOTO 14

One (1) fifty-five (55) gallon drum with an unknown petroleum based product located near the on-site residential structure. Limited related soil staining was noted.

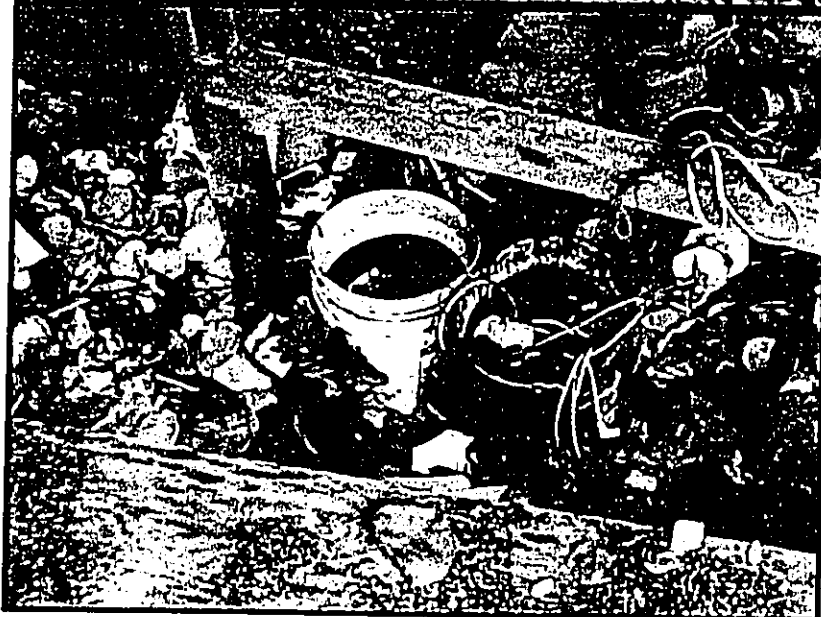


PHOTO 15

Two (2) five (5) gallon containers of an unknown petroleum-based product (likely waste oil). These containers are located near the on-site vacant residential structure. No sign of related soil staining was noted.

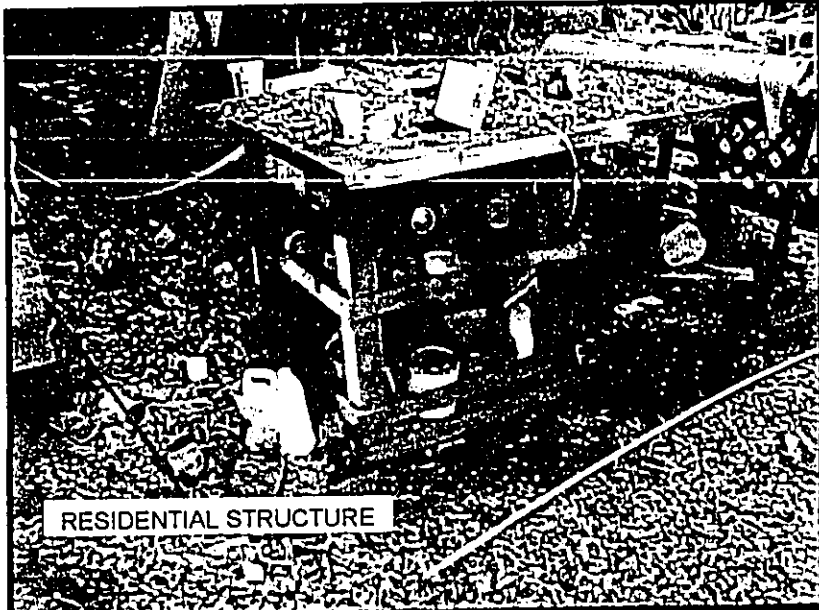


PHOTO 16

Painter's work table located on-site adjacent to the vacant residential structure. The abandoned containers had varying amounts and types of liquid substances. The management of these containers was inadequate.

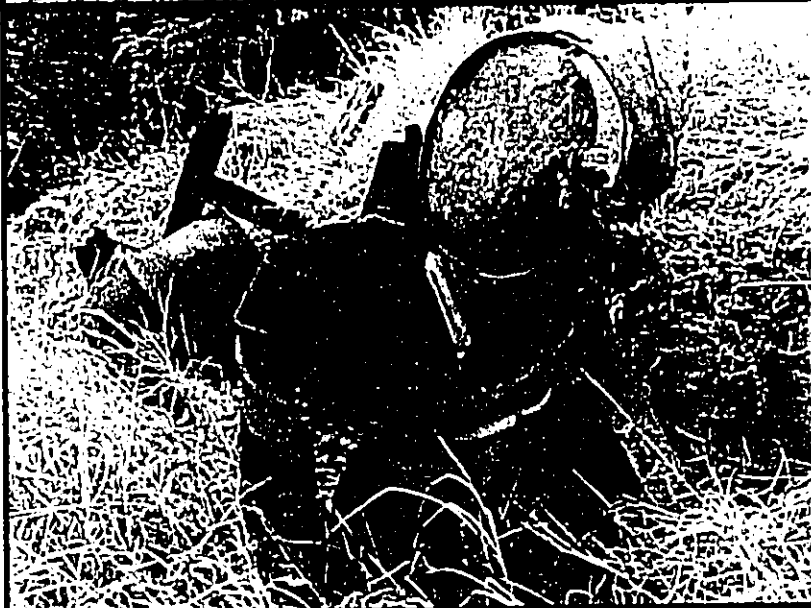


PHOTO 17

Metal debris (cut 55-gallon drums) located in the southeast portion of the subject property. Other metal 55-gallon drums similar to these were identified in other areas on the subject site (see Figure 2). No signs of suspect soil staining were noted at these locations.



PHOTO 18

Landscape debris piles located on-site. The subject site's eastern boundary has been historically used for dumping of landscape debris. Grubbing operations pushed debris into piles six (6) to eight (8) feet in height and approximately 200 feet in length. No regulated materials were noted.

RECEIVED AS FOLLOWS

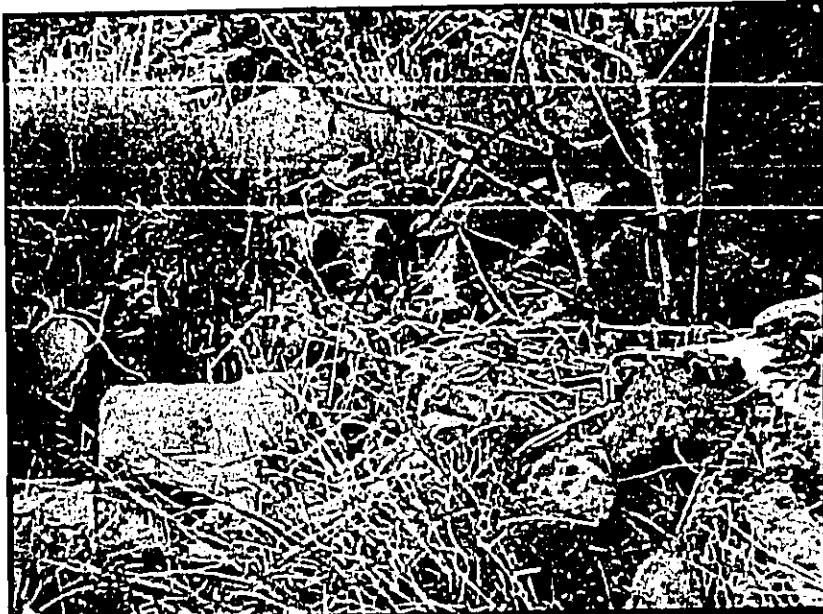


PHOTO 19

Concrete debris located in the central portion of the subject property. This debris may have originated from structures previously located on-site. No regulated materials were noted.



PHOTO 20

Asphalt and concrete debris located on western boundary of the subject property.



PHOTO 21

Miscellaneous debris dumping located in the northeastern portion of subject property. Regulated materials (tires) were identified. Golf carts and truck bed frames were also noted.

RECEIVED AS FOLLOWS

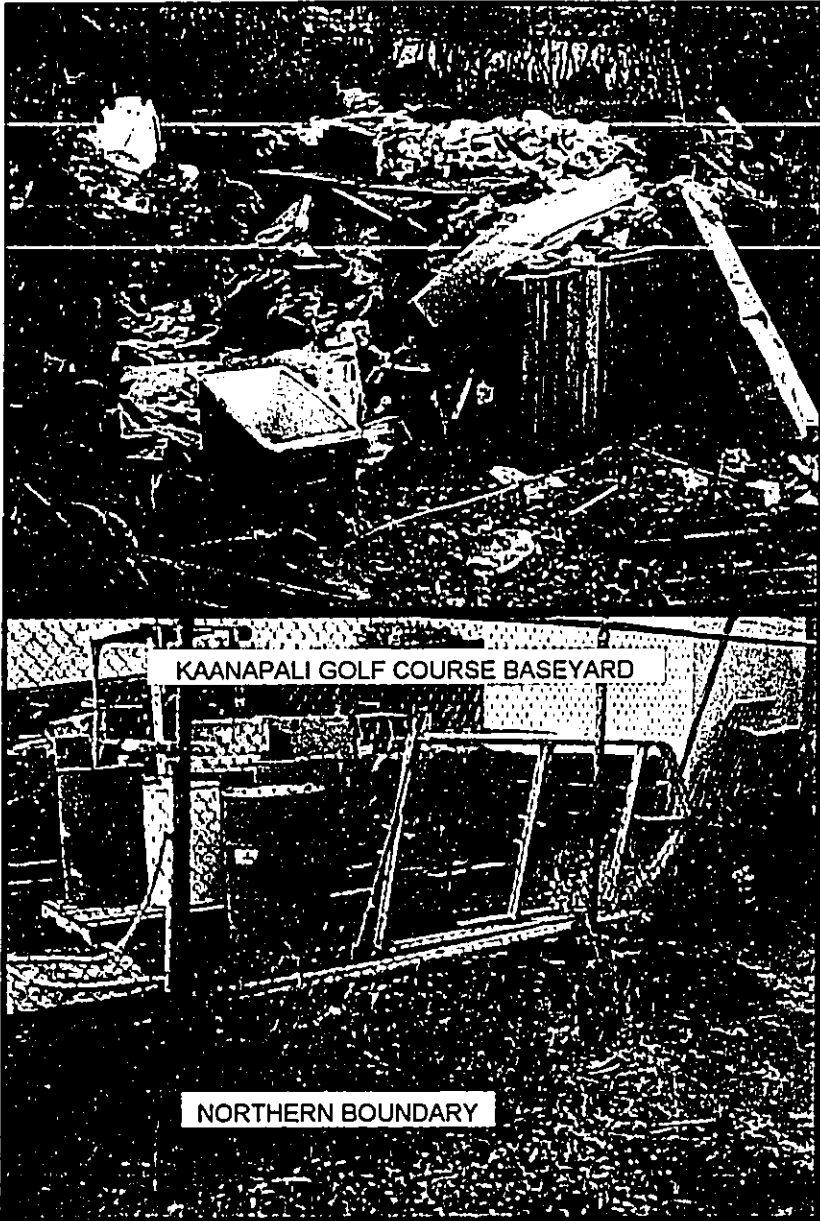


PHOTO 22

Refuse dumping located adjacent to the on-site residential structure/sign workshop. Several empty solvent containers and tires were noted. VEC cannot confirm the contents of the refuse pile.

PHOTO 23

Northerly view of the adjacent property's bulk storage of pesticides, fertilizers and petroleum-based products. No sign of contaminant migration onto the subject site was evident.

Appendix B:

Regulatory Records Documentation Site Specific Documentation



EDR FieldCheck™ Report

**Kaanapali Development Corp.
Kaanapali
Lahaina, HI 96761**

Inquiry Number: 1014366.1s

July 17, 2003

**The Source
For Environmental
Risk Management
Data**

**3530 Post Road
Southport, Connecticut 06890**

Nationwide Customer Service

**Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com**

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GEOCHECK ADDENDUM

GeoCheck - Not Requested

**Thank you for your business.
Please contact EDR at 1-800-352-0050**

Important Note: Relocation of Customer (CA) Report

This is The EDR FieldCheck (TM) Report. Through its continuing emphasis in online technological advancements, EDR has developed the FieldCheck (TM) system, which enables EDR's customers to make certain online modifications to the maps and text contained in EDR Radius Map Reports. With FieldCheck (TM), an EDR customer can relocate and/or delete plotted sites and/or plot or delete orphan sites that would otherwise appear or be noted with an EDR Radius Map Report. Such modifications may be based on site visits, independent data verification and/or other actions taken or decisions made by EDR's customer. As a result, the maps and text contained in The EDR FieldCheck (TM) Report that you receive may have been so modified. Please note: EDR has not taken any action to verify any such modifications, and this report and the findings set forth herein must be read in light of this fact. VUICH ENVIRONMENTAL should be contacted for information concerning all such modifications.

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EXECUTIVE SUMMARY

At the request of VUICH ENVIRONMENTAL, a search of the environmental records covering the area detailed herein was conducted by Environmental Data Resources, Inc. (EDR). This report was derived from the results of such search, which, as conducted by EDR, met the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances were per ASTM standard or custom distances requested by the user.

NOTE: ALL MAPS AND TEXT INCLUDED HEREIN MAY HAVE BEEN MODIFIED BY VUICH ENVIRONMENTAL BASED ON SITE VISITS, INDEPENDENT DATA VERIFICATION AND/OR OTHER ACTIONS TAKEN OR DECISIONS MADE BY VUICH ENVIRONMENTAL. EDR HAS NOT TAKEN ANY ACTION TO VERIFY ANY OF SUCH MODIFICATIONS, AND THIS REPORT AND THE FINDINGS SET FORTH HEREIN MUST BE READ IN LIGHT OF THIS FACT. VUICH ENVIRONMENTAL SHOULD BE CONTACTED FOR INFORMATION CONCERNING ALL SUCH MODIFICATIONS.

TARGET PROPERTY INFORMATION

ADDRESS

KAANAPALI
LAHAINA, HI 96761

COORDINATES

Latitude (North):	20.921100 - 20° 55' 16.0"
Longitude (West):	156.689000 - 156° 41' 20.4"
Universal Transverse Mercator:	Zone 4
UTM X (Meters):	740358.1
UTM Y (Meters):	2315010.5
Elevation:	63 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	N/A
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were found in an online review and analysis by VUICH ENVIRONMENTAL of EDR's search of available ("reasonably ascertainable") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL.....	National Priority List
Proposed NPL.....	Proposed National Priority List Sites
CERCLIS.....	Comprehensive Environmental Response, Compensation, and Liability Information System

EXECUTIVE SUMMARY

CERC-NFRAP.....	CERCLIS No Further Remedial Action Planned
CORRACTS.....	Corrective Action Report
RCRIS-TSD.....	Resource Conservation and Recovery Information System
RCRIS-LQG.....	Resource Conservation and Recovery Information System
RCRIS-SQG.....	Resource Conservation and Recovery Information System
ERNS.....	Emergency Response Notification System

STATE ASTM STANDARD

SWF/LF.....	Permitted Landfills in the State of Hawaii
-------------	--

FEDERAL ASTM SUPPLEMENTAL

CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
Delisted NPL.....	National Priority List Deletions
FINDS.....	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS.....	Hazardous Materials Information Reporting System
MLTS.....	Material Licensing Tracking System
MINES.....	Mines Master Index File
NPL Liens.....	Federal Superfund Liens
PADS.....	PCB Activity Database System
DOD.....	Department of Defense Sites
RAATS.....	RCRA Administrative Action Tracking System
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
SSTS.....	Section 7 Tracking Systems
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

SPILLS.....	Release Notifications
-------------	-----------------------

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas.....	Former Manufactured Gas (Coal Gas) Sites
---------------	--

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in *bold italics* are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STATE ASTM STANDARD

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

An online review and analysis by VUICH ENVIRONMENTAL of the SHWS list, as provided by EDR, and dated 07/12/2001 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
ROYAL LAHAINA RESORT	2780 KEKAA DR	1/2 - 1 N	4	6

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

An online review and analysis by VUICH ENVIRONMENTAL of the LUST list, as provided by EDR, and dated 01/01/2003 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
LAHAINA SPS #2 (HONOAPIILANI)	2010 HONOAPIILANI HWY /	1/8 - 1/4 SSW	A1	5

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

An online review and analysis by VUICH ENVIRONMENTAL of the UST list, as provided by EDR, and dated 01/01/2003 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
AMFAC MAINTENANCE BUILDING	HONOAPIILANI HWY	1/8 - 1/4 NNW	3	5
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
LAHAINA SPS #2 (HONOAPIILANI)	2010 HONOAPIILANI HWY /	1/8 - 1/4 SSW	A2	5

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
LAHAINA WASTE WATER PUMP STATION #4	SHWS
KALAUAPAPA LANDFILL	SWF/LF, SHWS
BEN FRANKLIN STORES PROPERTY	SHWS
LANAI LANDFILL (LF-0056-98)	SWF/LF, SHWS
HAWAIIAN COMMERCIAL & SUGAR CO.,	SWF/LF
KAKAMAULA LANDFILL	SWF/LF
KALUAKOI LANDFILL	SWF/LF
MAUNALOA LANDFILL	SWF/LF
MOLOKAI LANDFILL (NAIWA LF LF-0030-	SWF/LF, SPILLS
CENTRAL MAUI LF, PHASE I&II LF-0034	SWF/LF
MAALEA C&D LF	SWF/LF
CENTRAL MAUI LF PHASE IV	SWF/LF
PAPILLION HAWAIIAN HELICOPTERS HELI	LUST, UST
NAPILI #4 P.S.	UST
NAPILI #1 P.S. (HONOKOWA)	UST
NAPILI #3 P.S. (KAEA POINT)	UST
NAPILI #2 P.S. (KAPUA)	UST
LAHAINA SPS#1 (HONOAPIILANI)	UST
KAANAPALI WATER CORP. P-4	UST
NAPILI CENTRAL OFFICE	UST
MAUI PINEAPPLE CO HONOLUA DIV	RCRIS-SQG, FINDS
RAILROADS OF HAWAII INC	RCRIS-SQG, FINDS

EDR FieldCheck™ Report

**Kaanapali Development Corp.
Kaanapali
Lahaina, HI 96761**

Inquiry Number: 1014366.1s

July 17, 2003

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: Data
: Resources, Inc.

***The Source
For Environmental
Risk Management
Data***

3530 Post Road
Southport, Connecticut 06890

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GEOCHECK ADDENDUM

GeoCheck - Not Requested

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EXECUTIVE SUMMARY

At the request of VUICH ENVIRONMENTAL, a search of the environmental records covering the area detailed herein was conducted by Environmental Data Resources, Inc. (EDR). This report was derived from the results of such search, which, as conducted by EDR, met the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances were per ASTM standard or custom distances requested by the user.

NOTE: ALL MAPS AND TEXT INCLUDED HEREIN MAY HAVE BEEN MODIFIED BY VUICH ENVIRONMENTAL BASED ON SITE VISITS, INDEPENDENT DATA VERIFICATION AND/OR OTHER ACTIONS TAKEN OR DECISIONS MADE BY VUICH ENVIRONMENTAL. EDR HAS NOT TAKEN ANY ACTION TO VERIFY ANY OF SUCH MODIFICATIONS, AND THIS REPORT AND THE FINDINGS SET FORTH HEREIN MUST BE READ IN LIGHT OF THIS FACT. VUICH ENVIRONMENTAL SHOULD BE CONTACTED FOR INFORMATION CONCERNING ALL SUCH MODIFICATIONS.

TARGET PROPERTY INFORMATION

ADDRESS

KAANAPALI
LAHAINA, HI 96761

COORDINATES

Latitude (North): 20.921100 - 20° 55' 16.0"
Longitude (West): 156.689000 - 156° 41' 20.4"
Universal Transverse Mercator: Zone 4
UTM X (Meters): 740358.1
UTM Y (Meters): 2315010.5
Elevation: 63 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: N/A
Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were found in an online review and analysis by VUICH ENVIRONMENTAL of EDR's search of available ("reasonably ascertainable") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System

EXECUTIVE SUMMARY

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System
RCRIS-SQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

SWF/LF..... Permitted Landfills in the State of Hawaii

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
Delisted NPL..... National Priority List Deletions
FINDS..... Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Liens..... Federal Superfund Liens
PADS..... PCB Activity Database System
DOD..... Department of Defense Sites
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
SSTS..... Section 7 Tracking Systems
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

SPILLS..... Release Notifications

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in *bold italics* are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STATE ASTM STANDARD

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

An online review and analysis by VUICH ENVIRONMENTAL of the SHWS list, as provided by EDR, and dated 07/12/2001 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
ROYAL LAHAINA RESORT	2780 KEKAA DR	1/2 - 1 N	4	6

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

An online review and analysis by VUICH ENVIRONMENTAL of the LUST list, as provided by EDR, and dated 01/01/2003 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
LAHAINA SPS #2 (HONOAPIILANI)	2010 HONOAPIILANI HWY /	1/8 - 1/4 SSW	A1	5

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

An online review and analysis by VUICH ENVIRONMENTAL of the UST list, as provided by EDR, and dated 01/01/2003 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
AMFAC MAINTENANCE BUILDING	HONOAPIILANI HWY	1/8 - 1/4 NNW	3	5

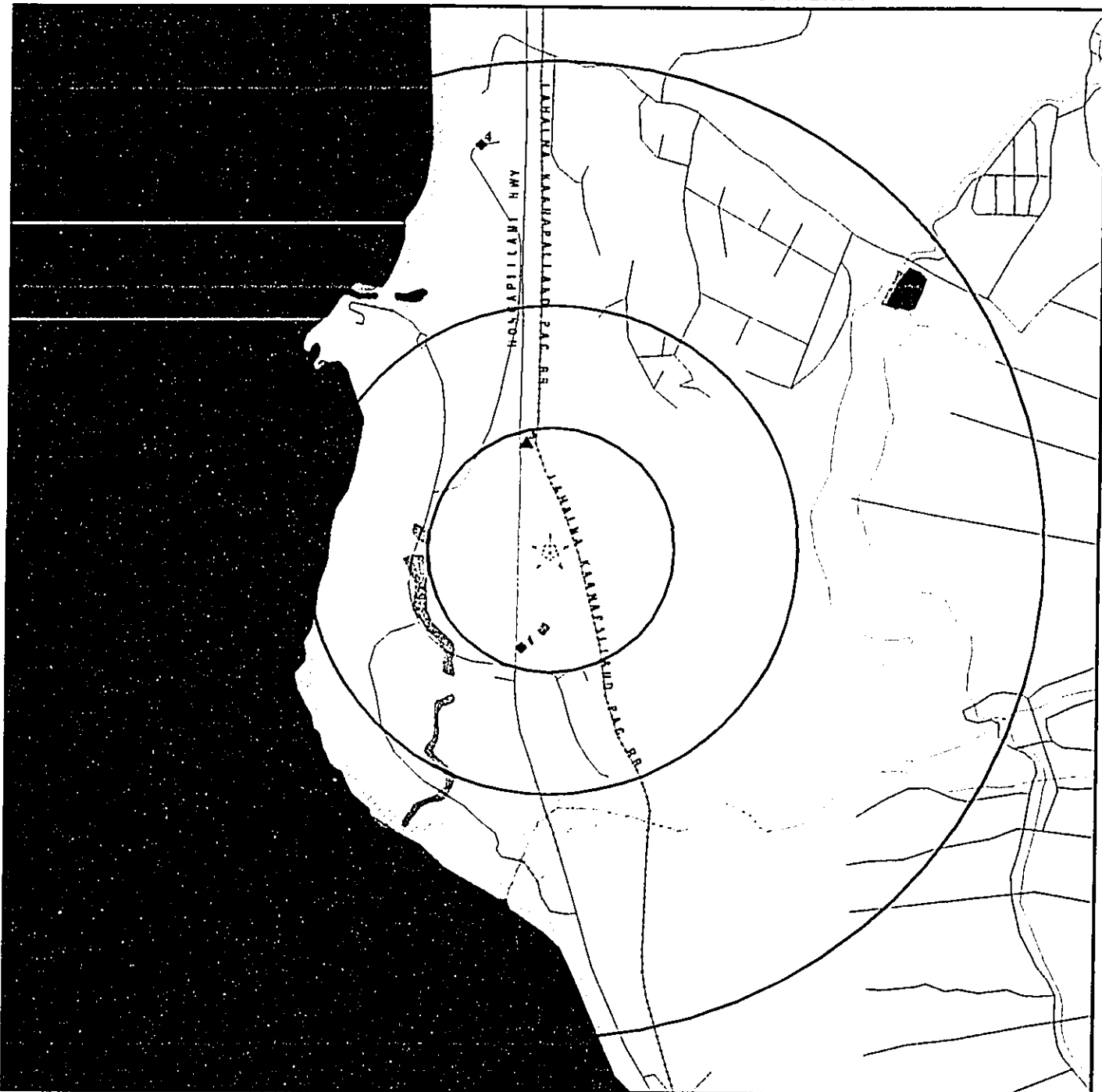
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
LAHAINA SPS #2 (HONOAPIILANI)	2010 HONOAPIILANI HWY /	1/8 - 1/4 SSW	A2	5

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

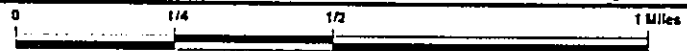
<u>Site Name</u>	<u>Database(s)</u>
LAHAINA WASTE WATER PUMP STATION #4	SHWS
KALAUPAPA LANDFILL	SWF/LF, SHWS
BEN FRANKLIN STORES PROPERTY	SHWS
LANAI LANDFILL (LF-0056-98)	SWF/LF, SHWS
HAWAIIAN COMMERCIAL & SUGAR CO.,	SWF/LF
KAKAMAULA LANDFILL	SWF/LF
KALUAKOI LANDFILL	SWF/LF
MAUNALOA LANDFILL	SWF/LF
MOLOKAI LANDFILL (NAIWA LF LF-0030-	SWF/LF, SPILLS
CENTRAL MAUI LF, PHASE I&II LF-0034	SWF/LF
MAALEA C&D LF	SWF/LF
CENTRAL MAUI LF PHASE IV	SWF/LF
PAPILLION HAWAIIAN HELICOPTERS HELI	LUST, UST
NAPILI #4 P.S.	UST
NAPILI #1 P.S. (HONOKOWA)	UST
NAPILI #3 P.S. (KAEA POINT)	UST
NAPILI #2 P.S. (KAPUA)	UST
LAHAINA SPS#1 (HONOAPIILANI)	UST
KAANAPALI WATER CORP. P-4	UST
NAPILI CENTRAL OFFICE	UST
MAUI PINEAPPLE CO HONOLUA DIV	RCRIS-SQG, FINDS
RAILROADS OF HAWAII INC	RCRIS-SQG, FINDS

OVERVIEW MAP - 1014366.1s - Vuich Environmental



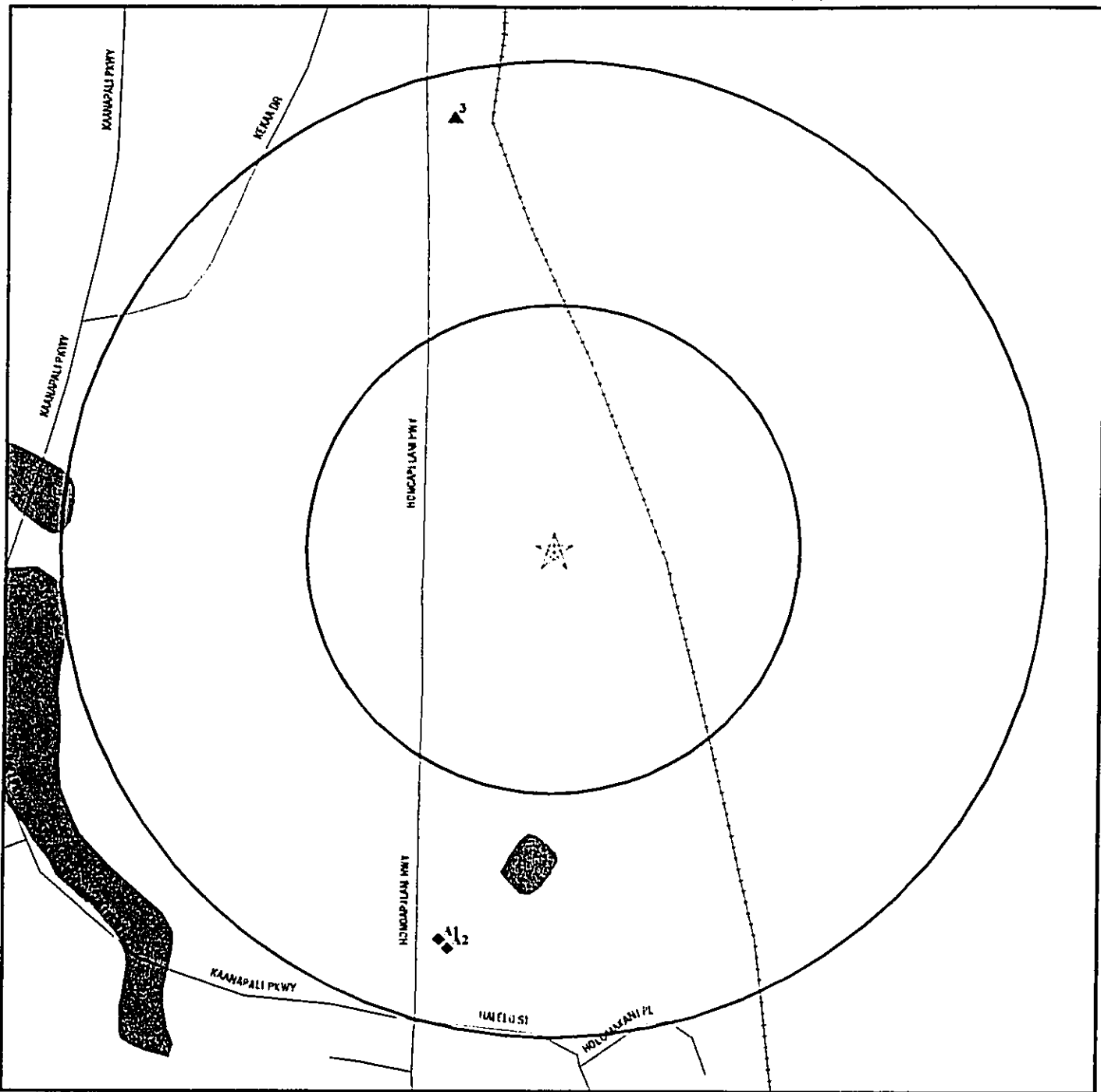
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands



TARGET PROPERTY:	Kaanapali Development Corp.	CUSTOMER:	Vuich Environmental
ADDRESS:	Kaanapali	CONTACT:	Massy Cashen
CITY/STATE/ZIP:	Lahaina HI 96761	INQUIRY #:	1014366.1s
LAT/LONG:	20.9211 / 156.6890	DATE:	July 17, 2003 7:24 pm

DETAIL MAP - 1014366.1s - Vuich Environmental



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- Sensitive Receptors
- ▨ National Priority List Sites
- ▩ Landfill Sites
- ▤ Dept. Defense Sites

- Oil & Gas pipelines
- ▨ 100-year flood zone
- ▩ 500-year flood zone
- ▤ Federal Wetlands

TARGET PROPERTY: Kaanapali Development Corp.
 ADDRESS: Kaanapali
 CITY/STATE/ZIP: Lahaina HI 96761
 LAT/LONG: 20.9211 / 155.6890

CUSTOMER: Vuich Environmental
 CONTACT: Massy Cashen
 INQUIRY #: 1014366.1s
 DATE: July 17, 2003 7:24 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL ASTM STANDARD</u>								
	NPL	1.000	0	0	0	0	NR	0
	Proposed NPL	1.000	0	0	0	0	NR	0
	CERCLIS	0.500	0	0	0	NR	NR	0
	CERC-NFRAP	0.250	0	0	NR	NR	NR	0
	CORRACTS	1.000	0	0	0	0	NR	0
	RCRIS-TSD	0.500	0	0	0	NR	NR	0
	RCRIS Lg. Quan. Gen.	0.250	0	0	NR	NR	NR	0
	RCRIS Sm. Quan. Gen.	0.250	0	0	NR	NR	NR	0
	ERNS	TP	NR	NR	NR	NR	NR	0
<u>STATE ASTM STANDARD</u>								
	SHWS	1.000	0	0	0	1	NR	1
	State Landfill	0.500	0	0	0	NR	NR	0
	LUST	0.500	0	1	0	NR	NR	1
	UST	0.250	0	2	NR	NR	NR	2
<u>FEDERAL ASTM SUPPLEMENTAL</u>								
	CONSENT	1.000	0	0	0	0	NR	0
	ROD	1.000	0	0	0	0	NR	0
	Delisted NPL	1.000	0	0	0	0	NR	0
	FINDS	TP	NR	NR	NR	NR	NR	0
	HMIRS	TP	NR	NR	NR	NR	NR	0
	MLTS	TP	NR	NR	NR	NR	NR	0
	MINES	0.250	0	0	NR	NR	NR	0
	NPL Liens	TP	NR	NR	NR	NR	NR	0
	PADS	TP	NR	NR	NR	NR	NR	0
	DOD	1.000	0	0	0	0	NR	0
	RAATS	TP	NR	NR	NR	NR	NR	0
	TRIS	TP	NR	NR	NR	NR	NR	0
	TSCA	TP	NR	NR	NR	NR	NR	0
	SSTS	TP	NR	NR	NR	NR	NR	0
	FTTS	TP	NR	NR	NR	NR	NR	0
<u>STATE OR LOCAL ASTM SUPPLEMENTAL</u>								
	SPILLS	TP	NR	NR	NR	NR	NR	0
<u>EDR PROPRIETARY HISTORICAL DATABASES</u>								
	Coal Gas	1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1 SSW 1/8-1/4 1095 ft. LAHAINA SPS #2 (HONOAPIILANI)
 2010 HONOAPIILANI HWY / KAA NAPALI H
 LAHAINA, HI 96761 LUST S103455111
 N/A

Relative: Lower
 Actual: 19 ft.
 Site 1 of 2 in cluster A
 LUST:
 Facility ID: 9-501748
 Alternate Event ID: 990122
 Facility Status Date: 08/25/1999
 Facility Status: Site Cleanup Completed
 Project Officer: Ruiz

A2 SSW 1/8-1/4 1114 ft. LAHAINA SPS #2 (HONOAPIILANI)
 2010 HONOAPIILANI HWY / KAA NAPALI HWY
 LAHAINA, HI 96761 UST U003402933
 N/A

Relative: Lower
 Actual: 21 ft.
 Site 2 of 2 in cluster A
 UST:
 Facility ID: 9-501748 Tank ID: R-M-1
 Tank Status: Permanently Out of Use
 Tank Capacity: 250 Installed: 5/5/1978
 Date Closed: 9/30/1998 Substance: Diesel
 Owner: COUNTY OF MAUI - PUBLIC WORKS & WASTE MANAGEMENT

3 NNW 1/8-1/4 1200 ft. AMFAC MAINTENANCE BUILDING
 HONOAPIILANI HWY
 LAHAINA, HI 96761 UST U001236753
 N/A

Relative: Higher
 Actual: 87 ft.
 UST:
 Facility ID: 9-501417 Tank ID: R-2
 Tank Status: Permanently Out of Use
 Tank Capacity: 3000 Installed: 3/24/1970
 Date Closed: 9/30/1990 Substance: Gasoline
 Owner: AMFAC PROPERTY INVESTMENT CORP.
 Facility ID: 9-501417 Tank ID: R-1
 Tank Status: Permanently Out of Use
 Tank Capacity: 3000 Installed: 3/24/1970
 Date Closed: 9/30/1990 Substance: Gasoline
 Owner: AMFAC PROPERTY INVESTMENT CORP.
 Facility ID: 9-501417 Tank ID: R-3
 Tank Status: Permanently Out of Use
 Tank Capacity: 3000 Installed: 3/24/1970
 Date Closed: 9/30/1990 Substance: Gasoline
 Owner: AMFAC PROPERTY INVESTMENT CORP.

MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Elevation	Site	Database(s)	EDR ID Number	EPA ID Number
4	North	1/2-1	4442 ft.		ROYAL LAHAINA RESORT 2780 KEKAA DR LAHAINA, HI 96761	SHWS LUST UST	U003222195	N/A
Relative:	Lower				SHWS:			
Actual:	18 ft.				File Section :	Central		
					Type :	Private		
					Department 1 :	Not reported		
					Department 2 :	Not reported		
					Department 3 :	Royal Lahaina Resort		
					Table :	Sitellist		
					Island :	Maui		
					Zip :	Not reported		
					Discovery Assesment and Remediation :	Not reported		
					Initial Site Screening Team Lead :	Not reported		
					ISST Assigned :	Not reported		
					ISST Date :	Not reported		
					ISST Priority :	Not reported		
					ISST Letter :	Not reported		
					Env Justice Eligible :	Not reported		
					Preliminary Assesment :	Not reported		
					PA Lead :	Not reported		
					PA Date :	Not reported		
					PA Result :	Not reported		
					Site Investigation :	Not reported		
					SI Lead :	Not reported		
					SI Date :	Not reported		
					SI Result :	Not reported		
					Remediation Action Planned :	Not reported		
					VRP :	Not reported		
					Brownfields :	Not reported		
					Agreement :	Not reported		
					Remedial Investigation :	Not reported		
					RAA :	Not reported		
					Response Action Memo :	Not reported		
					REM Lead :	Not reported		
					REM Date :	Not reported		
					REM Last Update :	Not reported		
					Input By :	Not reported		
					Case :	Fac ID#9-500431		
					Fed Id :	Not reported		
					UST :	Not reported		
					Permits :	Not reported		
					RCRA :	Not reported		
					Program :	Not reported		
					Priority :	Not reported		
					Lat/Long :	Not reported		
					Cost :	Not reported		
					CU QNTY Site :	Not reported		
					Enforcement :	Not reported		
					CU Method :	Not reported		
					Ownership :	Not reported		
					Tax Map Key :	Not reported		
					Form :	Not reported		
					EPCRA :	Not reported		
					EPCRA FIL :	Not reported		
					Pathways :	Not reported		
					Targets :	Not reported		

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

ROYAL LAHAINA RESORT (Continued)

EDR ID Number
 EPA ID Number

Database(s)

U003222195

Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : Not reported
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

LUST:

Facility ID: 9-500431
 Alternate Event ID: 950062
 Facility Status Date: 09/15/1997
 Facility Status: Disconfirmed Release
 Project Officer: Hodges

Facility ID: 9-500431
 Alternate Event ID: 980033
 Facility Status Date: 01/30/1998
 Facility Status: Site Cleanup Completed
 Project Officer: Hodges

Facility ID: 9-500431
 Alternate Event ID: 980020
 Facility Status Date: 01/27/1998
 Facility Status: Site Cleanup Completed
 Project Officer: Hodges

Facility ID: 9-500431
 Alternate Event ID: 970047
 Facility Status Date: 05/16/1997
 Facility Status: LUST Cleanup Initiated: Petroleum
 Project Officer: Fu

Facility ID: 9-500431
 Alternate Event ID: 990200
 Facility Status Date: 06/01/1999
 Facility Status: Case Transferred to HEER
 Project Officer: HEER

Facility ID: 9-500431
 Alternate Event ID: 990167
 Facility Status Date: 06/01/1999
 Facility Status: Case Transferred to HEER
 Project Officer: HEER

UST:

Facility ID:	9-500431	Tank ID:	R-5-GASUPSHO
Tank Status:	Permanently Out of Use	Installed:	4/3/1977
Tank Capacity:	1000	Substance:	Gasoline
Date Closed:	3/27/1997		
Owner:	PLEASANT HAWAIIAN HOLIDAYS		

MAP FINDINGS

<u>Map ID</u>	<u>Direction</u>	<u>Distance</u>	<u>Distance (ft.)</u>	<u>Elevation</u>	<u>Site</u>	<u>Database(s)</u>	<u>EDR ID Number</u>	<u>EPA ID Number</u>
					ROYAL LAHAINA RESORT (Continued)			U003222195

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KAPALUA	U003732591	PAPILLION HAWAIIAN HELICOPTERS HELI	HONOAPIILANI HIGHWAY	96761	LUST, UST
LAHAINA	S104657461	LAHAINA WASTE WATER PUMP STATION #4	ALA MOANA STREET	96761	SHWS
LAHAINA	1000244972	MAUI PINEAPPLE CO HONOLUA DIV	COR HONOAPIILANI HWY/NAPIILIHOU	96761	RCRIS-SQG, FINDS
LAHAINA	U003402934	NAPILI #4 P.S.	3300 HONOAPIILANI HWY L HONOAPIILANI HWY/MALUALA	96761	UST
LAHAINA	U003402937	NAPILI #1 P.S. (HONOKOWA)	3300 HONOAPIILANI HWY L HONOAPIILANI HWY / KAMEE	96761	UST
LAHAINA	U003402935	NAPILI #3 P.S. (KAEA POINT)	3300 HONOAPIILANI HWY L HONOAPIILANI HWY / HOOHU	96761	UST
LAHAINA	U003402936	NAPILI #2 P.S. (KAPUA)	3300 HONOAPIILANI HWY L HONOAPIILANI HWY / AEKAI	96761	UST
LAHAINA	U003541889	LAHAINA SPS#1 (HONOAPIILANI)	3300 HONOAPIILANI HWY HONOAPIILANI HWY/HALAWAI D	96761	UST
LAHAINA	U001236752	KAANAPALI WATER CORP. P-4	MAHINAHINA PINEAPPLE FIELD / 2530 KEKAA DR	96761	UST
LAHAINA	1004688774	RAILROADS OF HAWAII INC	KAANAPALI RESORT N OF PUUKOLII FIELD 7191, WAILUKU	96761	RCRIS-SQG, FINDS
MAUI	S103763675	HAWAIIAN COMMERCIAL & SUGAR CO.,	KALAMAUOLA MOLOKAI		SWF/LF
MAUI	S103763653	KAKAMAULA LANDFILL	KALAUAPAPA MOLOKAI		SWF/LF
MAUI	1000160100	KALAUAPAPA LANDFILL	KALAUAPAPA MOLOKAI		SWF/LF, SHWS
MAUI	S103763654	KALUAKOI LANDFILL	KALUAKOI ROAD MAUNALO		SWF/LF
MAUI	S104534094	BEN FRANKLIN STORES PROPERTY	KAUNAKAKAI, MOLOKAI		SHWS
MAUI	1000726484	LANAI LANDFILL (LF-0056-98)	LANAI		SWF/LF, SHWS
MAUI	S103763656	MAUNALO	MAUNALO MAUI		SWF/LF
MAUI	S103763641	MOLOKAI LANDFILL (NAIWA LF-0030-	NAIWA MOLOKAI		SWF/LF, SPILLS
MAUI	S103763652	CENTRAL MAUI LF, PHASE III LF-0034	PUNENE, MAUI		SWF/LF
MAUI	S103763673	MAALEA CAD LF	PUUNENE / KIHEI ROAD		SWF/LF
MAUI	S103763674	CENTRAL MAUI LF PHASE IV	PUUNENE		SWF/LF
NAPILI	U003222199	NAPILI CENTRAL OFFICE	HONOAPIILANI HWY HUI RD EAST	96761	UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/30/03

Date Made Active at EDR: 06/02/03

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/05/03

Elapsed ASTM days: 28

Date of Last EDR Contact: 05/09/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1

Telephone 617-918-1143

EPA Region 3

Telephone 215-814-5418

EPA Region 4

Telephone 404-562-8033

EPA Region 6

Telephone: 214-655-6659

EPA Region 8

Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites

Source: EPA

Telephone: N/A

Date of Government Version: 04/30/03

Date Made Active at EDR: 06/02/03

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/05/03

Elapsed ASTM days: 28

Date of Last EDR Contact: 05/05/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/19/03

Date Made Active at EDR: 04/08/03

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/24/03

Elapsed ASTM days: 15

Date of Last EDR Contact: 06/23/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/19/03
Date Made Active at EDR: 04/08/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/24/03
Elapsed ASTM days: 15
Date of Last EDR Contact: 06/23/03

CORRACTS: Corrective Action Report

Source: EPA

Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/31/03
Date Made Active at EDR: 05/08/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/07/03
Elapsed ASTM days: 31
Date of Last EDR Contact: 06/09/03

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS

Telephone: 800-424-9346

Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 05/09/03
Date Made Active at EDR: 07/01/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/09/03
Elapsed ASTM days: 53
Date of Last EDR Contact: 06/26/03

ERNS: Emergency Response Notification System

Source: National Response Center, United States Coast Guard

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 04/28/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System

Source: EPA/NTIS

Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/99
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

CONSENT: Superfund (CERCLA) Consent Decrees

Source: EPA Regional Offices

Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision

Source: EPA

Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/09/03
Database Release Frequency: Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

DELISTED NPL: National Priority List Deletions

Source: EPA
Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report

Source: EPA
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/19/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation
Telephone: 202-366-4555

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 01/31/03
Database Release Frequency: Annually

Date of Last EDR Contact: 04/30/03
Date of Next Scheduled EDR Contact: 07/21/03

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 03/11/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

NPL LIENS: Federal Superfund Liens

Source: EPA
Telephone: 205-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

PADS: PCB Activity Database System

Source: EPA

Telephone: 202-564-3887

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/26/03
Database Release Frequency: Annually

Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

DOD: Department of Defense Sites

Source: USGS

Telephone: 703-648-5920

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

RAATS: RCRA Administrative Action Tracking System

Source: EPA

Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

TRIS: Toxic Chemical Release Inventory System

Source: EPA

Telephone: 202-260-1531

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 06/27/03
Date of Next Scheduled EDR Contact: 09/22/03

TSCA: Toxic Substances Control Act

Source: EPA

Telephone: 202-260-5521

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA

Telephone: 202-564-2501

Date of Government Version: 04/15/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Source: EPA

Telephone: 202-564-5008

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 05/09/03

Date of Next Scheduled EDR Contact: 07/21/03

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Telephone: 202-564-2501

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/15/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/23/03

Date of Next Scheduled EDR Contact: 09/22/03

STATE OF HAWAII ASTM STANDARD RECORDS

SHWS: Sites List

Source: Department of Health

Telephone: 808-586-4249

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 07/12/01
Date Made Active at EDR: 10/16/01
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 09/24/01

Elapsed ASTM days: 22

Date of Last EDR Contact: 06/23/03

SWF/LF: Permitted Landfills in the State of Hawaii

Source: Department of Health

Telephone: 808-586-4245

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/03/99
Date Made Active at EDR: 05/25/99
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/10/99

Elapsed ASTM days: 15

Date of Last EDR Contact: 05/01/03

LUST: Leaking Underground Storage Tank Database

Source: Department of Health

Telephone: 808-586-4228

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/01/03
Date Made Active at EDR: 03/12/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/25/03

Elapsed ASTM days: 15

Date of Last EDR Contact: 07/11/03

UST: Underground Storage Tank Database

Source: Department of Health

Telephone: 808-586-4228

Registered Underground Storage Tanks. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/01/03
Date Made Active at EDR: 03/06/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/25/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 07/11/03

STATE OF HAWAII ASTM SUPPLEMENTAL RECORDS

SPILLS: Release Notifications

Source: Department of Health
Telephone: 808-586-4249

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 09/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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STATE OF HAWAII BROWNFIELDS DATABASES RECORDS

BROWNFIELDS: Hawaii Brownfields Sites

Source: Office of Planning
Telephone: 808-586-2423

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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MAP FINDINGS SUMMARY

<u>Database</u>	<u>Target Property</u>	<u>Search Distance (Miles)</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
<u>FEDERAL ASTM STANDARD</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS	TP		NR	NR	NR	NR	NR	0
<u>STATE ASTM STANDARD</u>								
SHWS		1.000	0	0	0	1	NR	1
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	0	1	0	NR	NR	1
UST		0.250	0	2	NR	NR	NR	2
<u>FEDERAL ASTM SUPPLEMENTAL</u>								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
HMIRS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
FSTS	TP		NR	NR	NR	NR	NR	0
<u>STATE OR LOCAL ASTM SUPPLEMENTAL</u>								
SPILLS	TP		NR	NR	NR	NR	NR	0
<u>EDR PROPRIETARY HISTORICAL DATABASES</u>								
Coal Gas		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID			
Direction			
Distance			
Distance (ft.)		Database(s)	EDR ID Number
Elevation	Site		EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1 SSW 1/8-1/4 1095 ft.	LAHAINA SPS #2 (HONOAPIILANI) 2010 HONOAPIILANI HWY / KAA NAPALI H LAHAINA, HI 96761 Site 1 of 2 in cluster A	LUST S103455111 N/A	
Relative: Lower	LUST: Facility ID: 9-501748 Alternate Event ID: 990122 Facility Status Date: 08/25/1999 Facility Status: Site Cleanup Completed Project Officer: Rulz		
Actual: 19 ft.			

A2 SSW 1/8-1/4 1114 ft.	LAHAINA SPS #2 (HONOAPIILANI) 2010 HONOAPIILANI HWY / KAA NAPALI HWY LAHAINA, HI 96761 Site 2 of 2 in cluster A	UST U003402933 N/A	
Relative: Lower	UST: Facility ID: 9-501748 Tank Status: Permanently Out of Use Tank Capacity: 250 Date Closed: 9/30/1998 Owner: COUNTY OF MAUI - PUBLIC WORKS & WASTE MANAGEMENT	Tank ID: R-M-1 Installed: 5/5/1978 Substance: Diesel	
Actual: 21 ft.			

3 NNW 1/8-1/4 1200 ft.	AMFAC MAINTENANCE BUILDING HONOAPIILANI HWY LAHAINA, HI 96761	UST U001236753 N/A	
Relative: Higher	UST: Facility ID: 9-501417 Tank Status: Permanently Out of Use Tank Capacity: 3000 Date Closed: 9/30/1990 Owner: AMFAC PROPERTY INVESTMENT CORP.	Tank ID: R-2 Installed: 3/24/1970 Substance: Gasoline	
Actual: 87 ft.	Facility ID: 9-501417 Tank Status: Permanently Out of Use Tank Capacity: 3000 Date Closed: 9/30/1990 Owner: AMFAC PROPERTY INVESTMENT CORP.	Tank ID: R-1 Installed: 3/24/1970 Substance: Gasoline	
	Facility ID: 9-501417 Tank Status: Permanently Out of Use Tank Capacity: 3000 Date Closed: 9/30/1990 Owner: AMFAC PROPERTY INVESTMENT CORP.	Tank ID: R-3 Installed: 3/24/1970 Substance: Gasoline	

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

4
 North
 1/2-1
 4442 ft.

ROYAL LAHAINA RESORT
 2780 KEKAA DR
 LAHAINA, HI 96761

Database(s) EDR ID Number
 EPA ID Number

SHWS U003222195
 LUST N/A
 UST

Relative:
 Lower
 Actual:
 18 ft.

SHWS:
 File Section : Central
 Type : Private
 Department 1 : Not reported
 Department 2 : Not reported
 Department 3 : Royal Lahaina Resort
 Table : Sitelist
 Island : Maui
 Zip : Not reported
 Discovery Assesment and Remediation : Not reported
 Initial Site Screening Team Lead : Not reported
 ISST Assigned : Not reported
 ISST Date : Not reported
 ISST Priority : Not reported
 ISST Letter : Not reported
 Env Justice Eligible : Not reported
 Preliminary Assesment : Not reported
 PA Lead : Not reported
 PA Date : Not reported
 PA Result : Not reported
 Site Investigation : Not reported
 SI Lead : Not reported
 SI Date : Not reported
 SI Result : Not reported
 Remediation Action Planned : Not reported
 VRP : Not reported
 Brownfields : Not reported
 Agreement : Not reported
 Remedial Investigation : Not reported
 RAA : Not reported
 Response Action Memo : Not reported
 REM Lead : Not reported
 REM Date : Not reported
 REM Last Update : Not reported
 Input By : Not reported
 Case : Fac ID#9-500431
 Fed Id : Not reported
 UST : Not reported
 Permits : Not reported
 RCRA : Not reported
 Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : Not reported
 Tax Map Key : Not reported
 Form : Not reported
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

U003222195

ROYAL LAHAINA RESORT (Continued)

Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : Not reported
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

LUST:

Facility ID: 9-500431
 Alternate Event ID: 950062
 Facility Status Date: 09/15/1997
 Facility Status: Disconfirmed Release
 Project Officer: Hodges

Facility ID: 9-500431
 Alternate Event ID: 980033
 Facility Status Date: 01/30/1998
 Facility Status: Site Cleanup Completed
 Project Officer: Hodges

Facility ID: 9-500431
 Alternate Event ID: 980020
 Facility Status Date: 01/27/1998
 Facility Status: Site Cleanup Completed
 Project Officer: Hodges

Facility ID: 9-500431
 Alternate Event ID: 970047
 Facility Status Date: 05/16/1997
 Facility Status: LUST Cleanup Initiated: Petroleum
 Project Officer: Fu

Facility ID: 9-500431
 Alternate Event ID: 990200
 Facility Status Date: 06/01/1999
 Facility Status: Case Transferred to HEER
 Project Officer: HEER

Facility ID: 9-500431
 Alternate Event ID: 990167
 Facility Status Date: 06/01/1999
 Facility Status: Case Transferred to HEER
 Project Officer: HEER

UST:

Facility ID: 9-500431
 Tank Status: Permanently Out of Use
 Tank Capacity: 1000
 Date Closed: 3/27/1997
 Owner: PLEASANT HAWAIIAN HOLIDAYS

Tank ID: R-5-GASUPSHO
 Installed: 4/3/1977
 Substance: Gasoline

MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Elevation	Site	Database(s)	EDR ID Number	EPA ID Number
					ROYAL LAHAINA RESORT (Continued)			U003222195

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KAPALUA	U003732591	PAPILLION HAWAIIAN HELICOPTERS HELI	HONOAPIILANI HIGHWAY	96761	LUST, UST
LAHAINA	S104657461	LAHAINA WASTE WATER PUMP STATION #4	ALA MOANA STREET		SHWS
LAHAINA	1000244972	MAUI PINEAPPLE CO HONOLUA DIV	3300 HONOAPIILANI HWY L HONOAPIILANI	96761	RCRIS-SQG, FINDS
LAHAINA	U003402934	NAPILI #1 P.S.	HWY.MALIALA	96761	UST
LAHAINA	U003402937	NAPILI #1 P.S. (HONOKOWA)	3300 HONOAPIILANI HWY L HONOAPIILANI	96761	UST
LAHAINA	U003402935	NAPILI #3 P.S. (KAEA POINT)	HWY / KAMEE	96761	UST
LAHAINA	U003402936	NAPILI #2 P.S. (KAPUA)	HWY / HOORU	96761	UST
LAHAINA	U003541889	LAHAINA SPS#1 (HONOAPIILANI)	3300 HONOAPIILANI HWY L HONOAPIILANI	96761	UST
LAHAINA	U001238752	KAANAPALI WATER CORP. P-4	HWY / AEKAI	96761	UST
LAHAINA	1004688774	RAILROADS OF HAWAII INC	HWYHALAWAI D		
MAUI	S103763675	HAWAIIAN COMMERCIAL & SUGAR CO.,	MAHINAHINA PINEAPPLE FIELD / 2530 KEKAA	96761	UST
MAUI	S103763653	KAKAMAULA LANDFILL	DR		
MAUI	1000160100	KALAUAPAPA LANDFILL	KAANAPALI RESORT N OF PUUKOLI	96761	RCRIS-SQG, FINDS
MAUI	S103763654	KALUAKOI LANDFILL	FIELD 7191, WAILUKU		SWF/LF
MAUI	S104534094	BEN FRANKLIN STORES PROPERTY	KALAMAULA MOLOKAI		SWF/LF
MAUI	1000726484	LANAI LANDFILL (LF-0056-98)	KALAUAPAPA MOLOKAI		SWF/LF, SHWS
MAUI	S103763656	MAUNALOA LANDFILL	KALUAKOI ROAD MAUNALOA		SWF/LF
MAUI	S103763641	MOLOKAI LANDFILL (NAWA LF LF-0030-	KAUNAKAKAI, MOLOKAI		SHWS
MAUI	S103763652	CENTRAL MAUI LF, PHASE 1B III LF-0034	LANAI		SWF/LF, SHWS
MAUI	S103763673	MAALEA C&D LF	MAUNALOA MAUI		SWF/LF
MAUI	S103763674	CENTRAL MAUI LF PHASE IV	NAIWA MOLOKAI		SWF/LF, SPILLS
NAPILI	U003222199	NAPILI CENTRAL OFFICE	PUNENE, MAUI		SWF/LF
			PUUNENE / KIHEI ROAD		SWF/LF
			PUUNENE		SWF/LF
			HONOAPIILANI HWY HUI RD EAST	96761	UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/30/03

Date Made Active at EDR: 06/02/03

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/05/03

Elapsed ASTM days: 28

Date of Last EDR Contact: 05/09/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1

Telephone 617-918-1143

EPA Region 3

Telephone 215-814-5418

EPA Region 4

Telephone 404-562-8033

EPA Region 6

Telephone: 214-655-6659

EPA Region 8

Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites

Source: EPA

Telephone: N/A

Date of Government Version: 04/30/03

Date Made Active at EDR: 06/02/03

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/05/03

Elapsed ASTM days: 28

Date of Last EDR Contact: 05/05/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/19/03

Date Made Active at EDR: 04/08/03

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/24/03

Elapsed ASTM days: 15

Date of Last EDR Contact: 06/23/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/19/03
Date Made Active at EDR: 04/08/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/24/03
Elapsed ASTM days: 15
Date of Last EDR Contact: 06/23/03

CORRACTS: Corrective Action Report

Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/31/03
Date Made Active at EDR: 05/08/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/07/03
Elapsed ASTM days: 31
Date of Last EDR Contact: 06/09/03

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 05/09/03
Date Made Active at EDR: 07/01/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/09/03
Elapsed ASTM days: 53
Date of Last EDR Contact: 06/26/03

ERNS: Emergency Response Notification System

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 04/28/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System

Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/99
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

CONSENT: Superfund (CERCLA) Consent Decrees

Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision

Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/09/03
Database Release Frequency: Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

DELISTED NPL: National Priority List Deletions

Source: EPA
Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report

Source: EPA
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/19/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation
Telephone: 202-366-4555

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 01/31/03
Database Release Frequency: Annually

Date of Last EDR Contact: 04/30/03
Date of Next Scheduled EDR Contact: 07/21/03

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 03/11/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

NPL LIENS: Federal Superfund Liens

Source: EPA
Telephone: 205-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

PADS: PCB Activity Database System

Source: EPA

Telephone: 202-564-3887

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/26/03
Database Release Frequency: Annually

Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

DOD: Department of Defense Sites

Source: USGS

Telephone: 703-648-5920

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

RAATS: RCRA Administrative Action Tracking System

Source: EPA

Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

TRIS: Toxic Chemical Release Inventory System

Source: EPA

Telephone: 202-260-1531

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 06/27/03
Date of Next Scheduled EDR Contact: 09/22/03

TSCA: Toxic Substances Control Act

Source: EPA

Telephone: 202-260-5521

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA

Telephone: 202-564-2501

Date of Government Version: 04/15/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Source: EPA

Telephone: 202-564-5008

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/00

Database Release Frequency: Annually

Date of Last EDR Contact: 05/09/03

Date of Next Scheduled EDR Contact: 07/21/03

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Telephone: 202-564-2501

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/15/03

Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/23/03

Date of Next Scheduled EDR Contact: 09/22/03

STATE OF HAWAII ASTM STANDARD RECORDS

SHWS: Sites List

Source: Department of Health

Telephone: 808-586-4249

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 07/12/01

Date Made Active at EDR: 10/16/01

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 09/24/01

Elapsed ASTM days: 22

Date of Last EDR Contact: 06/23/03

SWF/LF: Permitted Landfills in the State of Hawaii

Source: Department of Health

Telephone: 808-586-4245

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/03/99

Date Made Active at EDR: 05/25/99

Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/10/99

Elapsed ASTM days: 15

Date of Last EDR Contact: 05/01/03

LUST: Leaking Underground Storage Tank Database

Source: Department of Health

Telephone: 808-586-4228

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/01/03

Date Made Active at EDR: 03/12/03

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/25/03

Elapsed ASTM days: 15

Date of Last EDR Contact: 07/11/03

UST: Underground Storage Tank Database

Source: Department of Health

Telephone: 808-586-4228

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/01/03
Date Made Active at EDR: 03/06/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/25/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 07/11/03

STATE OF HAWAII ASTM SUPPLEMENTAL RECORDS

SPILLS: Release Notifications

Source: Department of Health
Telephone: 808-586-4249

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 09/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

STATE OF HAWAII BROWNFIELDS DATABASES RECORDS

BROWNFIELDS: Hawaii Brownfields Sites

Source: Office of Planning
Telephone: 808-586-2423

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers for Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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Main Identity

From: "Jeffrey Kermode" <jkermode@vuichenvironmental.com>
To: "Johnny Vares" <junglejohnny@hawaii.rr.com>
Sent: Monday, July 21, 2003 3:57 PM
Subject: 4 Seasons

Johnny

Took the final samples at Wailea, not that it matters because they are not valid. The area had already undergone construction work so our clean zone was a dirty zone. You have got to give me a little heads up on the end of jobs - not the hour before on a Sunday. The only instructions I left with you were to seal off the room at the end of the job and I would come and take the final samples. All you had to do was leave a message and I would have done it Sun or early Monday.

Sampling for mold is more complex and involves swab sampling too. That is why I did not set you up with mold cassettes and said I would do it.

Anyone with knowledge of this type of work at the 4 Seasons' head office will call us on it. A sharp lawyer would make us rip out all the new drywall, reclean it and re-sample it. Suddenly we would be in the red and off the 4 Seasons list of competent companies.

Keep this in mind for future mold jobs. Thanks.

JK

Jeffrey Kermode
Vuich Environmental Consultants, Inc.
1498 Lower Main Street, Suite C
Wailuku, HI 96793
(808) 249-2777 p. (808) 249-2778 f.

7/29/03



Preliminary Environmental Investigation

According to ASTM Standard 1527-00, the user's (or client's) responsibility in this investigation is to help identify the possibility of recognized environmental conditions in connection with the property. Please assist us by responding to the following request for data and information you may have, or of which you may have some specialized knowledge. This questionnaire will be included in the Appendices of the final report as an indication of user assistance.

Please Supply As Many of the Following Documents As Possible

- A. Tax Map Key Number/Tax Code Number Parcel 56 of 4-4-006
- B. Title Information (Current, and any previous ownership.)
- C. Property Legal Description (If Title Information is not available)
- D. Tax Map and/or Site Development Drawing/Plat
- E. Special Property Information (Well-development data, endangered species listings, historical registration or environmental deed restrictions.)
- F. Real Estate Appraisal Report
- G. Special Management Area Permit Report (SMA)

Please Provide the Following Information to The Best Of Your Ability

1. Environmental Site Assessments (ESA): Are you aware of any previous assessments: Cleanup Closure Reports, Permit Characterization Reports, etc. conducted on the subject site or within the immediate area? If yes, please supply details.
no
2. Local-State-Federal Inspections: Are you aware of any environmental inspections conducted by any regulatory agency, i.e., Hawaii Dept. of Health (Environmental Health Services), OSHA, U.S. Army Corps of Engineers, Department of Land & Natural Resources, Fish & Wildlife Services, HUD, EPA, or County Wastewater or Solid Waste Division of the Public Works/Waste Management Department etc.? If yes, please supply details.
no
- 8a. Structures/Buildings: Are there any as-built or other construction drawings available for review? Contact Name and Telephone Number:
no - one old shade on site, one water treatment bldg
- 8b. Site improvements? (Renovation Date & Extent)
most improvements date back to 60's & 70's
4. Purchase Price: Is the property's purchase price within a normal market range or significantly lower? If lower, please supply details.
J.V. w/ Kamehameha Development (formerly Acute/Procedural)

Rev 04/03
Environmental Investigation Starter Pack (HI).dot

5. Name of Current Owner: Kiamele Development Corp
 6. Name of former Owner: _____
 7. Proceedings Against the Property: Are you aware of any administrative or legal proceedings against the property for environmental concerns i.e., Compliance Orders, Notices of Violation? If yes, please supply details. NO

8. Property Liens: Are there any recorded liens or consent decrees on the property that is environmentally related, i.e., property clean-up, waste removal, asbestos abatement, wastewater issues, etc.? If yes please supply details. NO (see HPI report for records)

9. Specialized Historic Information: Are you aware of any previous owner, neighbor, business affiliate or other individual who might have knowledge of any special or unusual historic use of, and/or previous operations conducted on the subject property? Contact Name and Telephone Number: NO

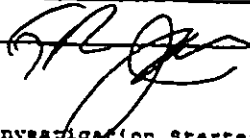
10. Manufacturing or Processing: If there are manufacturing or processing activities conducted on-site, is there an operation flow chart, diagram or procedures manual available for review? Contact Name and Telephone Number
Storage of cans used env for temporary processing

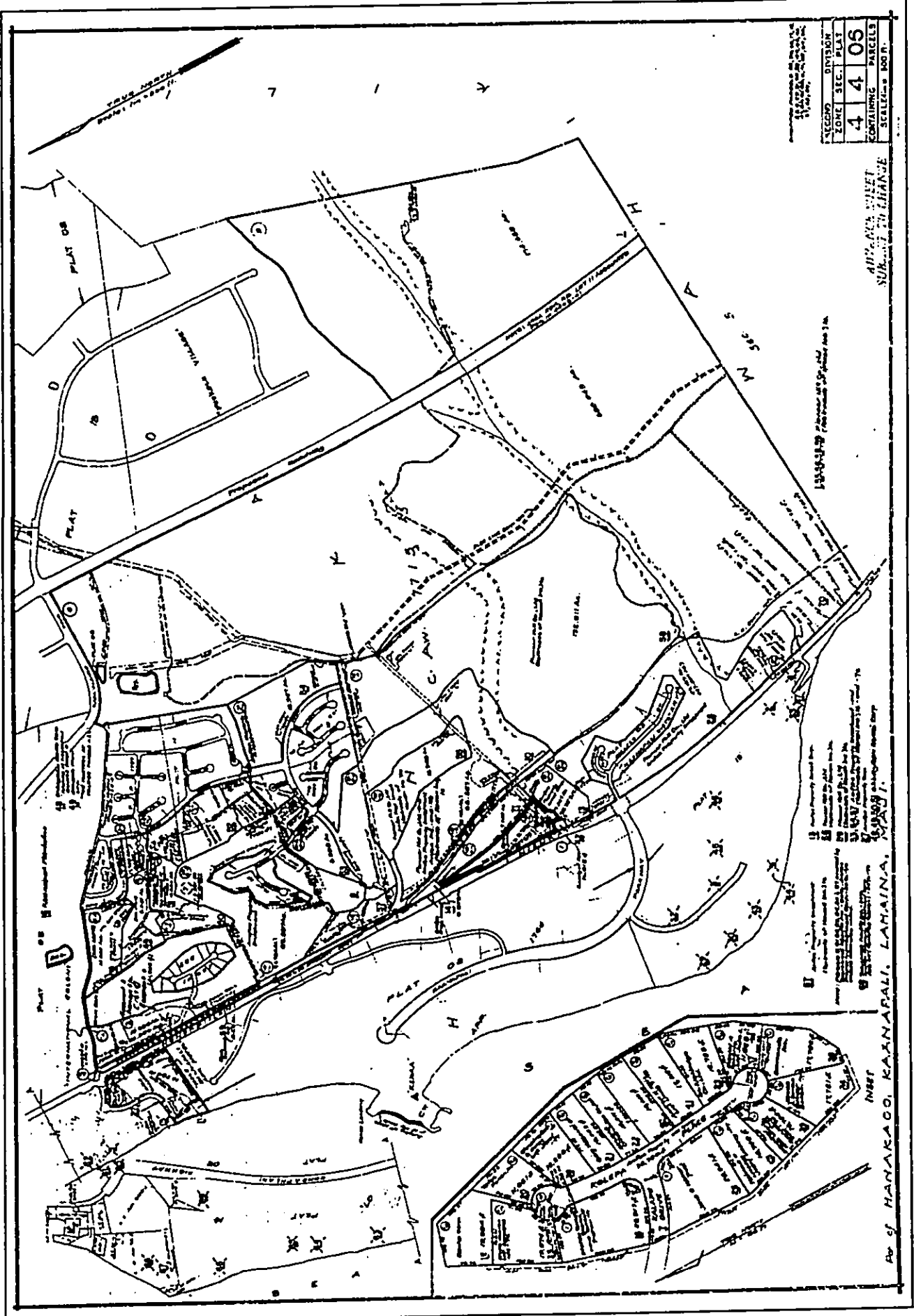
11. This Report is Prepared For: (Please Print)
 Attention: G Robert Johnston
 Organization: Landtek, Inc.
 Address: 2530 Kekoa Dr # C-1 Lahoma HI 96741
 Phone no.: 661-3232 Fax no.: 661-1921

12. Please List Other Organizations (Lenders) Who Will Require a Listing as "Also Prepared For:" on the report cover and signature page.
 (a) Attention: _____
 Organization: _____
 Address: _____
 (b) Attention: _____
 Organization: _____
 Address: _____

We will submit 2 signed reports for each project. If additional copies are required, an additional fee will be charged for processing.

Who Prepared This Starter Package Information?

Name: (Please Print)	<u>G Robert Johnston</u>	Title:	<u>Vice President</u>
Company/Organization:	<u>Landtek, Inc.</u>		
Address:	<u>2530 Kekoa Dr. C-1</u>		
Tel. No.:	<u>661-3232</u>	Fax No.:	<u>661-1921</u>
Signature:		Date:	<u>6/19/03</u>



A vertical line of small, illegible text or markings runs along the right edge of the page.

LINDA LINGLE
GOVERNOR OF HAWAII



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

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

In reply, please refer to:
EMQ/SDWB

June 27, 2003

Ms. Massy Cashen
Vuich Environmental Consultants
1498 Lower Main Street, Suite C
Wailuku, Hawai'i 96793

Dear Ms. Cashen:

SUBJECT: UNDERGROUND INJECTION CONTROL (UIC)
REPLY TO YOUR REQUEST FOR PUBLIC RECORD FOR

1. TMK: (2)3-8-66:24, 25, & 26
296, 312, 326 ALAMAHA STREET, KAHULUI, HI 96732
2. TMK: (2)3-9-11-18
1718 & 1721 HALAMA STREET, KIHEI, HI 96753
3. TMK: (2)4-4-06:56
KAANAPALI DEVELOPMENT CORPORATION
KAANAPALI, LAHAINA, HI 96761

There are no UIC permits associated with the subject properties.

If an injection well is found at any property, please contact us so that we can determine if the injection well regulations are applicable.

If you have any questions about this subject, please call Chauncey Hew at (808) 586-4258 (Honolulu) or call direct toll free from Maui at 984-2400, ext. 64258.

Sincerely,

Handwritten signature of William W. Wong in cursive.

WILLIAM W. WONG, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

CH:nbp

c: Gordon Muraoka, SDWB Sanitarian, Maui

REQUEST FOR PUBLIC RECORDS

COPIES

Date: June 23, 2003	
To: State of Hawaii Department of Health Environmental Management Division 919 Ala Moana Boulevard, Room 309 Honolulu, HI 96814 Phone: (808) 586-4200 Fax: (808) 586-5800	From: Vuich Environmental Consultants, Inc. 1498 Lower Main Street, Suite C Wailuku, HI 96793 Phone: (808) 249-2777 Fax: (808) 249-2778
<i>Attn: Clean Air Branch</i>	<i>Attn: Massy Cashen</i>

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number: 0306-623
Tax Map Key No.: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Occupant: None
Type of Business: None

Tax Map Key is enclosed.

REQUEST FOR PUBLIC RECORDS

COPY

Date: June 23, 2003

To: State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 301
Honolulu, HI 96814
Phone: (808) 586-4309

From: Vuich Environmental Consultants, Inc.
1498 Lower Main Street, Suite C
Wailuku, HI 96793
Phone: (808) 249-2777
Fax: (808) 249-2778

Attn: *Clean Water Branch*

Attn: *Massy Cashen*

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number: 0306-623
Tax Map Key No.: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Occupant: None
Type of Business: None

Tax Map Key is enclosed.

REQUEST FOR PUBLIC RECORDS

COPIES

Date: June 23, 2003

To: State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 206
Honolulu, HI 96814
Phone: (808) 586-4249

From: Vuich Environmental Consultants, Inc.
1498 Lower Main Street, Suite C
Wailuku, HI 96793
Phone: (808) 249-2777
Fax: (808) 249-2778

Attn: *Office of Hazard Evaluation
& Emergency Response (HEER)*

Attn: *Massy Cashen*

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number: 0306-623
Tax Map Key No.: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Occupant: None
Type of Business: None

Tax Map Key is enclosed.

REQUEST FOR PUBLIC RECORDS

COPY

Date: June 23, 2003

To: State of Hawaii Department of Health
Environmental Management Division
919 Ala Moana Boulevard, Room 308
Honolulu, HI 96814
Phone: (808) 586-4258
Fax: (808) 586-4370

From: Vuich Environmental Consultants, Inc.
1498 Lower Main Street, Suite C
Wailuku, HI 96793
Phone: (808) 249-2777
Fax: (808) 249-2778

Attn: *Safe Drinking Water Branch*

Attn: *Massy Cashen*

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number: 0306-623
Tax Map Key No.: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Occupant: None
Type of Business: None

Tax Map Key is enclosed.

REQUEST FOR PUBLIC RECORDS

COPY

Date: June 23, 2003	
To: State of Hawaii Department of Health Environmental Management Division 919 Ala Moana Boulevard, Room 203 Honolulu, HI 96814 Phone: (808) 586-4294	From: Vuich Environmental Consultants, Inc. 1498 Lower Main Street, Suite C Wailuku, HI 96793 Phone: (808) 249-2777 Fax: (808) 249-2778
<i>Attn: Wastewater Branch</i>	<i>Attn: Massy Cashen</i>

Dear Sir/Madam:

We are requesting a search for any past or pending environmental permits, licenses, citations, or other information pertaining to the site(s) described below.

SITE INFORMATION:

Project Number: 0306-623
Tax Map Key No.: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Occupant: None
Type of Business: None

Tax Map Key is enclosed.



County of Maui
Department of Fire & Public Safety
200 Dairy Road
Kahului, HI 96732
Phone: (808) 270-7572
Fax: (808) 270-7918

HAZARDOUS MATERIALS DIVISION
JAMES L. KINO, CAPTAIN

July 7, 2003

Dear Ms. Cashen:

I am unable to do a search on our database from the Tax map Key you provided (TMK {2} 4-4-06:56). I will need an address to be able to provide you with the information you are seeking.

Thank you,

James L. Kino
James L. Kino

JUL 07 03 12:41 No.001 P.02

MAUI FIRE DEPARTMENT TEL:808-270-7918



June 23, 2003

Maui County Fire Department
Hazardous Materials Division
200 Dairy Road
Kahului, Hawaii 96732
Attn: Capt. James Kino
Via Fax No: 270-7919



RE: Request for Public Records for Vuich Environmental Consultants (VEC)

Dear Capt. Kino:

VEC is requesting any past or present information of environmental concern pertaining to the subject site and adjacent sites from the Maui County Fire Department's database. This could include information on environmental releases (spills), permits, citations, inspections, etc.

SITE INFORMATION:

Project Number: 0306-623
TMK: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Tenant: None
CERCLIS: Subject site is not on CERCLIS list, date 03/19/03
ERNS: Subject site is not on ERNS list, date 12/31/01

Thank you for your assistance.

Sincerely yours,


Massy Cashen



June 23, 2003

Maui County Fire Department
Fire Prevention Bureau
21 Kinipopo Street
Wailuku, Hawaii 96793
Attn: Capt. Neal Bal
Via Fax No: 270-7889



RE: Request for Public Records for Vuich Environmental Consultants (VEC)

Dear Capt. Bal:

VEC is requesting any past or present information of environmental concern pertaining to the subject site and adjacent sites from the Maui County Fire Department's database. This could include information on environmental releases (spills), permits, citations, inspections, etc.

SITE INFORMATION:

Project Number: 0306-623
TMK: (2) 4-4-06:56
Address: Kaanapali Dev't Corp, Kaanapali, Lahaina, HI 96761
Current Owner: Kaanapali Development Corporation
Former Owner: N.A.
Current Tenant: None
CERCLIS: Subject site is not on CERCLIS list, date 03/19/03
ERNS: Subject site is not on ERNS list, date 12/31/01

Thank you for your assistance.

Sincerely yours,


Massy Cashen

Maui (Corporate) Office: 1498 Lower Main Street, Suite C, Wailuku, Hawaii 96793 • (808) 249-2777 Phone / (808) 249-2778 Fax
Oahu Office: 650 Kakoi Street, Unit 3, Honolulu, Hawaii 96819 • (808) 836-1611 Phone / (808) 836-6299 Fax
Inter-Island: (800) 572-1165 • www.vuichenvironmental.com

Appendix C:

Qualifications of Environmental Professionals



Consultants, Inc.

STATEMENT OF QUALIFICATIONS

for

Robert A. Davis, B.S.

Company Position

Environmental Technician

**Responsibilities
and Duties:**

- Phase I & II Environmental Site Assessments/Investigations
- Asbestos Inspections, Air Monitoring
- Erosion Control Management
- Indoor Air Quality Investigations
- Hazardous/Regulated Waste Management

Experience:

- OSHA & EPA Compliance Inspector (U. S. M. C)
- Hazardous Material and Hazardous Waste Management
- Project Manager Occupational Safety and Health Program
- Respiratory Protection Program Manager
- Confined Space Program Manager
- Risk Management/Hazard abatement
- Safety Officer
- Instructor work place safety
- Accident Investigator
- 20 years Military Service

**Training &
Education**

- Bachelor of Science, Environmental and Hazardous Materials Management, University Maryland, University College, 1998
- Confined Space Program Manager Course
- Respiratory Protection Program Managers Course OSHA 222A
- Risk Analysis and Management Managers Course (Instructor Certification)
- Accident Investigators Course
- Safety Managers Course
- Industrial Studies in Hazardous Materials
- Environmental Health and Occupational Safety
- Risk Management
- Integrated Environmental Management
- Environmental Law and Code of Federal Regulations
- Introduction to Hazardous Materials

Rev. 07-03

Maui (Main) Office: 1498 Lower Main Street, Suite C, Wailuku, Hawaii 96793 • (808) 249-2777 Phone/(808) 249-2778 Fax
Oahu Office: 650 Kakoi Street, Unit 3, Honolulu, Hawaii 96819 • (808) 836-1611 Phone • (808) 836-6299 Fax
Inter-Island: (800) 572-1165 • www.vuichenvironmental.com



STATEMENT OF QUALIFICATIONS

for
Jeffrey E. Kermode, B.A., B. Tech.

- Company Position** Environmental Projects and Operations Manager
- Responsibilities and Duties:**
- Phase I & II Environmental Site Assessments/Investigations
 - Phase III Remediation Projects
 - Underground Storage Tank (UST) Closures
 - Asbestos Inspections, Air Monitoring and Supervision of Removal
 - Lead-Based Paint Inspections, Risk Assessments and Supervision of Removal
 - Indoor Air Quality Investigations
 - Site Safety Officer for Sampling/Remediation Projects
- Experience:**
- Soil and Groundwater Investigations/Remediation
 - UST Removal and Proper Closure
 - Hazardous Materials Management
 - Asbestos and Lead-Based Paint Projects (Inspections, Monitoring, Removal)
 - Indoor Air Quality Sampling for Particulate and Microbiological Contaminants
 - Wetland Delineation
 - Erosion Control and Pollution Prevention Planning and Implementation for Large Scale Construction Projects
 - Environmental Report Writing and Compilation
 - Conducted On-Site Oil Spill Response Training Courses, Assessed Clients' Response Preparedness, and Assisted in the Development of Oil Spill Contingency Plans
 - Oil Spill Clean-Up Operations
 - Pelagic and Coastal Fisheries Research as a Scientific Observer
- Training & Education**
- Bachelor of Technology, Environmental Engineering, B.C.I.T. Burnaby, B.C., 1999
 - Bachelor of Arts, Geography, University of B.C., Vancouver, Canada, 1989
 - AHERA (Asbestos Hazard Emergency Response Act) Inspector for Asbestos, US EPA Certified
 - AHERA Asbestos Contractor Supervisor, US EPA Certified
 - AHERA Project Monitor for Asbestos, US EPA Certified
 - OSHA HAZWOPER Certification (40 Hr)
 - On-Scene Incident Commander Certification (24 Hr), US EPA Certified
 - Lead-Based Paint Inspector, US EPA Certified
 - Lead-Based Paint Risk Assessor, US EPA Certified
 - Lead-Based Paint Contractor Supervisor, US EPA Certified

Rev. 10-01

Maui (Main) Office: 1498 Lower Main Street, Suite C, Wailuku, Hawaii 96793 • (808) 249-2777 Phone/(808) 249-2778 Fax
Oahu Office: 650 Kakoi Street, Unit 3, Honolulu, Hawaii 96819 • (808) 836-1611 Phone • (808) 836-6299 Fax
Inter-Island: (800) 572-1165 • www.vulchenvironmental.com



JOHN S. VUICH
1498 Lower Main Street, Suite C
Wailuku, HI 96793
(808) 249-2777

STATEMENT OF QUALIFICATIONS

M. S. Geological Engineering, University of Arizona
B. S. Geological Engineering, University of Arizona
Registered Geologist (California)
Registered Environmental Assessor (California)
Certified Environmental Manager (Nevada)

AREAS OF EXPERTISE

- ENVIRONMENTAL**
- ▼ Site Assessments, Phase I, II, III Investigations
 - ▼ Underground Storage Tank Closure
 - ▼ Asbestos Inspection and Monitoring, Management Planning, and Abatement Project Design and Removal
 - ▼ Lead-Containing Paint Surveys and Inspections, and Disturbance Design and Removal
 - ▼ Site Characterization for Remedial Investigations
 - ▼ Facility Operation Compliance Audits-ISO 14000 Audits
 - ▼ Soils/Groundwater Remediation
 - ▼ Hazardous Waste Management
 - ▼ Risk Assessment Investigations
 - ▼ RCRA Compliance and Closure Projects
 - ▼ Expert Witness/Litigation Support
 - ▼ Industrial Hygiene Qualified/Competent Person
 - ▼ Mold/Fungi Sampling, Remediation and Abatement Design and Removal
- GEOLOGICAL**
- ▼ Hydrogeology
 - ▼ Geologic Hazards Analysis
 - ▼ Landuse Planning
 - ▼ Subsurface Excavations and Drilling Investigations and Sampling
- MANAGEMENT**
- ▼ Program Director - Project Management
 - ▼ Client - Agency Liaison
 - ▼ Field Supervision - Administrative Supervisor

Rev. 2/02

Maui (Main) Office: 1498 Lower Main Street, Suite C, Wailuku, Hawaii 96793 • (808) 249-2777 Phone/(808) 249-2778 Fax
Oahu Office: 650 Kakoi Street, Unit 3, Honolulu, Hawaii 96819 • (808) 836-1611 Phone • (808) 836-6299 Fax
Inter-Island: (800) 572-1165 • www.vuichenvironmental.com

RELEVANT EXPERIENCE

**Owner-Director • Vuich Environmental Consultants, Inc.
Pukalani, Hawaii and Tucson, Arizona • (March, 1994 - Present)**

Consulting services and project management for property transfers, sampling and site characterization plans, hazardous and toxic waste management, underground storage tanks, regulatory compliance, landfill sites, site remediation and closure plans, permit applications, litigation support, feasibility planning and contingency and emergency response plans.

**Director • CEO Haztech Enviro-Systems
Tucson, AZ • July 1988 - February 1994)**

Founder of professional environmental engineering and geological consulting firm. Services included site assessments, site contamination characterizations, facility audits, RCRA closure investigations and hazardous/regulated waste management, remediation projects, and asbestos surveys. Prepared regulatory documentation and permitting for Federal, State and local regulatory agencies on all projects. Supervised professional, technical, sales and administrative/clerical staff.

**Project Engineer • Hazchem Environmental Services
Tucson, AZ • March 1987 - June 1988**

Performed and supervised RCRA remedial projects and waste management projects.

**Independent Consultant Geologist
Laguna Hills, CA and Tucson, AZ • 1982 - 1987**

Conducted geological investigations in western United States and Mexico. Performed geochemical sampling and geologic mapping. Prepared technical reports for clients and regulatory agencies.

**Environmental/Geotechnical Section Supervisor • TRW: Systems Engineering
Redondo Beach, CA • 1978 - 1981**

Directed environmental project management for Department of Defense and Department of Energy related projects in Western U.S. Project, including site selection, planning and environmental impact statements. Supervised staff consisting of geologists and environmental scientists.

**Assistant Geologist • Arizona Geological Survey
Tucson, AZ • 1972-1978**

Participated in environmental impact studies, geologic hazards analysis, landuse planning. Author of several landuse planning technical publications.

**Project Geologist and Staff Geologist • Various Geological Consulting & Mining Companies
Southwestern United States • 1968-1972**

Performed geochemical sampling, subsurface investigations including drilling, mineral property valuation and geologic mapping. Prepared geologic reports and maps.

OTHER CERTIFICATIONS, TRAINING AND SECURITY CLEARANCES

- ▼ Asbestos & Demolition Contractor (C-19, C-24) **HI LIC #21212**
- ▼ Certified Hazardous Materials First Responder, FEMA and Arizona Division of Emergency Services.
- ▼ OSHA Hazmat Worker and Supervisor
- ▼ Accredited Asbestos Building Inspector, Asbestos Contractor/Supervisor, Project Monitor, and Asbestos Abatement Project Designer.
- ▼ Accredited Lead Inspector and Lead Contractor Supervisor
- ▼ Continuing Education in Hazardous Materials Management, Environmental Studies and Environmental Regulations: 628 Classroom Hours since 1987 - Arizona State University, Tempe, AZ, Pima Community College, Tucson, AZ., & The Environmental Training Center Tucson, AZ.
- ▼ Security Clearance: Department of Defense, **TOP SECRET** (1980)
- ▼ Licensed Private Pilot - 1400 Hours, Single Engine, Land

Appendix D:

Acronyms and Abbreviations

Abbreviation	Definition
AST	Aboveground Storage Tank
ASHERA	(Federal) Asbestos Hazard Emergency Response Act
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BLM	Bureau of Land Management
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAA	Clean Air Act: Regulates Air Quality
CAMU	Corrective Action management Unit
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act: Federal Superfund for Cleanup of Environmental Contamination (1980, 1986)
CERCLIS	CERCLA Information System (data base)
CESQG	Conditionally Exempt SQG: Hazardous Waste Generator less than 100 kg/mo.
C.F.R.	Code of Federal Regulations: National Standard Regulations
COLIWASA	Composite Liquid Waste Sampler
CRC	Chlorofluorocarbon
CMU	Concrete Masonry Unit
CWA	Clean Water Act: Regulates Water Quality (1972, 1987)
CZMA	Coastal Zone Management Act
DLNR	Department of Land and Natural Resources
DOT	Department of Transportation: Administers hazardous Waste Containers-Marking-Labeling-Placarding and Transportation Procedures.
DOH	Department Of Health (State Of Hawaii)
DRASTIC	EPA Standardized System for Evaluating Groundwater Pollution Potential Using Hydrogeologic Settings.
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency: Administers CERCLA, RCRA and SARA
FID	Flame Ionization Detector
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act: Regulates Pesticides (1972, 1988)
FSP	Field Sampling Plan
FWPCA	Federal Water Pollution Control Act
HAP	Hazardous Air Pollutant
HCS	(OSHA) Hazard Communication Standard
HSWA	(Federal) Hazardous and Solid Waste Amendments of 1984
LEL	Lower Explosive Limit
LQG	Large Quantity Generators; Hazardous Waste Generator in Excess of 100 kg/mo.
LUST	Leaking Underground Storage Tank.
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MSDS	Material Safety Data Sheets: Hazard Information Required for Chemical Substances by OSHA
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants (Under CAA Regulations)
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operating and Maintenance
OCS	Outer Continental Shelf
OSHA	Occupational Safety and Health Act: Established Hazard Communication Program and Employee Right-to-Know Law (1970)
OVA	Organic Vapor Analyzer
PCB	Polychlorinated Biphenyls: Toxic Substance Used in Electric-Device Cooling.
PCII	Picocuries Per Liter
PEL	Permissible Airborne Exposure Level

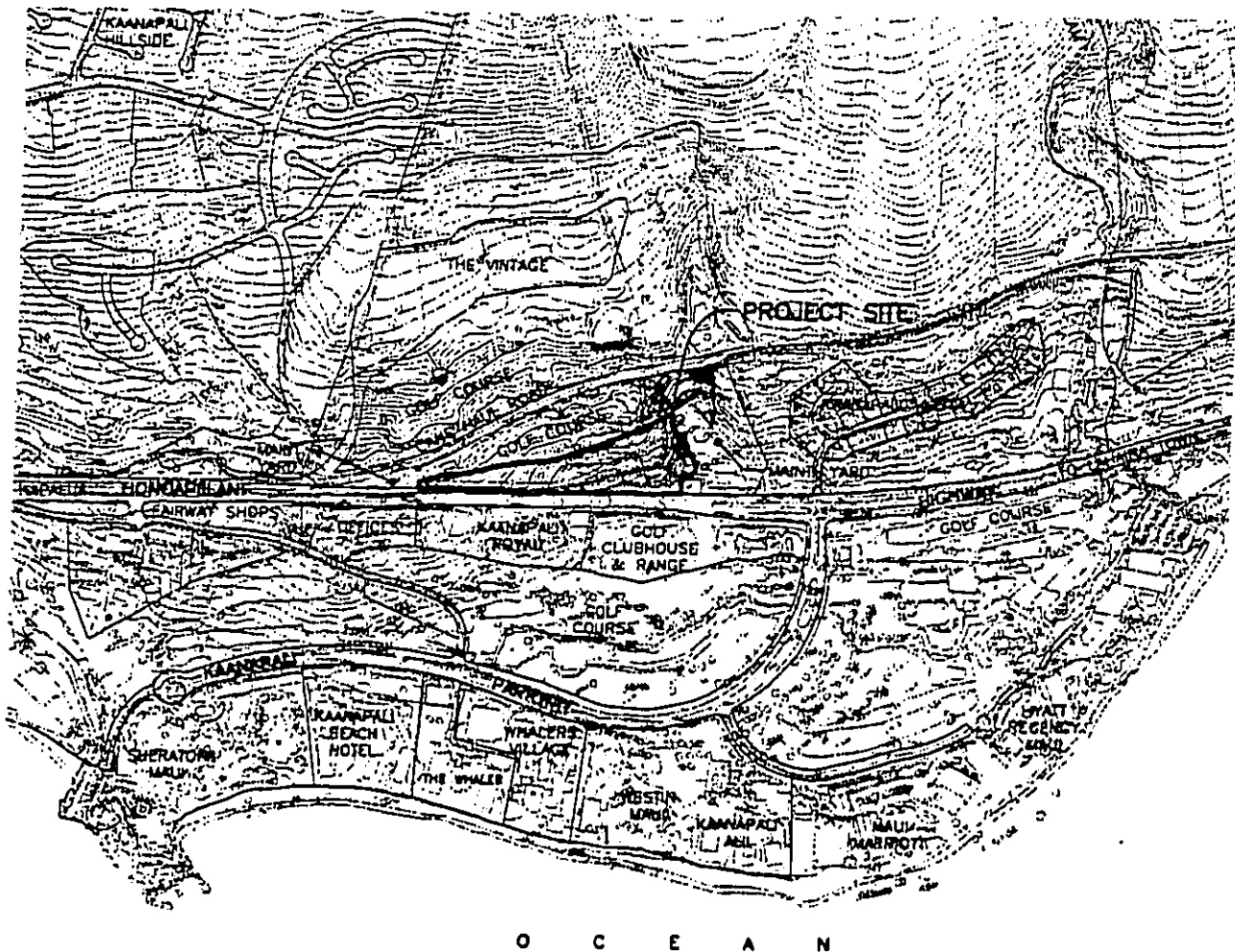
PID	Photoionization Detector
POTW	Publicly Owned Treatment Works
Ppb	parts per billion
Ppm	parts per million
PWP	Project Work Plan
PRPs	Potentially Responsible Parties
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RBCA	Risk Based Corrective Action and Decision-Making at Sites with Contaminated Soil and Groundwater. (Hawaii DOH)
RCRA	Resource Conservation and Recovery Act: Federal Hazardous Waste Management Law. Regulates Waste Generation, Transportation, Treatment, Storage or Disposal Sites (1976, 1984)
RQ	Reportable Quantity
RUST	Registry of Underground Storage Tanks
SAP	Sampling & Analysis Plan
SARA	Superfund Amendments and Reauthorization Act: Amends CERCLA and includes Community Right to Know Law. Requires facilities report their chemical inventories and emissions (1986).
SDWA	Safe Drinking Water Act: Establishes maximum contaminant levels for drinking water (1974, 1986).
SHSP	Site Health & Safety Plan
SIC	Standard Industrial Classification
SIP	State implementation plan
SPCC	Spill Prevention Control and Countermeasure
SQG	Small Quantity Generator: Hazardous Waste Generator between 100-1000 kg/mo.
TCLP	Toxicity Characteristic Leaching Procedure: A toxicity test for certain substances declared hazardous by the EPA.
TMK	(Hawaii) Tax Map Key
TPH	Total Petroleum Hydrocarbons
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act: Regulates PCBs in electrical devices and chromium in evaporative cooling towers, asbestos in schools. (1976)
TSD	Treatment, Storage, and Disposal
UEL	Upper Explosive Limit
UIC	Underground Injection Control
USGS	United States Geological Survey
UST	Underground Storage Tank
VOA	Volatile Organic Analyses
VOC	Volatile Organic Compound: EPA listed toxic or carcinogenic organic substances.
Minimal, Minor or Not Significant	1) An unlikely or remote event, i.e., possible, but not anticipated under current conditions and observed features. 2) Insignificant when compared to regulatory acceptance levels, guideline action levels or when compared to background and/or baseline conditions of the local environment. 3) Any potential effect or impact attributed to the subject factor may be considered as the least likely source among a number of potentially responsible factors. 4) Any potential effect may not be measurable or detected by current technology. 5) Education, experience, and background of the investigator were utilized to conclude the situation or condition as trifle.

APPENDIX G
Preliminary Engineering Report

PRELIMINARY ENGINEERING REPORT For Kaanapali Parcel 10-H

Lahaina, Maui, Hawaii

Tax Map Key (2) 4-4-006:056



Project:

Kaanapali Parcel 10-H
Lahaina, Maui, Hawaii

Date:

September 12, 2003

Client:

Landtec, Inc.
2530 Kekaa Drive, Suite C-1
Kaanapali, HI 96761
Phone: (808) 661-3232
Fax: (808) 661-1931

Consultant:



Ronald M. Fukumoto Engineering, Inc.
1721 Wili Pa Loop, Suite 203
Wailuku, Hawaii 96793
Phone: (808) 242-8611
Fax: (808) 244-7510
E-Mail: rfe@mauigateway.com

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I. PURPOSE

The purpose of this report is to evaluate the effects of the project on existing infrastructure. This report will review the water system, wastewater system, and electrical, telephone, and cable television systems serving the project. This report will also provide an analysis of existing and proposed drainage systems. The drainage analysis will describe existing drainage conditions, present preliminary grading and drainage plans, and provide drainage design information for incorporation into the final designs.

II. PROJECT DESCRIPTION

A. General Location

The project involves development of a 20 to 26-lot single-family residential subdivision in Lahaina, Maui. The site encompasses an area of 7.650 acres on the mauka side of Honoapiilani Highway approximately 800 feet north of the Kaanapali Parkway intersection. Honoapiilani Highway adjoins the westerly side of the site, the golf course maintenance facility adjoins the northerly side of the site, the golf course adjoins the easterly side of the site, and the private water company base yard and the County wastewater pump station adjoins the southerly side of the site.

There are many developed properties in the vicinity of the site. Properties on the makai side of the highway include the golf clubhouse and range, the Kaanapali Royal Condominiums, offices, and the Fairway Shops. Properties on the mauka side of the highway include the Kaanapali Vista residences to the South and the golf course and The Vintage at Kaanapali residences to the East.

The tax map designates this parcel as Tax Map Key (2) 4-4-006: 056. (See Figure 1 - Location Map (USGS Map), page 8; Figure 2 - Vicinity Map (Tax Map), page 9; and Figure 5 - Regional Topographic Map, page 12.)

B. Project Components

The project includes single-family homes, free-standing cottages, and related on-site improvements. Although the final number of lots has not been determined, a 23-lot subdivision will be assumed for this analysis. The zoning of the property is R-3 residential which requires a minimum lot area of 10,000 square feet and a minimum lot width of 70 feet. A main dwelling and an accessory dwelling are permitted on each lot. For lots with areas from 10,000 square feet to 21,779 square feet, the maximum gross floor area of the accessory dwelling is 600 square feet.

Site improvements include grading, asphaltic concrete private street, concrete driveways for the homes, landscape plantings, and site utilities. Site utilities consist of water, wastewater, electrical, telephone, and cable television; irrigation; and drainage systems. In addition, the project includes special on-site provisions for handling drainage. The work also includes

relocation of existing water, wastewater, drainage, and electrical systems.

III. WATER SYSTEM

The Hawaii Water Service Company, a private water company, provides water service for the area. The water system in the area consists of a 1.0-million gallon reservoir and various distribution lines. (See Figure 7 – Existing Utilities Plan, page 14.)

Preliminary data indicates that the existing water system can handle the domestic and fire protection demands of this project. The project's anticipated average daily water demand is 34,500 gallons per day, based on 1,500 gallons per day for each lot multiplied by 23 lots. For single-family residential zoning, the required fire flow, duration, and fire hydrant spacing are 1,000 gallons per minute, 2 hours, and 350 feet, respectively. Preliminary data also indicates that the existing sources can deliver the anticipated demands of this project. (See Hawaii Water Service Company response letter dated September 10, 2003 in Appendix A.)

Water system improvements for this project include 8-inch water lines, fire hydrants, and service laterals.

IV. WASTEWATER SYSTEM

The County of Maui provides a wastewater collection system for the area. The collection system carries wastewater to the Lahaina Wastewater Reclamation Facility for treatment and disposal. The wastewater collection system includes gravity sewers, force mains, and pump stations along Honoapiilani Highway. (See Figure 7 – Existing Utilities Plan, page 14.)

Preliminary data indicates that the existing collection system and treatment facility can handle the wastewater flows produced by this project. For a 23-lot subdivision, the project's anticipated average wastewater flow is 12,190 gallons per day. This total is based on 350 gallons per day for each main dwelling and 180 gallons per day for each cottage. During the early 1980's, Amfac, the owner of the parcel, funded an expansion of the Lahaina Wastewater Reclamation Facility and received an allocation of wastewater capacity for its Kaanapali properties. This property falls under Amfac's allocation of wastewater capacity. (See Wastewater Reclamation Division response letter dated July 10, 2003 in Appendix B.)

Wastewater improvements for this project include installing on-site gravity sewers and rerouting an existing sewer force main. The existing force main transports wastewater from the Kaanapali Resort through the subdivision site and discharges it into a gravity sewer line that flows to the Lahaina Wastewater Pump Station No. 2. Improvements consist of 8-inch sewer mains, 6-inch sewer laterals, and manholes. These lines will connect to the existing gravity sewer line at the pump station. In accordance with Wastewater Reclamation Division standards, service laterals and advance risers will be installed for all lots, and

manholes will be constructed at connections to existing sewer main lines.

V. ELECTRICAL, TELEPHONE & CABLE TELEVISION SYSTEMS

Maui Electric Company, Verizon Hawaii, and Oceanic Time Warner Cable provide electrical, telephone, and cable television service for the area. Major existing overhead lines run within the site along the Honoapiilani Highway right-of-way. In addition, an overhead line branches off from the main system along the highway and runs in the mauka direction across the southerly end of the site. (See Figure 7 – Existing Utilities Plan, page 14.)

Electrical, telephone, and cable television improvements for this project include new underground lines and relocation of existing overhead facilities.

VI. DRAINAGE SYSTEM

A. Topography

The site is primarily undeveloped land with trees, scrub vegetation, and grasses. There are, however, improvements on portions of the site. Such improvements include a paved single-lane roadway through the site, an old pump house building, an old electrical substation, and utility systems. Existing utility systems include a concrete drainage channel through the site, a sewer force main and gravity sewer lines, water lines, and overhead power and communication lines. Portions of the site are also used for a plant nursery.

Elevations of the site range from about 18 feet to 84 feet above mean sea level. The site generally slopes down from Northeast to Southwest. The steepest areas are at the southerly end of the site with slopes that range from about 20 to 40 percent. The central portion of the site has moderate slopes that range from about 9 to 12 percent. The flattest areas are at the northerly end of the site with slopes that range from about 4 to 8 percent. (See Figure 6 – Topographic Map, page 13.)

B. Soil

According to the Soil Conservation Service, the on-site soils include Wahikuli silty clay, 3 to 7 percent slopes (WbB), Wahikuli stony silty clay, 7 to 15 percent slopes (WcC), and Ewa silty clay loam, 0 to 3 percent slopes (EaA). The Wahikuli series consists of well-drained soils on uplands on the island of Maui. The survey characterizes the soil as having a dark reddish-brown surface layer approximately 15 inches thick with stones that hinder cultivation, moderate permeability, slow to medium runoff, and slight to moderate erosion hazard. The Ewa series consists of well-drained soils in basins and on alluvial fans on the islands of Maui and Oahu. The survey characterizes the soil as having a dark reddish-brown surface layer approximately 18 inches thick, moderate permeability, very slow runoff, and slight erosion hazard. (See Figure 3 – Soil Map, page 10.)

C. Flood and Tsunami Hazard

The flood insurance rate map of the area shows there are no flood hazard areas on the site. The flood insurance rate map designates the site as Zone C, an area subject to minimal flooding. (See Figure 4 - Flood Insurance Rate Map, page 11.)

D. Existing Drainage Improvements

An existing concrete drainage channel runs through the site. The channel begins at the northwesterly corner of the site, runs along the westerly side of the site along the highway for about 800 feet, changes direction and cuts through the lower one-third of the site, and curves toward the southeasterly corner of the site. The carrying capacity of this segment of the drainage channel is about 61 cfs. From this point, the channel continues along the perimeter of the adjoining maintenance yard and enters an underground drainage system. The underground drainage system consists of two 72-inch diameter drain pipes that run under the adjoining golf course parcel. The drain pipes continue under Halelo Street and connect to another concrete drainage channel on the south side of the street. This concrete drainage channel turns toward the south, runs along the perimeter of the golf course along the highway, and ends at Hahakea Stream.

There are also existing drainage improvements within Honoapiilani Highway. Such improvements include concrete and grassed swales along the shoulders of the highway and culverts under the highway. (See Figure 7 - Existing Utilities Plan, page 14 and Figure 8 - Existing Drainage Plan, page 15.)

E. Proposed Drainage Improvements

Proposed drainage improvements include swales, inlets, catch basins, manholes, and drain pipes. The proposed improvements consist of two separate parts that correspond to the separate points of discharge. Part 1 discharges runoff into the existing concrete drainage channel. Part 2 discharges runoff into the existing highway drainage system.

Part 1

The existing railroad tracks along the cane haul road form the upper limits of the Part 1 drainage area. From this upper limit, runoff flows across the golf course fairway and towards the proposed lots. To prevent this runoff from entering the lots, a grassed swale will be constructed within the golf course along the project's easterly property line. Inlets within the swale will collect runoff and direct it to the roadway drainage system.

The roadway drainage system consists of catch basins, manholes, and a main drain pipe along the entire length of the roadway that replaces the function of the existing concrete drainage channel. This main drain pipe connects to the existing drainage channel at the southeasterly corner of the site. The computed 50-year design flow at this point is about 32 cfs. The existing channel, with a capacity of about 61 cfs, can adequately carry the design

flow.

Part 2

The makai edge of the subdivision roadway and the line between Lot 16 and Lot 17 form the upper limits of the Part 2 drainage area. Under existing conditions, runoff from this area flows into the highway and enters a 24-inch culvert. The 24-inch culvert would carry the runoff under the highway and into the golf clubhouse and range area. This runoff is eventually discharged into the water hazard within the golf course. However, instead of allowing the runoff to flow directly into the highway, it will be contained on the site and the outflow into the highway will be controlled. (See Figure 9 – Drainage Area Map, page 16.)

Special on-site provisions for handling Part 2 runoff include a drainage basin consisting of a large-diameter perforated pipe, a flow control manhole, and an outlet structure. These special provisions will keep the post-development flow rates and volumes and pre-development levels.

The County drainage standards require the use of a 50-year, 1-hour rainfall for computing volumes and rates of flow. However, there are more stringent guidelines contained in the West Maui Watershed Owner's Manual prepared by the West Maui Watershed Management Advisory Committee. Because this project is in West Maui, the more stringent guidelines will be used.

The design criteria for Part 2 include:

- Maintaining pre-development runoff volumes for a 2-year, 24-hour storm
- Maintaining pre-development peak flow rates for a 50-year, 24-hour storm

Drainage design will be based on the Soil Conservation Service (SCS) method described in *Urban Hydrology for Small Watersheds*, Technical Release 55. The SCS, a branch of the United States Department of Agriculture, is now known as the Natural Resources Conservation Service (NRCS). This method is commonly referred to as TR-55. TR-55 incorporates procedures for computing storm runoff volumes, peak rates of discharge, hydrographs, and storage volumes.

Drainage improvements that involve transmission of storm flows will conform to the "Rules for the Design of Storm Drainage Facilities in the County of Maui." The rules will be applied to the sizing and spacing of inlets and manholes, and sizing of drain lines, channels, and culverts. Based on the County rules, the drainage system will be designed to handle a storm with a recurrence interval of 50 years since the drainage area is less than 100 acres.

The following is a summary of hydrologic design data for Part 2. (See preliminary drainage information in Appendix C.)

<u>Item</u>	<u>Existing</u>	<u>Developed</u>
Drainage Area	2.13 acres	1.60 acres
2-year, 24-hour Rainfall	3.7 inches	3.7 inches
2-year, 24-hour Volume	5,180 cubic feet	8,420 cubic feet
50-year, 24-hour Rainfall	8.8 inches	8.8 inches
50-year, 24-hour Peak Flow	5 cfs	6 cfs

The increase in the rate of runoff and volume of runoff will be mitigated by constructing the drainage basin. The drainage basin will collect runoff, regulate the outflow of runoff, and retain a portion of the collected runoff. As shown in the preliminary computations, a detention volume of 4,520 cubic feet is required to reduce the peak outflow from 6 cfs to 5 cfs.

The required volumes will be provided by a 6-foot diameter by 102-foot long subsurface perforated pipe embedded in a 2-foot thick rock cradle.

The Preliminary Grading and Drainage Plan shows the proposed grading and drainage improvements. (See Figure 10 - Preliminary Grading and Drainage Plan, page 17). The plan involves substantial grading work and retaining walls to create building pads for the residences. Approximate earthwork volumes include 20,700 cubic yards of cut and 19,200 cubic yards of fill.

The following is a summary of preliminary design data for the drainage basin. These figures are subject to adjustment as the designs are further refined.

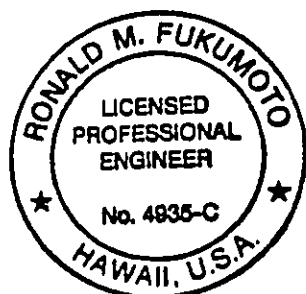
Detention Volume	4,520 cubic feet
Retention Volume	3,240 cubic feet
Flow Rate In	6 cfs
Flow Rate Out	5 cfs

F. Conclusion

There will be no adverse effects on the adjacent or downstream properties due to this project. This conclusion is based on collecting and discharging runoff into an adequate drainageway, and maintaining peak discharge rates and volumes at pre-development levels.

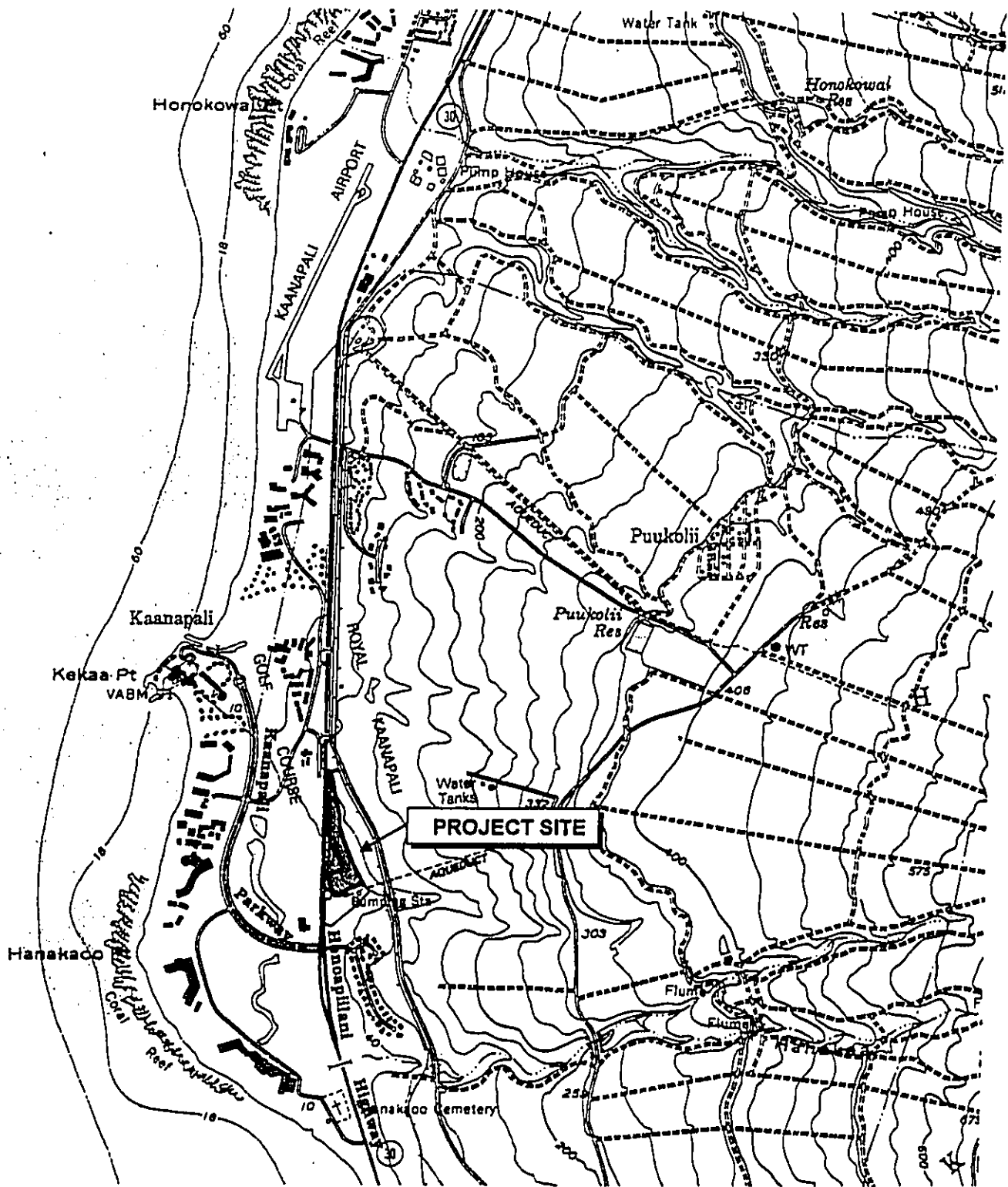
VII. REFERENCES

1. City and County of Honolulu, Department of Public Works, Division of Engineering, *Storm Drainage Standards*, Honolulu, Hawaii, May 1988.
2. County of Maui, "Title MC-15, Department of Public Works and Waste Management, Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui," Wailuku, Hawaii, November 1995.
3. Federal Emergency Management Agency, Federal Insurance Administration, *Flood Insurance Study, Maui County, Hawaii*, December 1, 1980.
4. R. M. Towill Corporation, *Drainage Master Plan for the County of Maui*, Honolulu, Hawaii, October 1971.
5. U. S. Department of Agriculture, Soil Conservation Service, *Erosion and Sediment Control Guide for Hawaii*, Honolulu, Hawaii, March 1981.
6. U. S. Department of Agriculture, Soil Conservation Service, *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, Washington, D.C., August 1972.
7. U. S. Department of Agriculture, Soil Conservation Service, *Urban Hydrology for Small Watersheds*, Technical Release 55, Second Edition, Washington, D.C., June 1986.
8. U. S. Department of Commerce, Weather Bureau, *Rainfall-Frequency Atlas of the Hawaiian Islands for Areas to 200 Square Miles, Durations to 24 Hours, and Return Periods from 1 to 100 Years*, Technical Paper No. 43, Washington, D.C., 1962.
9. West Maui Watershed Management Advisory Committee, *West Maui Watershed Owners Manual*, Honolulu, Hawaii, November 1997.



This work was prepared by
me or under my supervision.

Ronald M. Fukumoto



LOCATION MAP (USGS MAP)

SCALE IN FEET



Figure 1

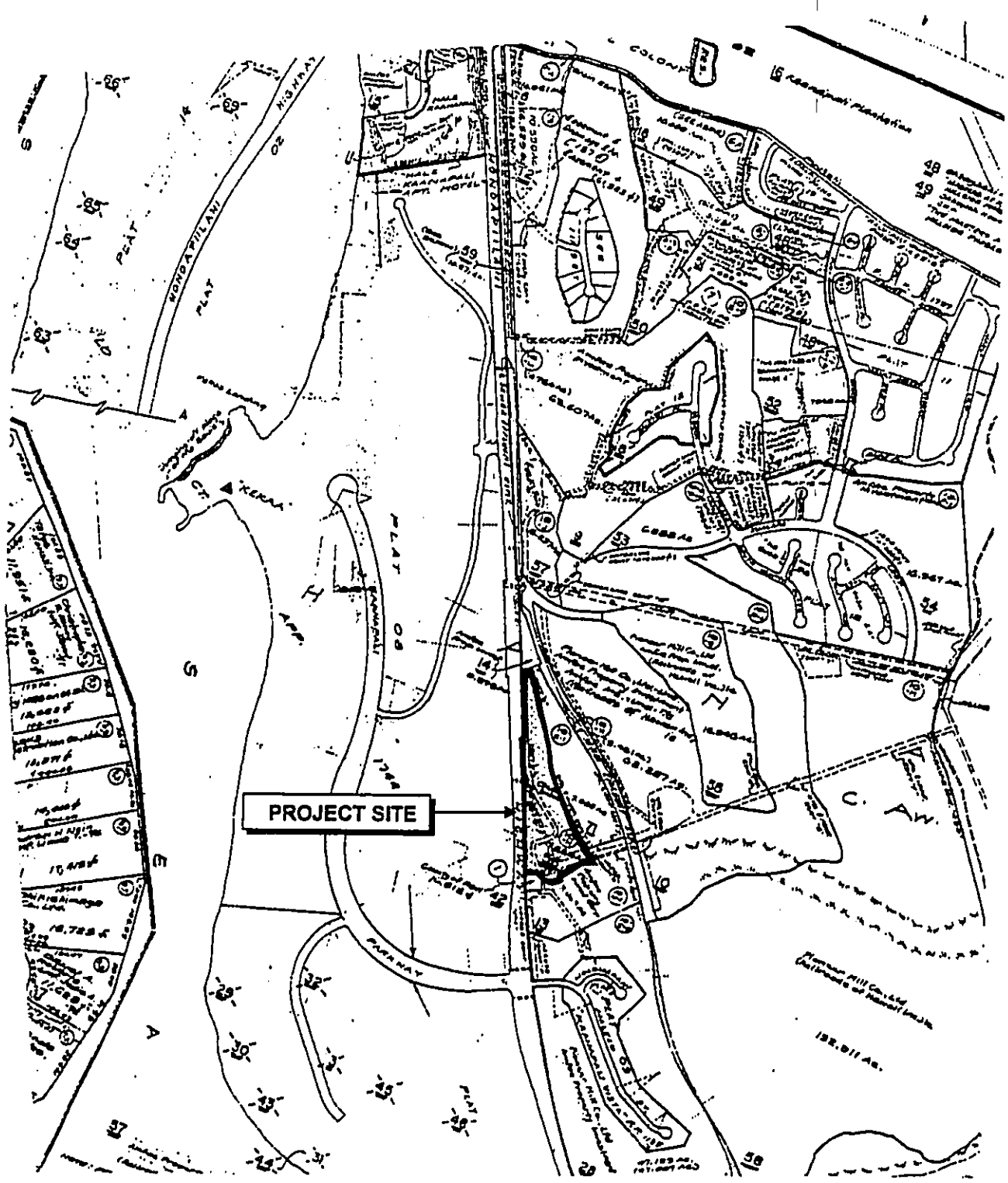
SOURCE: USGS LAHAINA QUADRANGLE MAP



PREPARED FOR: LANDTEC, INC.

BY: RONALD M. FUKUMOTO ENGINEERING, INC.

PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H



VICINITY MAP (TAX MAP)

SCALE IN FEET



Figure 2

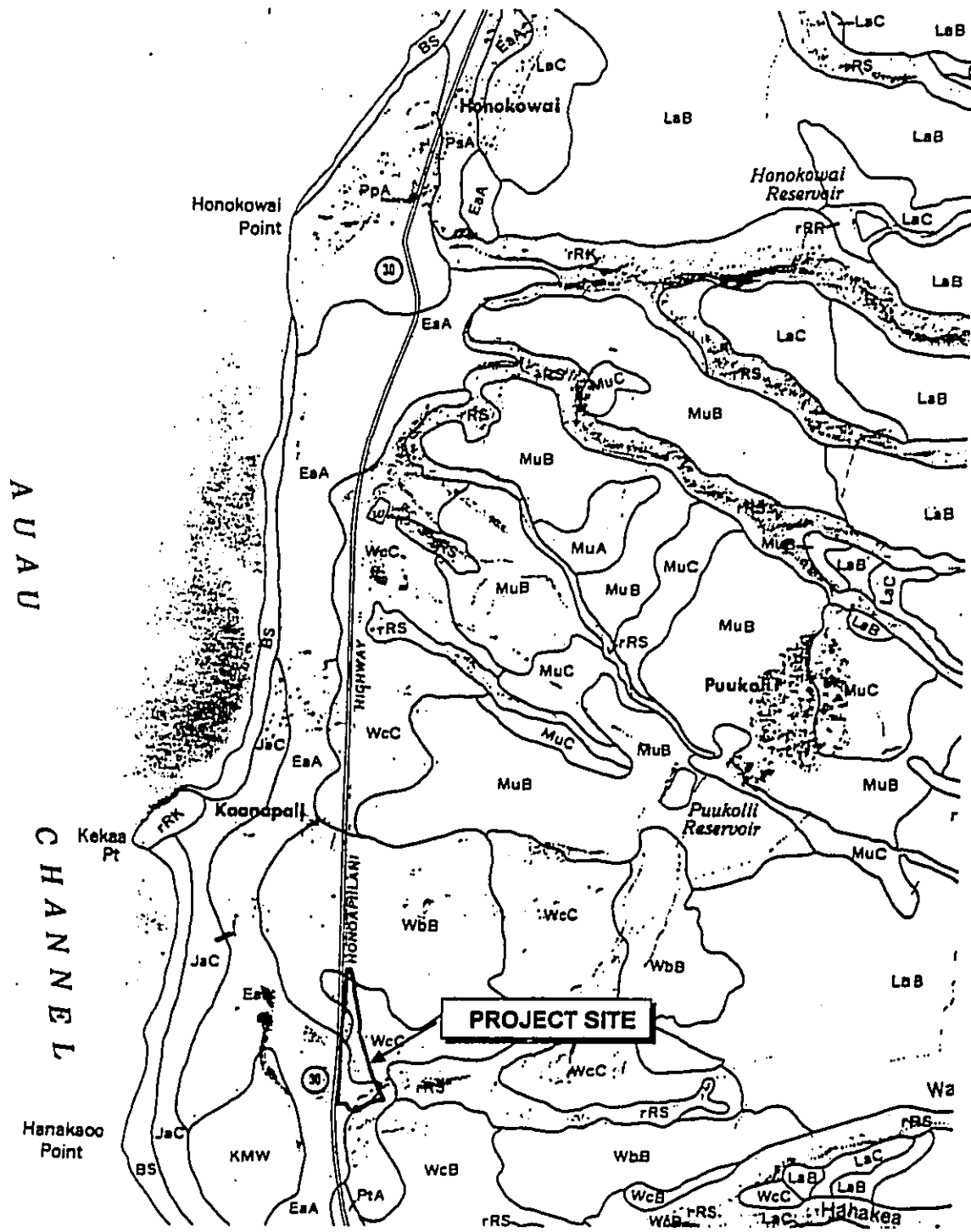
SOURCE: TAX MAP KEY (2) 4-4-006:056

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BY: RONALD M. FUKUMOTO ENGINEERING, INC.



PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H



SOIL MAP
SCALE IN FEET

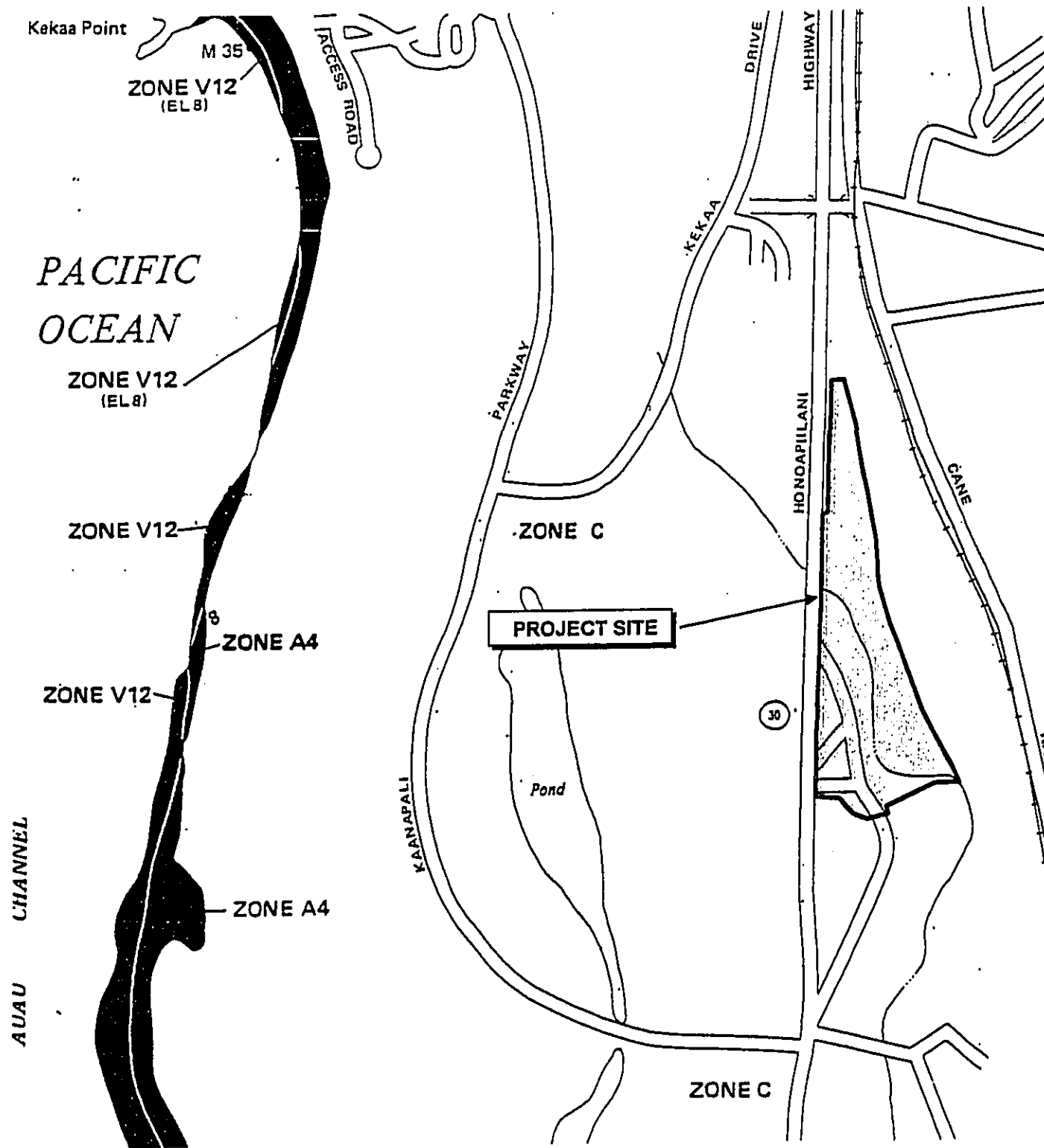
NORTH 0 1000 2000 4000 6000

Figure 3
SOURCE: SOIL SURVEY



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FLOOD INSURANCE RATE MAP

SCALE IN FEET



Figure 4

SOURCE: FIRM COMM. PANEL NO. 150003 0153C



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PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H

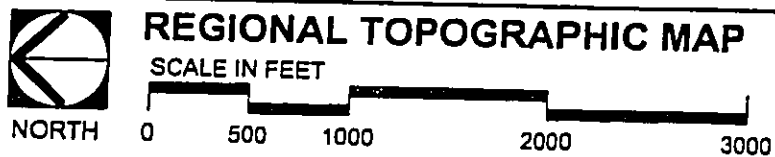
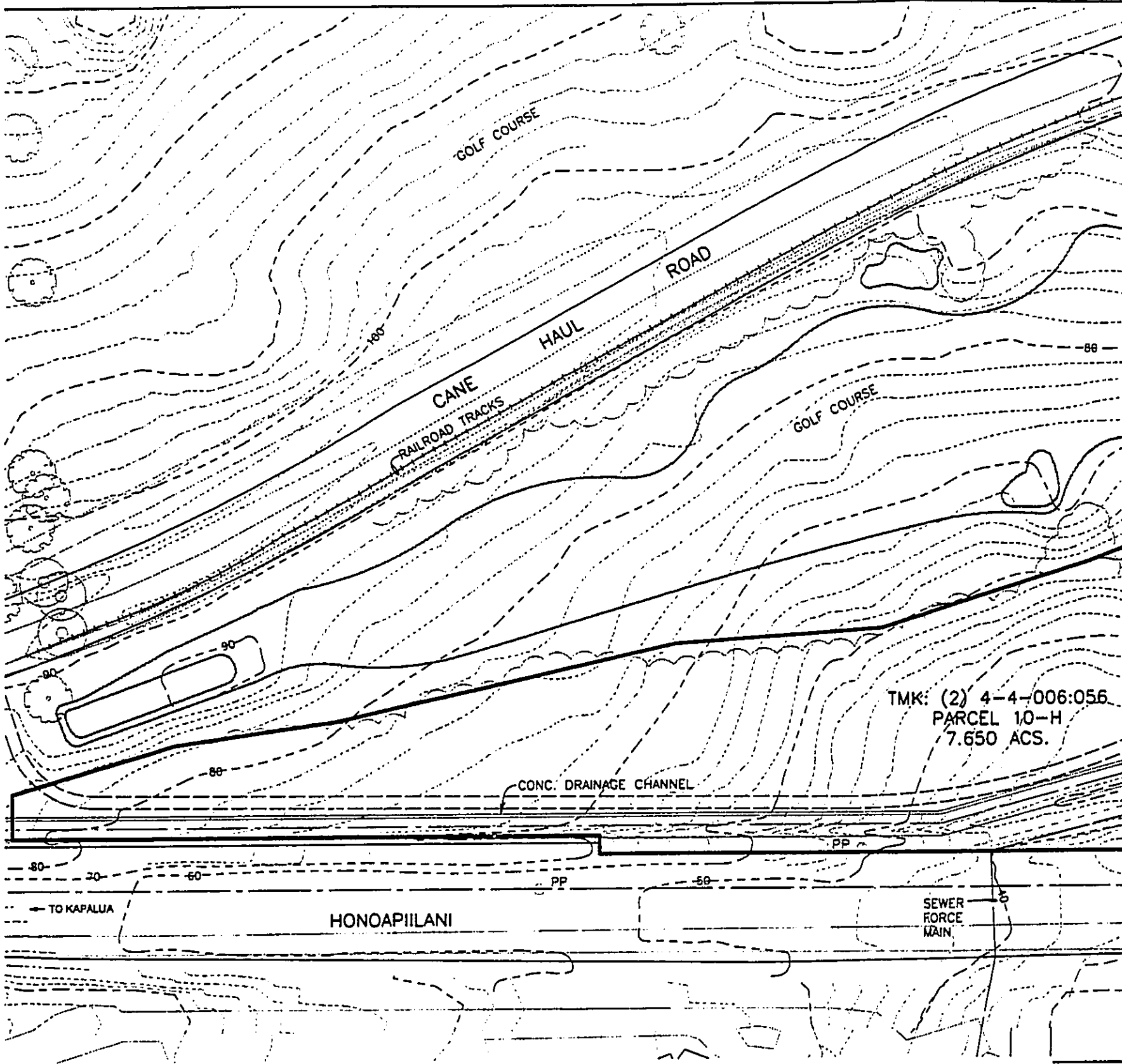


Figure 5
 DATE: 9/12/03

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 PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H





LEGEND:

- 40--- EXISTING CONTOUR
- PP EXISTING POWER POLE



NORTH

PREPARED

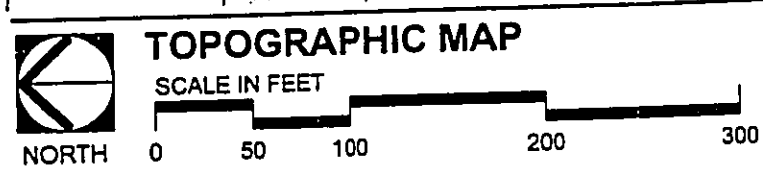
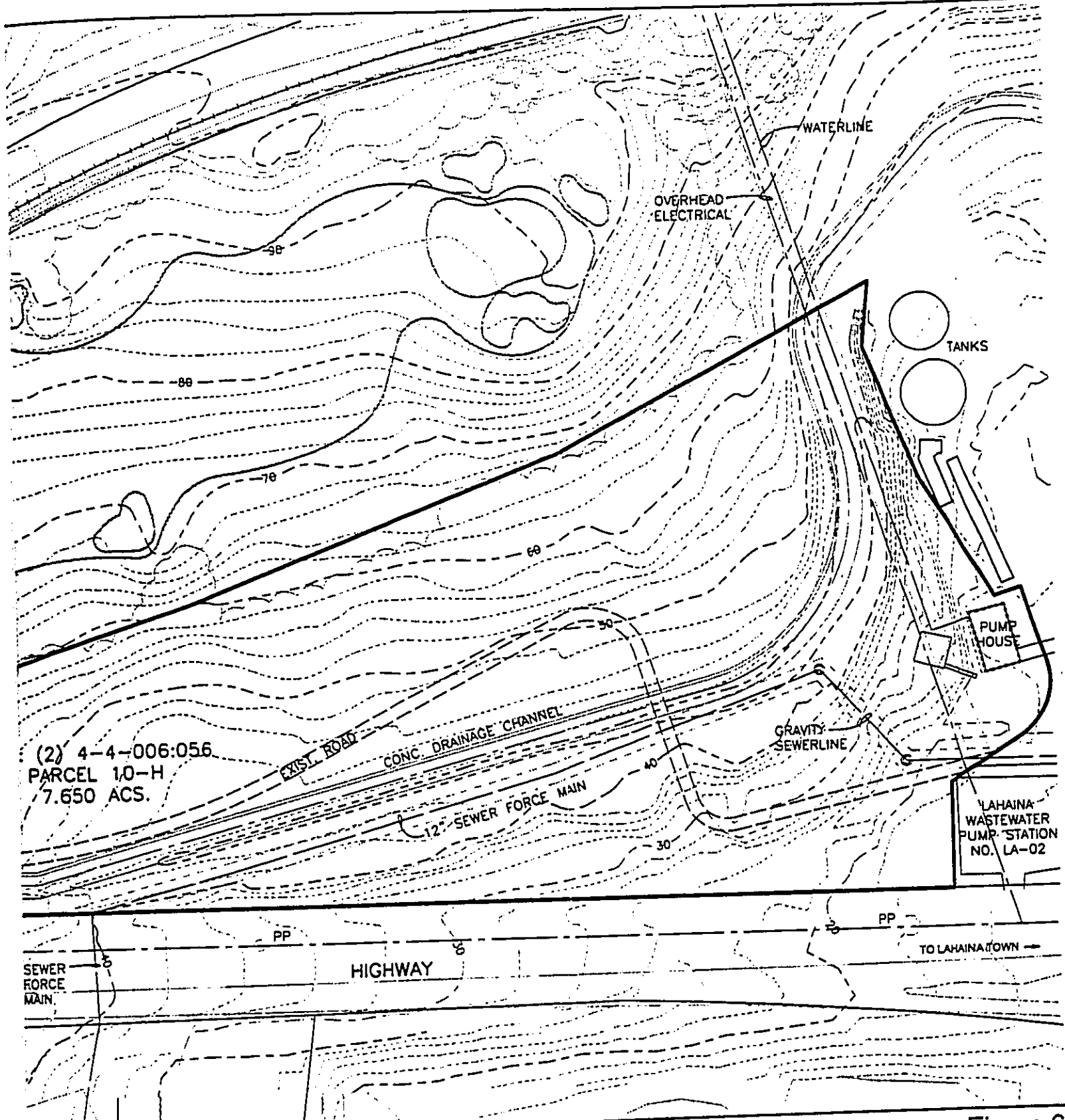
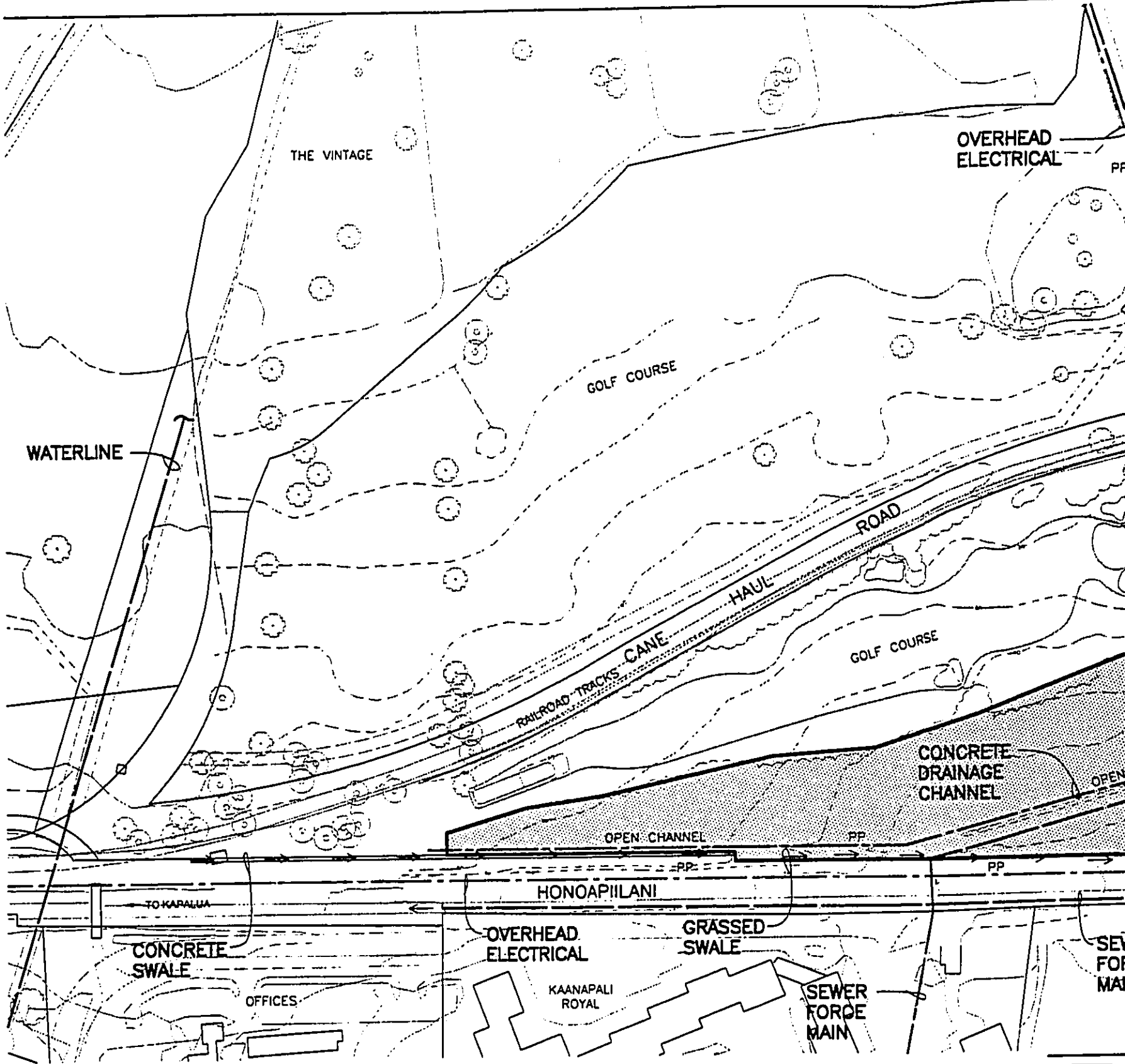


Figure 6
DATE: 9/12/03



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 PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H



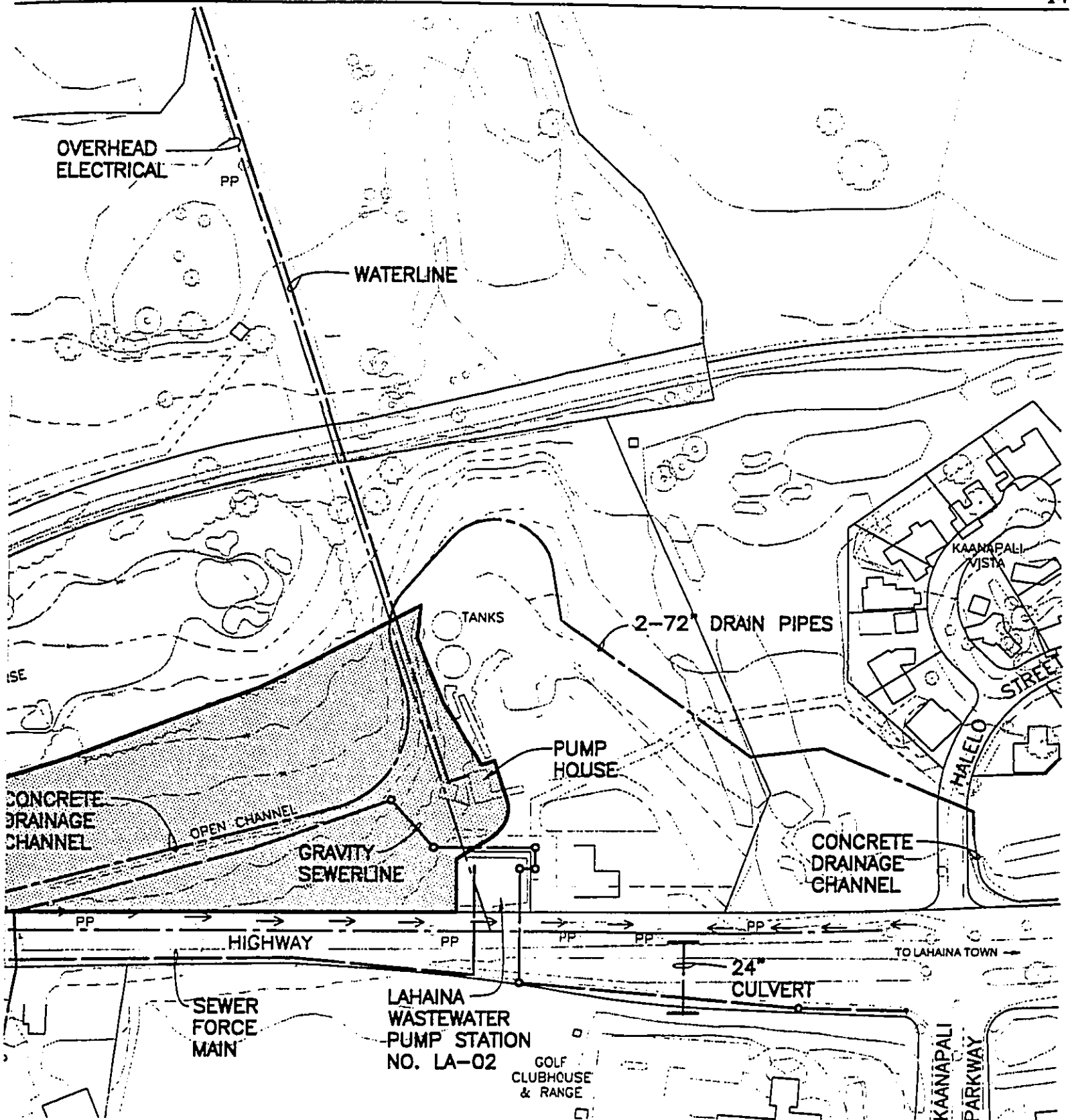
LEGEND:

- EXISTING CONTOUR
- EXISTING SWALE
- PP EXISTING POWER POLE
- ⊙ EXISTING SEWER MANHOLE



NORTH

PREPARED



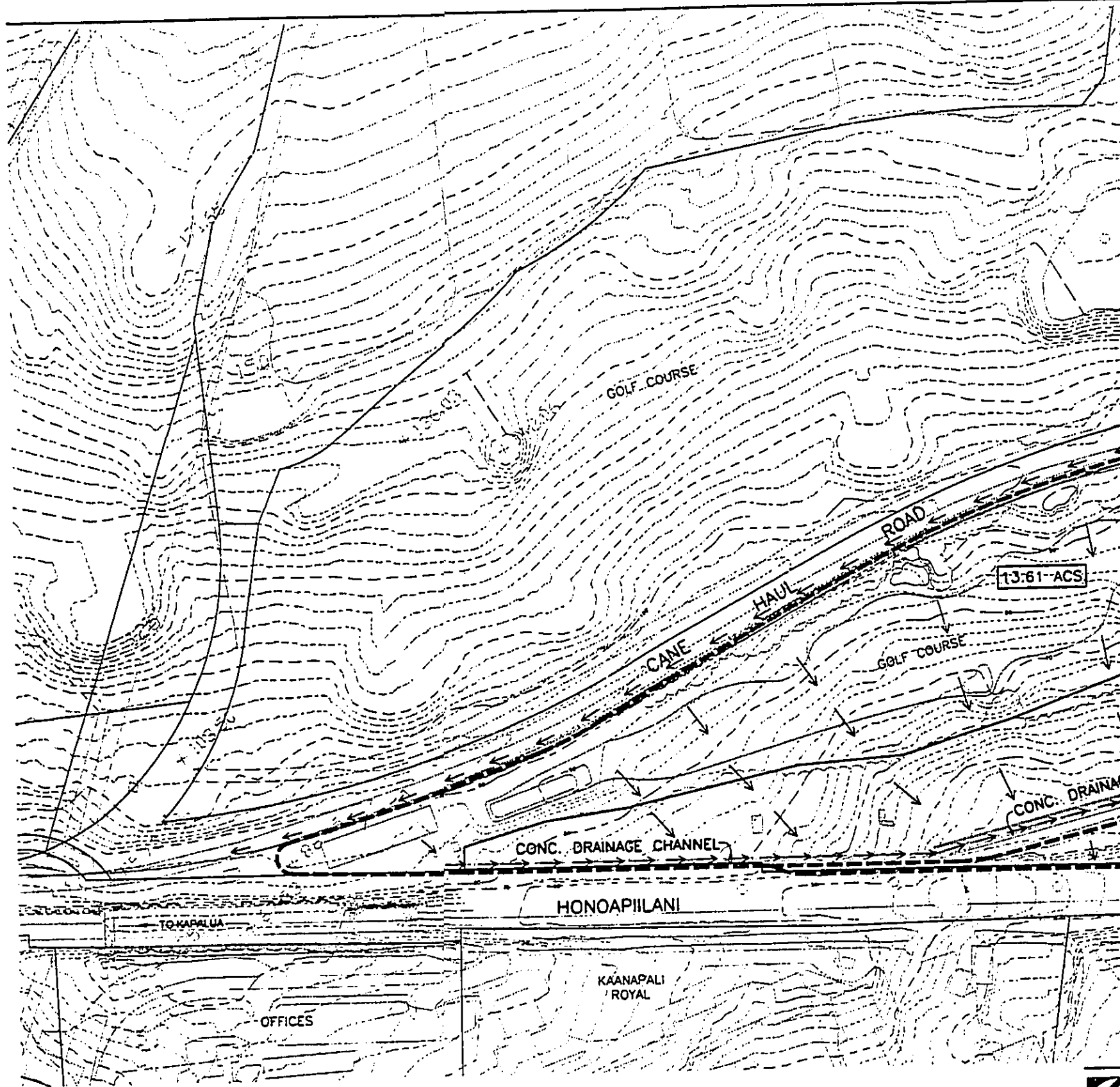
EXISTING UTILITIES PLAN
 SCALE IN FEET
 NORTH 0 100 200 400 600

Figure 7
 DATE: 9/12/03

PREPARED FOR: LANDTEC, INC.

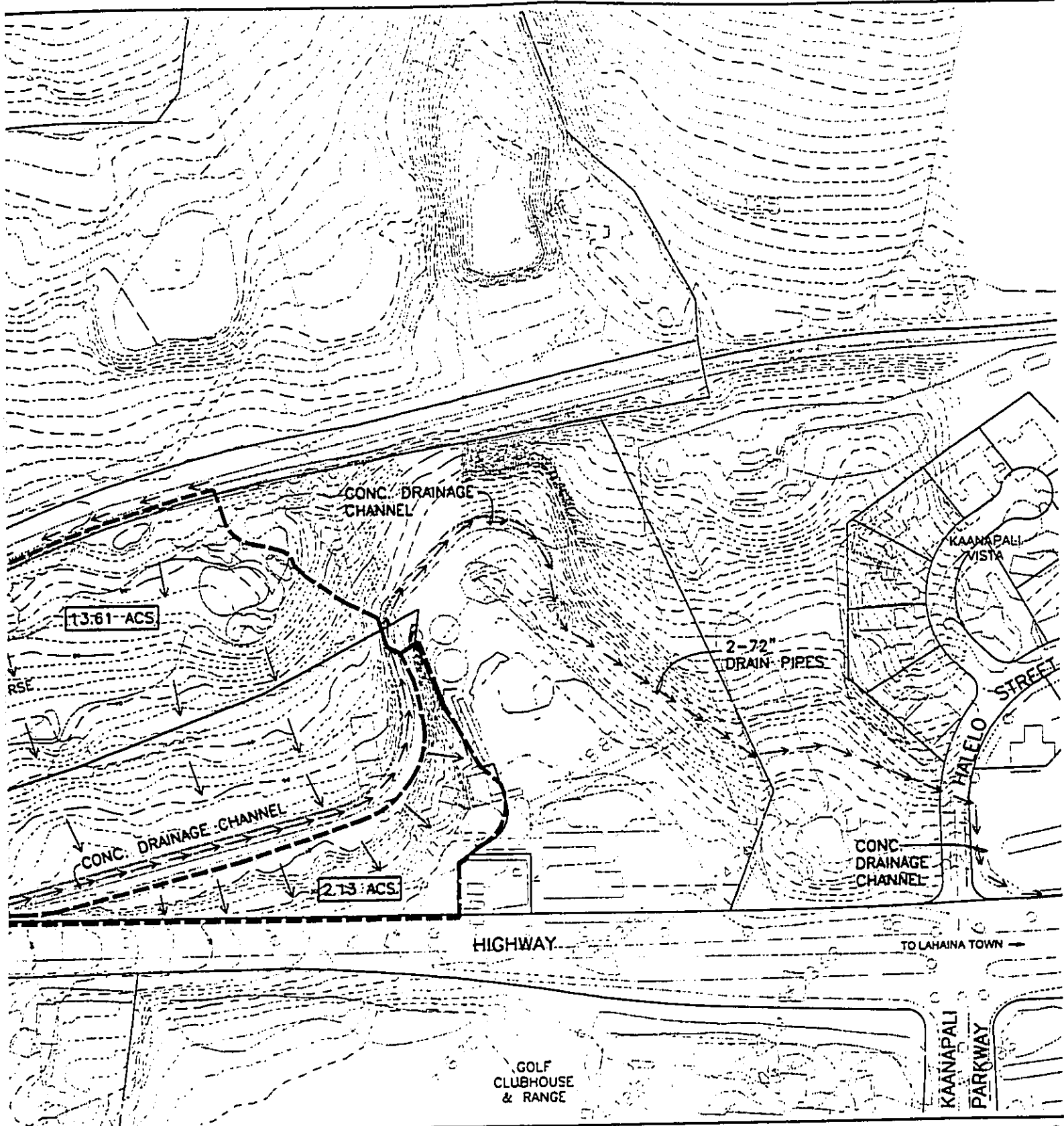
PREPARED BY: RONALD M. FUKUMOTO ENGINEERING, INC.
 PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H





NOR

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NORTH

EXISTING DRAINAGE PLAN

SCALE IN FEET



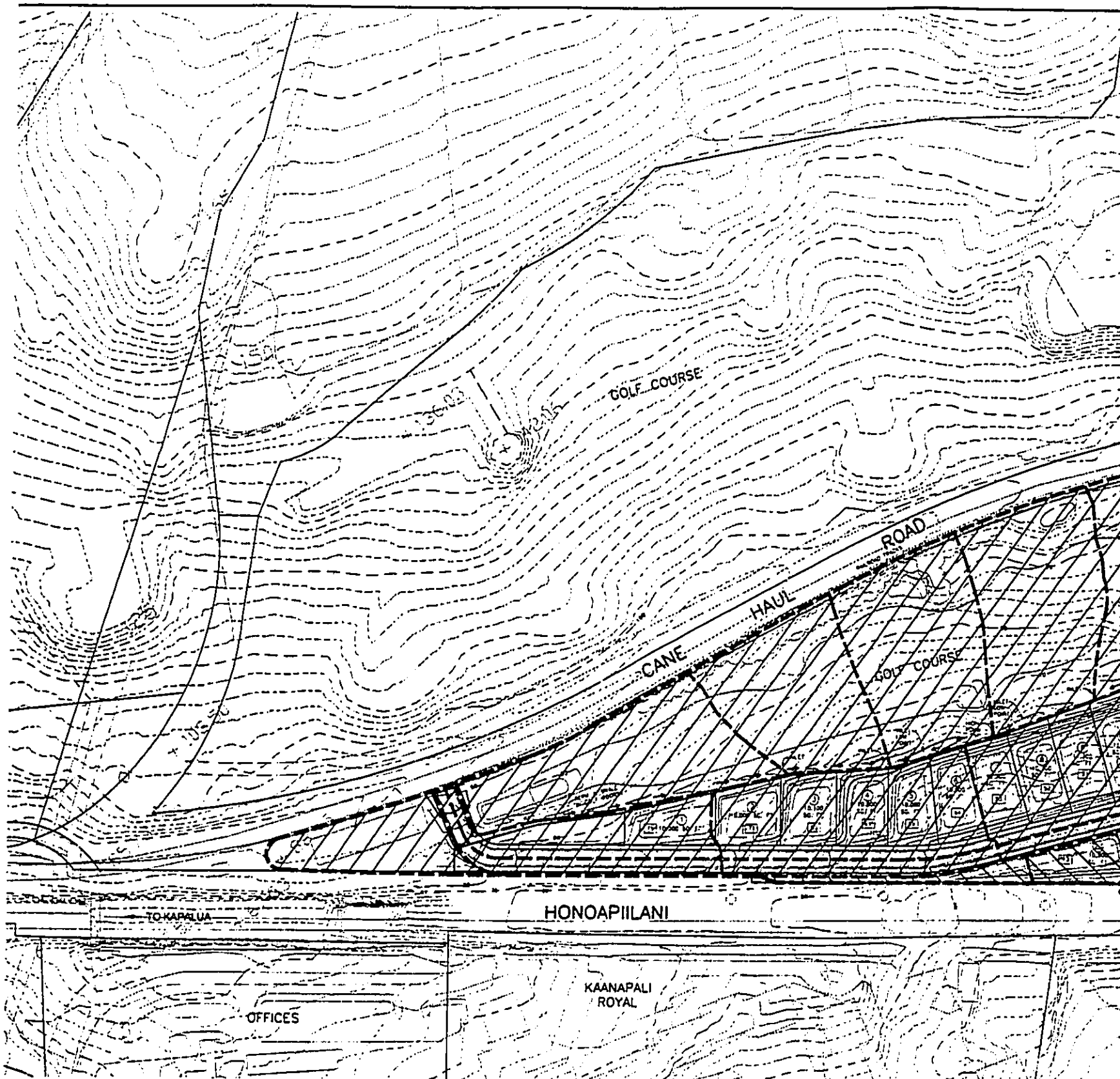
Figure 8

DATE: 9/12/03






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PRELIMINARY ENGINEERING REPORT FOR KAA NAPALI PARCEL 10-H



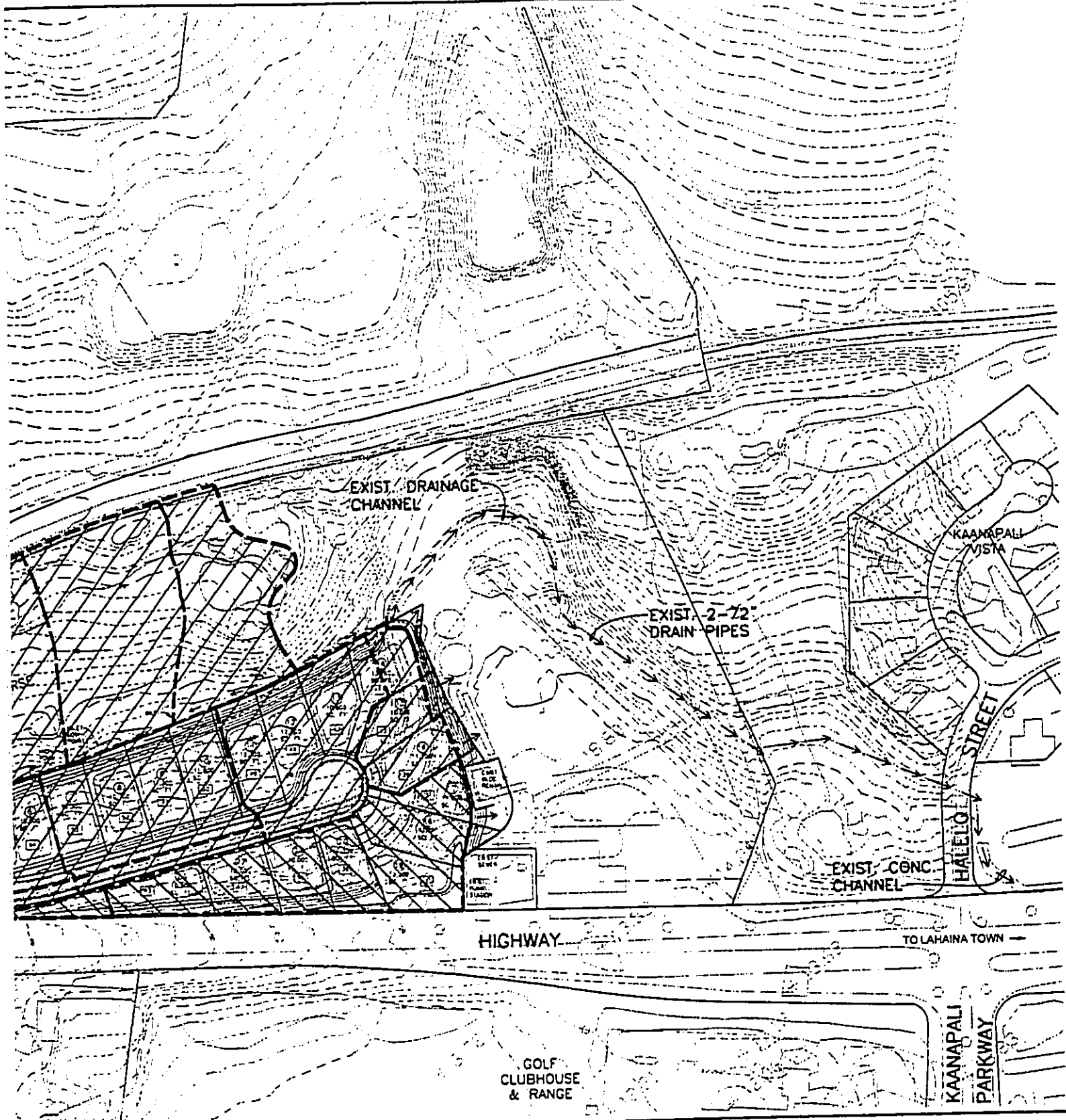
LEGEND:

-  LIMITS OF DRAINAGE AREA
-  DRAINAGE AREA TO EXIST. DRAINAGE CHANNEL
-  DRAINAGE AREA TO HIGHWAY



NORTH

PREPAR



NORTH

DRAINAGE AREA MAP

SCALE IN FEET



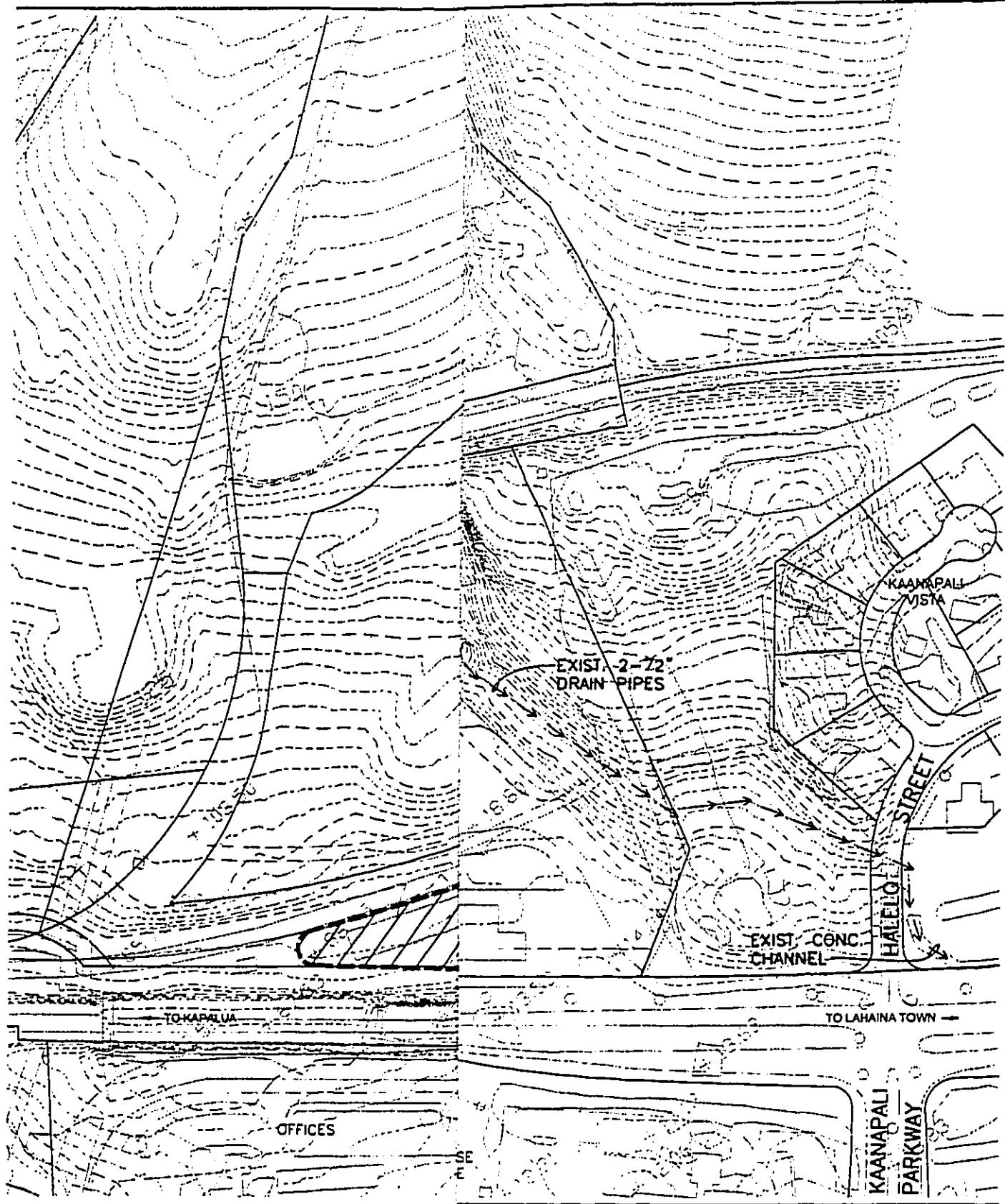
Figure 9

DATE: 9/12/03






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LEGEND:

-  LIMITS OF DRAINAGE AREA
-  DRAINAGE AREA TO EXIST. DRAINAGE CH
-  DRAINAGE AREA TO HIGHWAY

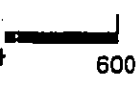
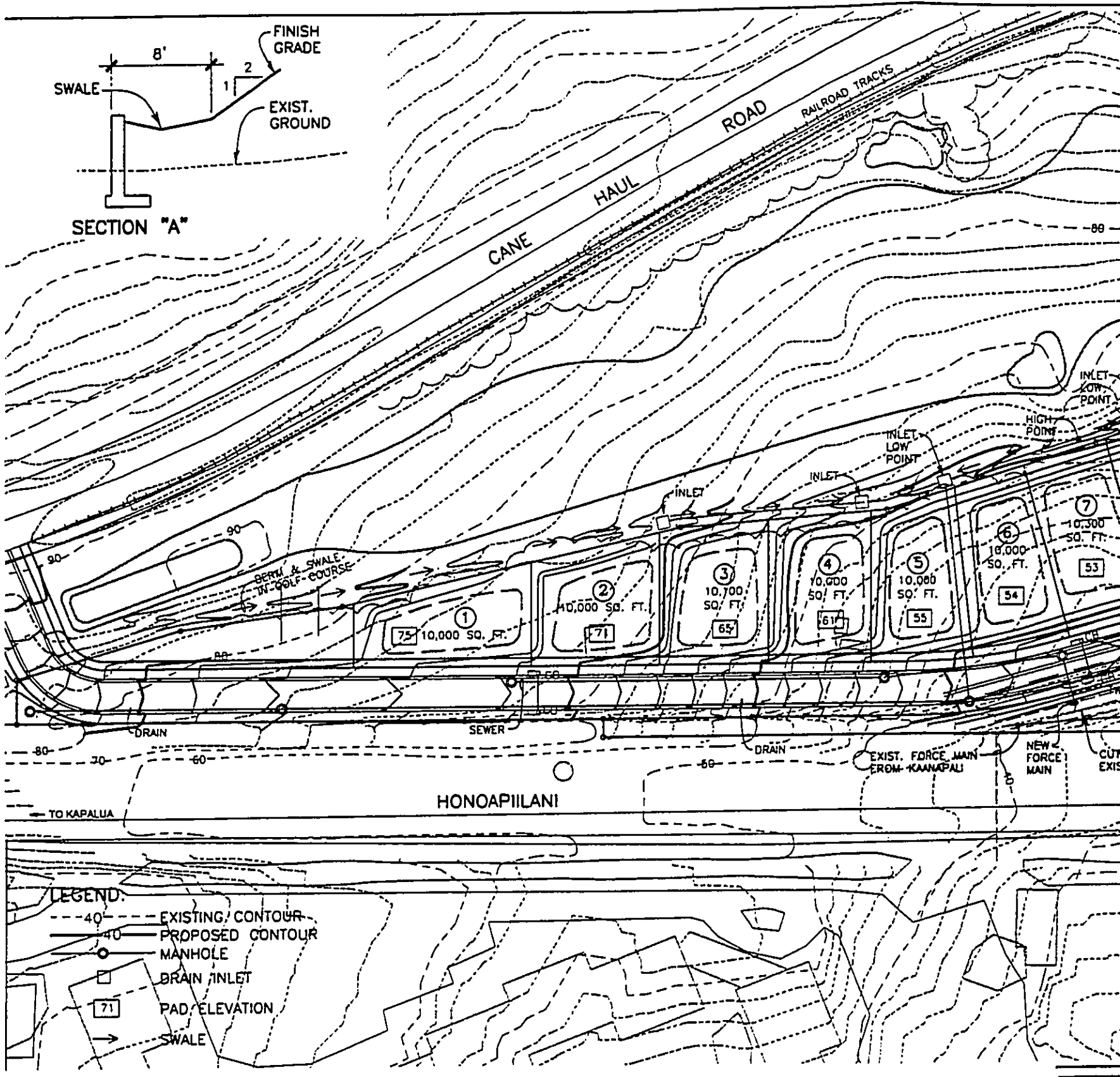


Figure 9
DATE: 9/12/03



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PRELIMINARY ENGINEERING REPORT FOR KAA NAPALI PARCEL 10-H



EARTHWORK QUANTITIES:

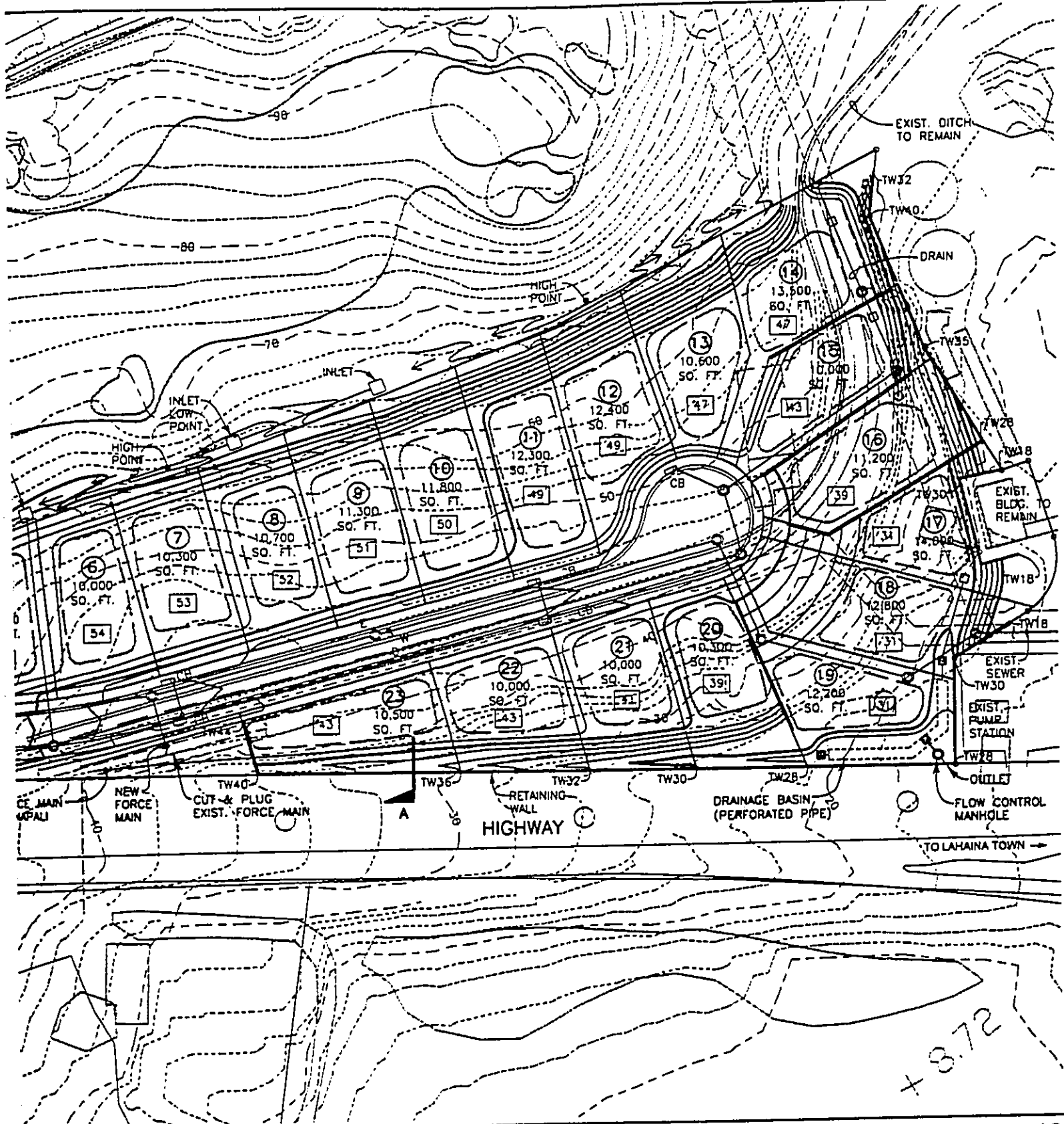
EXCAVATION: 20,700 CU. YDS.
 EMBANKMENT: 19,200 CU. YDS.
 AREA: 8.5 ACS.

- LEGEND:**
- - - - - EXISTING CONTOUR
 - — — — PROPOSED CONTOUR
 - — — — MANHOLE
 - — — — DRAIN INLET
 - 71 — — — PAD ELEVATION
 - — — — SWALE



NORTH

PREPARED



PRELIMINARY GRADING & DRAINAGE PLAN

Figure 10
DATE: 9/12/03



NORTH

SCALE IN FEET



PREPARED FOR: LANDTEC, INC.



PREPARED BY: RONALD M. FUKUMOTO ENGINEERING, INC.
PRELIMINARY ENGINEERING REPORT FOR KAAPALI PARCEL 10-H

PRELIMINARY WATER INFORMATION



HAWAII WATER SERVICE COMPANY
P.O. BOX 13770
LAHAINA, HI 96761 • (808) 661-4510

September 10, 2003

Mr. Ronald M. Fukumoto, P.E., L.S.
Ronald M. Fukumoto Engineering, Inc.
1721 Wil Pa Loop, Suite 203
Wailuku, HI 96793

Dear Mr. Fukumoto:

Subject: Proposed Kaanapali Parcel 10-H Subdivision
T.M.K. (2) 4-4-006:058

This letter is in response to your letter dated July 7, 2003, requesting an evaluation of the adequacy of the Hawaii Water Service Company's system to provide the water needed for the proposed project. Because plans were not available to us at the time of our evaluation, certain assumptions were made, such as the location of the project's tie-in to our existing distribution system. For the purpose of this evaluation, the tie-in was assumed to be the 12-inch water main running mauka-makai from our lower 1.5 million gallon reservoir to Honoapiilani Highway, at a point as it crosses the Cane Haul Road. However, we will require the project's new water distribution system be "looped" in order to ensure reliable water service and maintain water quality for the consumers.

Based on the project's average daily demand of 34,500 gpd, it appears that the existing Hawaii Water Service Company system is adequate to meet the needs of the proposed project.

Please advise the developers that we will require them to reimburse us for the any costs we incur for this evaluation or for any future reviews provided by our engineering consultants.

We would appreciate receiving two (2) sets of water system construction plans upon their availability.

Sincerely,

A handwritten signature in black ink that reads "Jeffrey K. Eng".

Jeffrey K. Eng
General Manager

DISTRICT OFFICE: KAA NAPALI



RONALD M. FUKUMOTO ENGINEERING, INC.
Civil Engineering & Land Surveying Consultants

July 7, 2003

Ronald M. Fukumoto, PE, LS
Eric H. Yamashige, PE, LS
1721 Wili Pa Loop, Suite 203
Wailuku, Hawaii 96793
Phone: (808) 242-8611
Fax: (808) 244-7510
E-mail: rfe@mauigateway.com

Mr. Jeffrey Eng, General Manager
Hawaii Water Service Company
P. O. Box 13220
Lahaina, Hawaii 96761

Dear Mr. Eng:

Subject: PROPOSED KAAPALI PARCEL 10-H SUBDIVISION
Tax Map Key (2) 4-4-006: 056

We are sending you this letter, on behalf of our client, Landtec, Inc., to request information on the availability of water for a proposed subdivision in Lahaina, Maui. We're preparing a preliminary engineering report as part of a community plan amendment for the project and would like to include such data in the report. The community plan amendment involves changing the current light industrial designation to single-family residential.

Our client's project involves a subdivision of a 7.65-acre parcel located on the mauka side of Honoapiʻilani Highway approximately 1,000 feet north of the intersection of the highway and Kaanapali Parkway. The tax map designates this parcel as Tax Map Key (2) 4-4-006:056. The project will consist of about 23 house lots with a main dwelling and 500-square foot cottage on each lot.

Based on current County of Maui Department of Water Supply standards, the average daily water demand would be 27,600 gallons per day. This amount is based on 600 gallons per day for each dwelling multiplied by 46 units. We understand, however, that your records show water usage of about 1,500 gallons per day per lot for similar projects in the area. Based on this figure, the average daily water demand would be 34,500 gallons per day.

Please confirm if the Hawaii Water Service Company can provide water service for the project and if the distribution system in the area is adequate.

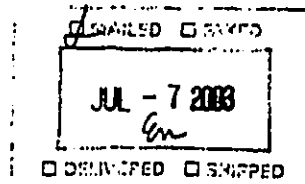
Thank you for your assistance.

Sincerely,

Ronald M. Fukumoto, PE, LS
President

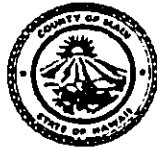
Copy: Bob Johnston - Landtec, Inc.

LDT002



PRELIMINARY WASTEWATER INFORMATION

ALAN M. M. ARAKAWA
Mayor
GILBERT S. COLOMA-AGARAN
Director
MILTON M. ARAKAWA, A.I.C.P.
Deputy Director



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

July 10, 2003

RALPH NAGAMINE, L.S., P.E.
Development Services Administration
TRACY TAKAMINE, P.E.
Wastewater Reclamation Division
LLOYD P.C.W. LEE, P.E.
Engineering Division
JOHN HARDER
Solid Waste Division
BRIAN HASHIRO, P.E.
Highways Division

Mr. Ronald Fukumoto
Ronald M. Fukumoto Engineering, In.
1721 Will Pa Loop Suite 203
Wailuku, HI 96793

Fax: 244-7510

Dear Mr. Fukumoto,

**SUBJECT: Kaanapali Parcel 10-H Subdivision
TMK (2) 4-4-006:056**

We have reviewed your request for information for the subject project and have the following comments:

1. Per our records this parcel falls within the Amfac area of service. You will need to obtain a letter from Amfac to the County of Maui designating that 12,190 gpd of their allocation be designated for this project. Currently, it appears that Amfac has 1.5 mgd of unused allocation.
2. The Lahaina Wastewater Reclamation Facility (LWWRF) is capable of treating 9.0 mgd. Current daily flow is approximately 5.5 mgd. Allocated flow is approximately 6.4 mgd.
3. Although wastewater system capacity is currently available as of July 10, 2003, the developer should be informed that capacity cannot be ensured until the issuance of the building permits.
4. According to our records the collection system from Lahaina Pump Station No. 2 to the LWWRF is currently adequate to accommodate this additional flow from this project.
5. A wastewater forcemain traverses this property. No buildings can be constructed within the easement and access must be maintained in the event maintenance or repairs are required.
6. Construction plans should indicate the ownership of each easement (in favor of which party).
Note: County will not accept any additional sewer easements that traverse private property.

Upon receipt of the above items we will continue to process the subject plans. If you have any questions please call our office at 270-7417.

Sincerely,

Scott R. Rollins, CE-VI

Wastewater Reclamation Division

RECEIVED
JUL 10 2003

RONALD M. FUKUMOTO
ENGINEERING, INC.

SR:ar(Parcel 10H Kaanapali PCC170)



RONALD M. FUKUMOTO ENGINEERING, INC.
Civil Engineering & Land Surveying Consultants

July 7, 2003

Ronald M. Fukumoto, PE, LS
Eric H. Yamashige, PE, LS
1721 Will Pa Loop, Suite 203
Wailuku, Hawaii 96793
Phone: (808) 242-8611
Fax: (808) 244-7510
E-mail: rfe@maui.gateway.com

Mr. Scott Rollins
Wastewater Reclamation Division
Department of Public Works and Environmental Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Dear Mr. Rollins:

Subject: PROPOSED KAAPALI PARCEL 10-H SUBDIVISION
Tax Map Key (2) 4-4-006: 056

We are sending you this letter, on behalf of our client, Landtec, Inc., to request confirmation of the adequacy of County wastewater facilities for a proposed subdivision in Lahaina, Maui. We're preparing a preliminary engineering report as part of a community plan amendment for the project and would like to include such data in the report. The community plan amendment involves changing the current light industrial designation to single-family residential.

Our client's project involves a subdivision of a 7.65-acre parcel located on the mauka side of Honoapiʻlani Highway approximately 1,000 feet north of the intersection of the highway and Kaanapali Parkway. The tax map designates this parcel as Tax Map Key (2) 4-4-006:056. The project will consist of about 23 house lots with a main dwelling and 500-square foot cottage on each lot.

Based on your current guidelines, the average wastewater flow from the project would be 12,190 gallons per day. This total is based on 350 gallons per day for each main dwelling and 180 gallons per day for each cottage. We understand that in the early-1980's, Amfac funded an expansion of the Lahaina Wastewater Reclamation Facility (LWWRP) and received an allocation of wastewater capacity for its Kaanapali properties. Please confirm that this property falls under Amfac's allocation of wastewater capacity.

We would also appreciate confirmation of the adequacy of the collection system. We understand that the County constructed the LWWRP and collection system in the mid-1970's to serve the properties between Lahaina Town and the reclamation facility in Honokowai. This project adjoins the Lahaina Wastewater Pump Station No. LA-02 and will tie into the gravity sewer line at the pump station.

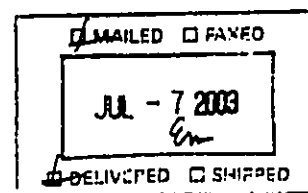
Thank you for your assistance.

Sincerely,


Ronald M. Fukumoto, PE, LS
President

Copy: Bob Johnston - Landtec, Inc.
John Higham - KLC Holding Corp.

LDT002



PRELIMINARY DRAINAGE INFORMATION

A. RUNOFF COEFFICIENT

1. Existing Conditions

a. Undeveloped Site and Golf Course

Infiltration – slow	0.14
Relief – rolling (5%-15%)	0.03
Vegetal Cover – Good	0.03
Development Type – Agricultural	<u>0.15</u>

$$C = 0.35$$

b. Golf Maintenance Yard

Infiltration – negligible	0.20
Relief – flat (0-5%)	0.00
Vegetal Cover – None	0.07
Development Type – Industrial	<u>0.55</u>

$$C = 0.82$$

2. Developed Conditions – Subdivision Site

Infiltration – slow	0.14
Relief – rolling (5%-15%)	0.03
Vegetal Cover – Good	0.03
Development Type – Residential	<u>0.40</u>

$$C = 0.60$$

B. RECURRENCE INTERVAL & RAINFALL

1. Recurrence interval $T_m = 50$ years (due to sump conditions)
2. One-hour rainfall $I_{50} = 2.5$ inches

C. TIME OF CONCENTRATION

1. Existing Conditions $T_c = 15$ minutes
2. Developed Conditions $T_c = 10$ minutes

D. EXISTING RUNOFF (Rational Method)

1. To existing concrete ditch
 - a. $C = [(0.82 \times 0.63) + (0.32 \times 12.98)] / 13.61 = 0.34$
 - b. $i = 2.5 \times 1.84 = 4.60$
 - c. $a = 13.61$ acres
 - d. $Q = Cia = 0.34 \times 4.60 \times 13.61 = 21.3$ cfs
2. To highway
 - a. $C = 0.32$
 - b. $I = 2.5 \times 1.84 = 4.60$
 - c. $a = 2.13$ acres
 - d. $Q = Cia = 0.32 \times 4.60 \times 2.13 = 3.1$ cfs
3. Total $Q = 21.3 + 3.1 = 24.4$ cfs

E. DEVELOPED RUNOFF (Rational Method)

1. To drainline in roadway and existing concrete ditch
 - a. $C = \{[0.32 (1.45 + 1.23 + 1.54 + 1.55 + 1.00 + 0.37)] + [0.82 \times 0.63] + [0.60 \times (0.68 + 1.68 + 0.92 + 1.25 + 0.55 + 0.29 + 0.32 + 0.12)]\} / 13.58 = 0.46$
 - b. $i = 2.5 \times 2.06 = 5.15$
 - c. $a = 13.58$ acres
 - d. $Q = C i a = 0.46 \times 5.15 \times 13.58 = 32.2$ cfs
2. To highway
 - a. $C = 0.60$
 - b. $I = 2.5 \times 2.06 = 5.15$
 - c. $a = 1.60$ acres
 - d. $Q = C i a = 0.60 \times 5.15 \times 1.60 = 4.9$ cfs
3. Total $Q = 32.2 + 4.9 = 37.1$ cfs

F. INCREASE DUE TO DEVELOPMENT (Rational Method)

1. To existing concrete ditch:
 $\Delta Q = 32.2 - 21.3 = 10.9$ cfs
2. To highway:
 $\Delta Q = 4.9 - 3.1 = 1.8$ cfs
3. Total : $\Delta Q = 10.9 + 1.8 = 12.7$ cfs

G. CAPACITY ANALYSIS

1. The existing concrete drainage ditch can handle flows due to developed conditions. The capacity of the ditch, with 2.5 feet of freeboard, is about 61 cfs. The ditch can therefore handle the 50-year design flow of 32.2 cfs. Portions of the ditch within the site will be replaced with drain pipes.
2. The highway drainage system receives runoff from the site and may not be able to handle the increase in flows due to development. Measures to mitigate the increase in flows will therefore be implemented as noted below.

H. CURVE NUMBER (CN) COMPUTATION

1. Existing
Open Space CN = 61
2. Developed
Residential $\frac{1}{4}$ - acre CN = 75

I. RAINFALL DATA

1. 50-year, 1-hour P = 2.5 inches
2. 2-year, 24-hour P = 3.7 inches
3. 50-year, 24-hour P = 8.8 inches

J. RUNOFF VOLUME

1. 50-year, 1-hour
 - a. Existing - 2.13 acres
 $S = (1000/CN) - 10 = (1000/61) - 10 = 6.39$
 $Q = (P - 0.2S)^2 / (P + 0.8S) = (2.5 - 0.2 \times 6.39)^2 / (2.5 + 0.8 \times 6.39) = 0.20$ inch

$$\text{Volume} = (0.20/12) \times 2.13 \times 43560 = 1546 \text{ cu. ft.}$$

- b. Developed - 1.60 acres

$$S = (1000/\text{CN}) - 10 = (1000/75) - 10 = 3.33$$

$$Q = (P - 0.2S)^2 / (P + 0.8S) = (2.5 - 0.2 \times 3.33)^2 / (2.5 + 0.8 \times 3.33) = 0.65 \text{ inch}$$

$$\text{Volume} = (0.65/12) \times 1.60 \times 43560 = 3,775 \text{ cu. ft.}$$

- c. Increase due to development

$$\Delta V = 3,780 - 1550 = 2,230 \text{ cu. ft.}$$

2. 2-year, 24-hour

- a. Existing - 2.13 acres

$$S = (1000/\text{CN}) - 10 = (1000/61) - 10 = 6.39$$

$$Q = (P - 0.2S)^2 / (P + 0.8S) = (3.7 - 0.2 \times 6.39)^2 / (3.7 + 0.8 \times 6.39) = 0.67 \text{ inch}$$

$$V = (0.67/12) \times 2.13 \times 43560 = 5,180 \text{ cu. ft.}$$

- b. Developed - 1.60 acres

$$S = (1000/\text{CN}) - 10 = (1000/75) - 10 = 3.33$$

$$Q = (P - 0.2S)^2 / (P + 0.8S) = (3.7 - 0.2 \times 3.33)^2 / (3.7 + 0.8 \times 3.33) = 1.45 \text{ inches}$$

$$V = (1.45/12) \times 1.60 \times 43560 = 8,420 \text{ cu. ft.}$$

- c. Increase due to development

$$\Delta V = 8,420 - 5,180 = 3,240 \text{ cu. ft.}$$

3. Required Retention Volume

The County drainage rules require retaining the increase in runoff volume due to a 50-year, 1-hour storm. However, the West Maui Watershed Owners Manual guidelines recommend retaining the increase in runoff volumes due to a 2-year, 24-hour storm. The computations above show that the 2-year, 24-hour storm results in large volumes; therefore, the larger amounts will be used.

K. RUNOFF RATE

The Natural Resources Conservation Service (formerly known as the Soil Conservation Service) TR-55 method of computing runoff rate will be used. TR-55 uses the 24-hour storm with varying recurrence intervals. The County drainage rules require the use of a 50-year recurrence interval for this project. Therefore, a 50-year, 24-hour storm will be used in the following computations.

1. Existing

Area = 2.13 acres or 0.00333 square mile

P = 8.8 inches

CN = 61

T_c = 15 minutes or 0.250 hour

Peak Flow = 5 cfs

Note: This method results in the same peak flow rate as the rational method shown in Item D above.

TR-55 TABULAR DISCHARGE METHOD

VERSION 1.11

Project : KAANAPALI PARCEL 10-H User: _____ Date: _____
 County : MAUI State: HI Checked: _____ Date: _____
 Subtitle: PRE-DEVELOPMENT

Total watershed area: 0.003 sq mi Rainfall type: I Frequency: 50 years
 ----- Subareas -----

1
 Area (sq mi) 0.00
 Rainfall (in) 8.8
 Curve number 61
 Runoff (in) 4.07
 T_c (hrs) 0.25
 (Used) 0.20
 TimeToOutlet 0.00
 Ia/P 0.15

Time Total ----- Subarea Contribution to Total Flow (cfs) -----
 (hr) Flow 1

9.0	0	0
9.3	0	0
9.6	1	1
9.9	1	1
10.0	3	3
10.1	5p	5p
10.2	5	5
10.3	3	3
10.4	2	2
10.5	2	2
10.6	1	1
10.7	1	1
10.8	1	1
11.0	1	1
11.2	1	1
11.4	1	1
11.6	1	1
11.8	1	1
12.0	1	1
12.1	1	1
12.6	1	1
13.0	1	1
13.5	1	1
14.0	0	0
14.5	0	0
15.0	0	0
15.5	0	0
16.0	0	0
17.0	0	0
18.0	0	0
20.0	0	0
24.0	0	0

p - Peak Flow

2. Developed

Area = 1.60 acres or 0.00250 square mile

P = 8.8 inches

CN = 75

T_c = 10 minutes or 0.167 hour

Peak Flow = 6 cfs

Note: This method results in a higher peak flow rate than the rational method shown in Item E above.

TR-55 TABULAR DISCHARGE METHOD

VERSION 1.11

Project : KAAHAPALI PARCEL 10-H User: Date:
 County : MAUI State: HI Checked: Date:
 Subtitle: POST-DEVELOPMENT

Total watershed area: 0.002 sq mi Rainfall type: I Frequency: 50 years

----- Subarea -----
 1
 Area(sq mi) 0.00
 Rainfall(in) 8.8
 Curve number 75
 Runoff(in) 5.77
 Tc (hrs) 0.17
 (Used) 0.20
 TimeToOutlet 0.00
 Ia/P 0.08
 (Used) 0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
9.0	0	0
9.3	1	1
9.6	1	1
9.9	2	2
10.0	3	3
10.1	5	5
10.2	6P	6P
10.3	4	4
10.4	2	2
10.5	2	2
10.6	2	2
10.7	1	1
10.8	1	1
11.0	1	1
11.2	1	1
11.4	1	1
11.6	1	1
11.8	1	1
12.0	1	1
12.3	1	1
12.6	1	1
13.0	1	1
13.3	1	1
14.0	0	0
14.5	0	0
15.0	0	0
15.5	0	0
16.0	0	0
17.0	0	0
18.0	0	0
20.0	0	0
24.0	0	0

P - Peak Flow

L. PRELIMINARY DETENTION VOLUME

An approximate method of computing the required detention volume, based on the following TR-55 routing chart, will be used.

1. Runoff Volume = $V_r = (5.77/12) \times 1.60 \times 43560 = 33,500$ cubic feet
2. Peak Outflow Discharge = $q_o = 5$ cfs
3. Peak Inflow Discharge = $q_i = 6$ cfs
4. $q_o / q_i = 5/6 = 0.83$
5. $V_s / V_r = 0.135$
6. Detention or Storage Volume = $V_s = 0.135 \times 33,500 = 4,520$ cubic feet

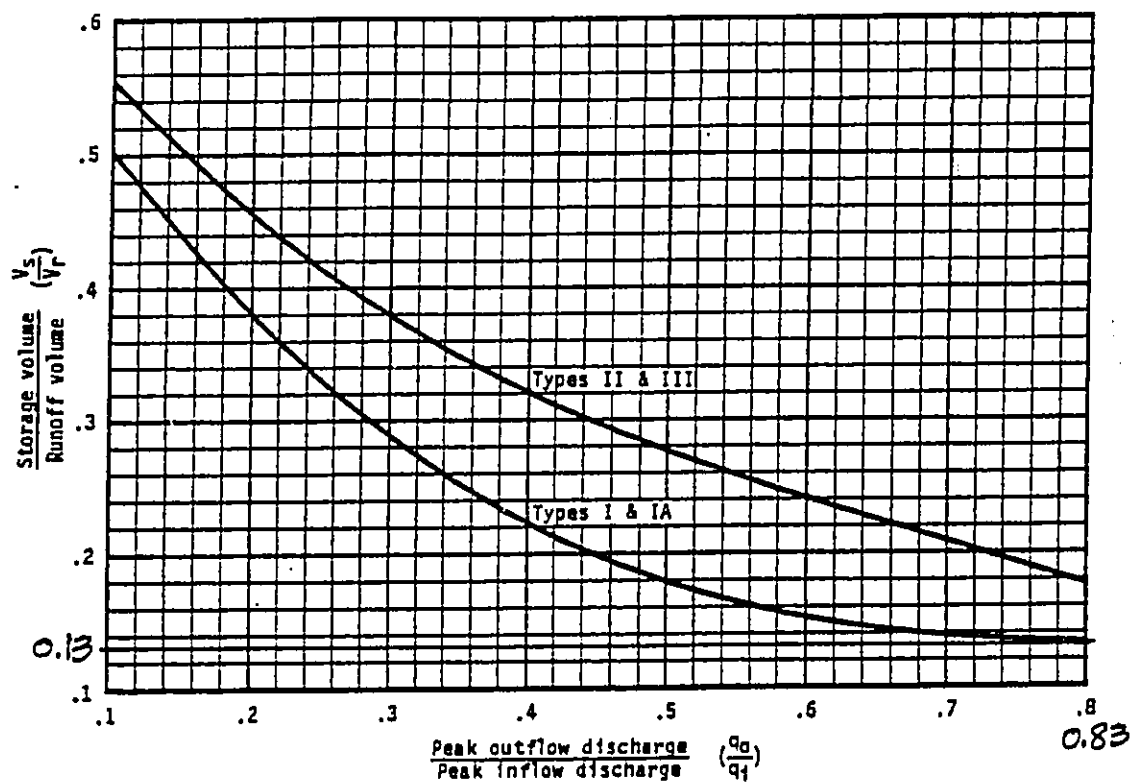


Figure 6-1.—Approximate detention basin routing for rainfall types I, IA, II, and III.

M. DETENTION/RETENTION PIPE PRELIMINARY DESIGN

The drainage basin will consist of large-diameter corrugated aluminum pipe in a gravel bed of filter rock. The basin will be designed to keep peak flow rates due to a 50-year, 24-hour storm at pre-development levels and to keep runoff volumes due to a 2-year, 24-hour storm at pre-development levels. The following are preliminary sizing computations.

1. Required detention volume = $V = 4,520$ cubic feet
2. Required retention volume = $V = 3,240$ cubic feet
3. Use 6-foot diameter perforated corrugated aluminum pipe in 10-foot deep by 10-foot wide gravel bed consisting of "4-C" filter rock.
4. Pipe Area = $\Pi r^2 = \Pi \times 3^2 = 28.27$ square feet
5. Gravel Area = $(10 \times 10) - 28.27 = 71.73$ square feet
6. Gravel Void Area = $71.73 \times 0.45 = 32.28$ square feet
7. Allowable Gravel Void Area = $32.28 \times 0.50 = 16.14$ square feet
8. Pipe Area + Allowable Gravel Void Area = $28.27 + 16.14 = 44.41$ square feet
9. Required Length = $4,520 / 44.41 = 102$ feet
10. Set height of outlet pipe within D/R pipe so that 3,240 cubic feet of runoff is retained within pipe.

APPENDIX H
Traffic Impact Assessment Report

TRAFFIC IMPACT ASSESSMENT REPORT FOR
KAANAPALI PARCEL 10-H

IN KAA NAPALI, MAUI, HAWAII

FINAL REPORT

Prepared For

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1. INTRODUCTION

Phillip Rowell and Associates has been retained by Landtec, Inc. to prepare a Traffic Impact Assessment Report for a proposed single-family residential development in Kaanapali, Maui, Hawaii. This study is required as part of the subdivision review of the proposed project.

This introductory chapter discusses the location of the project, the proposed development plan, and the study methodology.

Project Location and Description

The proposed project is located mauka of Honoapiilani Highway across from Kaanapali Resort in West Maui. The general location on Maui is shown in Figure 1.

The project is summarized as follows:

1. The project will consist of 26 single-family units plus one detached ohana unit per single-family unit.
2. It is anticipated that the build out of the project will be over several years. For this study, it was assumed that the project would be completed by 2010.
3. There are two alternate locations for the driveway to the project. The first, referred to as Alternate A, is along the east side of Kualapa Loop adjacent to the railroad crossing. The second, referred to as Alternate B, is a new driveway along the south side to the entrance road to the Palisades. Figure 2 is a schematic site plan showing the approximate locations of these entrances, access roads and study intersections.

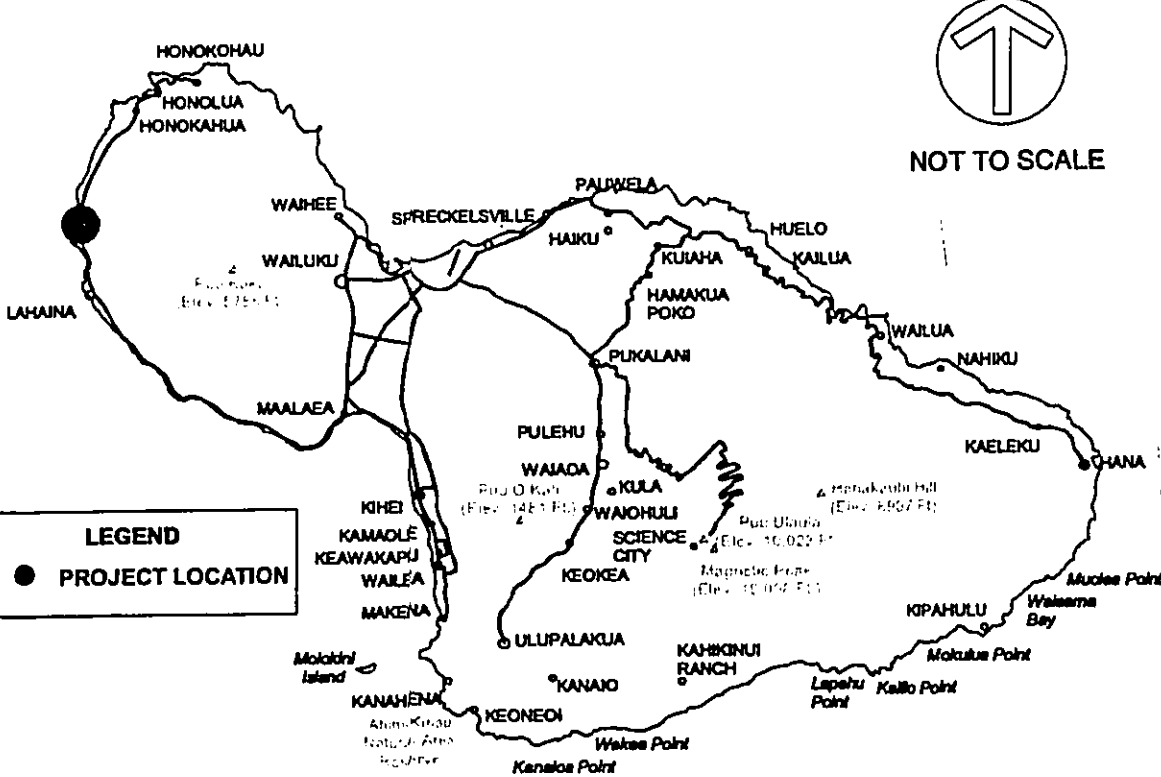


Figure 1
PROJECT LOCATION MAP

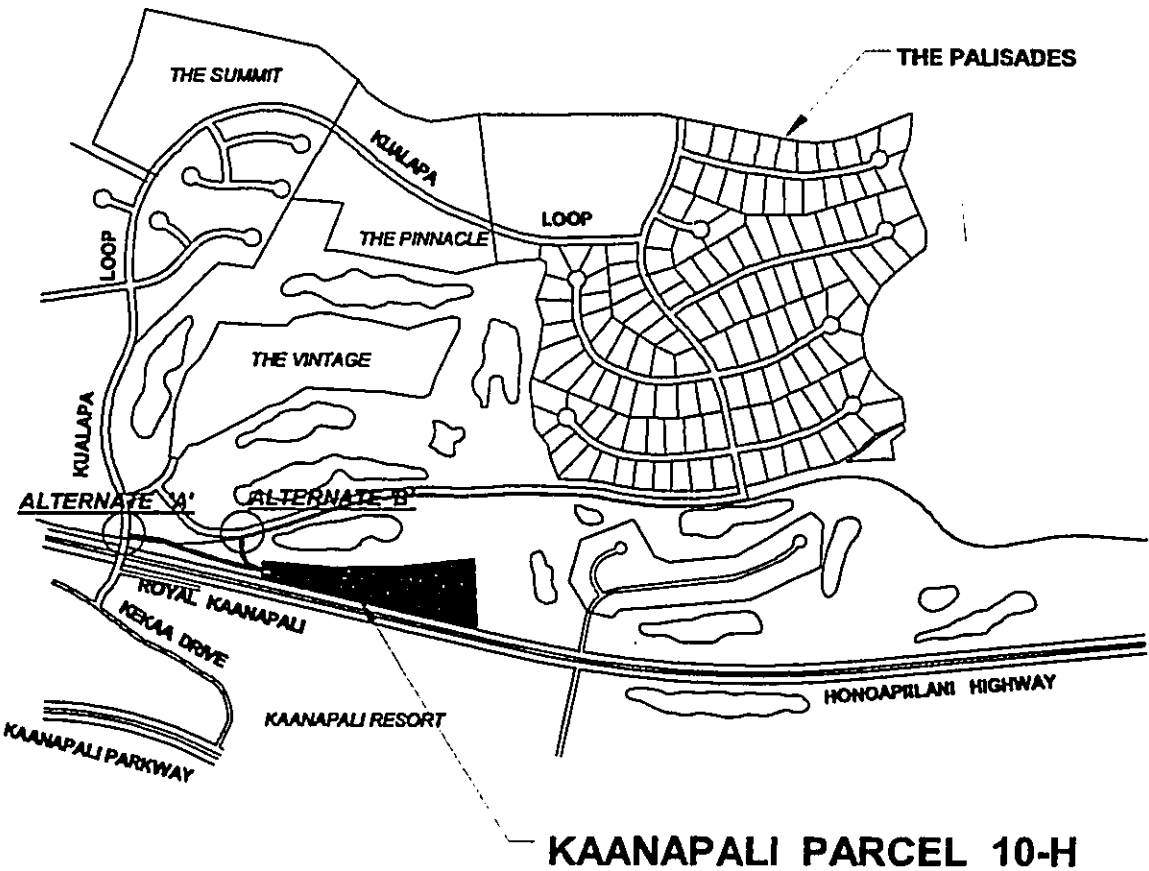


Figure 2
SCHEMATIC SITE PLAN

Study Area

The project is included in the South Beach Mauka Master Plan study area. Therefore, the study area is limited to the immediate vicinity of the project. The traffic impacts on locations along Kaanapali Parkway and Honoapiilani Highway have been identified and mitigated as part of the impact analysis for the South Beach Mauka Master Plan.

The study area for this project includes the following intersections:

1. Kualapa Loop at Kekaa Drive
2. Kualapa Loop at Kaanapali Royal
3. Kualapa Loop at Project Driveway for Alternate A
4. Kualapa Loop at The Vintage entrance
5. The Vintage entrance at The Palisades entrance
6. Project Driveway for Alternate B at The Palisades entrance

Study Methodology and Order of Presentation

1. Analysis of Existing Traffic Conditions

Existing traffic volumes at the study intersections were determined from traffic counts performed during January and February, 2002. Intersection configurations and traffic control information were also collected in the field at the time of the traffic counts. Other data collected included speed limits and right-of-way controls.

Using the data collected, existing traffic operating conditions in the vicinity of the project were determined. The methodology for unsignalized intersections described in the 2000 *Highway Capacity Manual (HCM)*¹ was used to determine the level-of-service (LOS) at the study intersections.

Existing traffic conditions, the LOS concept and the results of the LOS analysis for existing conditions are presented in Chapter 2.

2. Determination of Cumulative Traffic Projections

Cumulative traffic conditions are defined as future traffic conditions without the proposed project during the design year. The year 2010 was used as the design year. This does not necessarily represent the project completion date. It represents occupancy for purposes of conducting the impact analysis. A description of the process used to estimate 2010 cumulative traffic volumes and the resulting cumulative traffic projections is presented in Chapter 3.

¹ *Highway Capacity Manual*, Institute of Transportation Engineers, Washington, D.C., 1997

3. *Analysis of Project-Related Traffic Impacts*

The next step in the traffic analysis was to estimate the peak-hour traffic that would be generated by the proposed project. This was done using standard trip generation procedures outlined in the *Trip Generation Handbook*². The procedure is described in Chapter 4.

These trips were distributed based on the available approach and departure routes. The project-related traffic was then superimposed on 2010 cumulative traffic volumes at the study intersections. The HCM methodology was used again to conduct a LOS analysis for cumulative plus project conditions. The results of this analysis were compared to 2010 cumulative conditions to determine the incremental impacts of this project. The analysis of the project-related impacts and the conclusions of the analyses are presented in Chapter 5.

² *Trip Generation Handbook*, Institute of Transportation Engineers, Washington, D.C., October 1998

2. EXISTING CONDITIONS

This chapter presents the existing traffic conditions on the roadways adjacent to the proposed project. The level-of-service (LOS) concept and the results of the LOS analysis for existing conditions are also presented. The purpose of this analysis is to establish the base conditions for the determination of the impacts of the project which are described in a subsequent chapter.

Existing Roadway and Traffic Conditions

Access to the project will be via two entrances. Both of these entrances are accessed by Kualapa Loop. Kualapa Loop is a two-lane, two-way roadway that crosses Honoapiilani Highway from Kaanapali Resort. Makai of Honoapiilani Highway, Kualapa Loop intersects Kekaa Drive at a "T" intersection. This intersection is unsignalized. At present, Kualapa Loop terminates mauka of it's intersection with the entrance to The Vintage development. In the future, Kualapa Loop will be extended mauka and then southward into the study project.

Peak hour traffic volumes along Kualapa Loop and at the intersection of Kualapa Loop at Kekaa Drive are shown in Figure 3. The traffic volumes include large trucks, buses and motorcycles. They do not include golf carts, mopeds or bicycles. The counts for these volumes were performed during February, 2002.

Traffic using the driveway of the AMFAC office and the Kaanapali Royal were combined for the traffic analysis. It was observed that traffic would enter via one of these intersections and then exit via the other. Since this traffic uses either driveway indiscriminately, combining the traffic would analyze a worse-case condition.

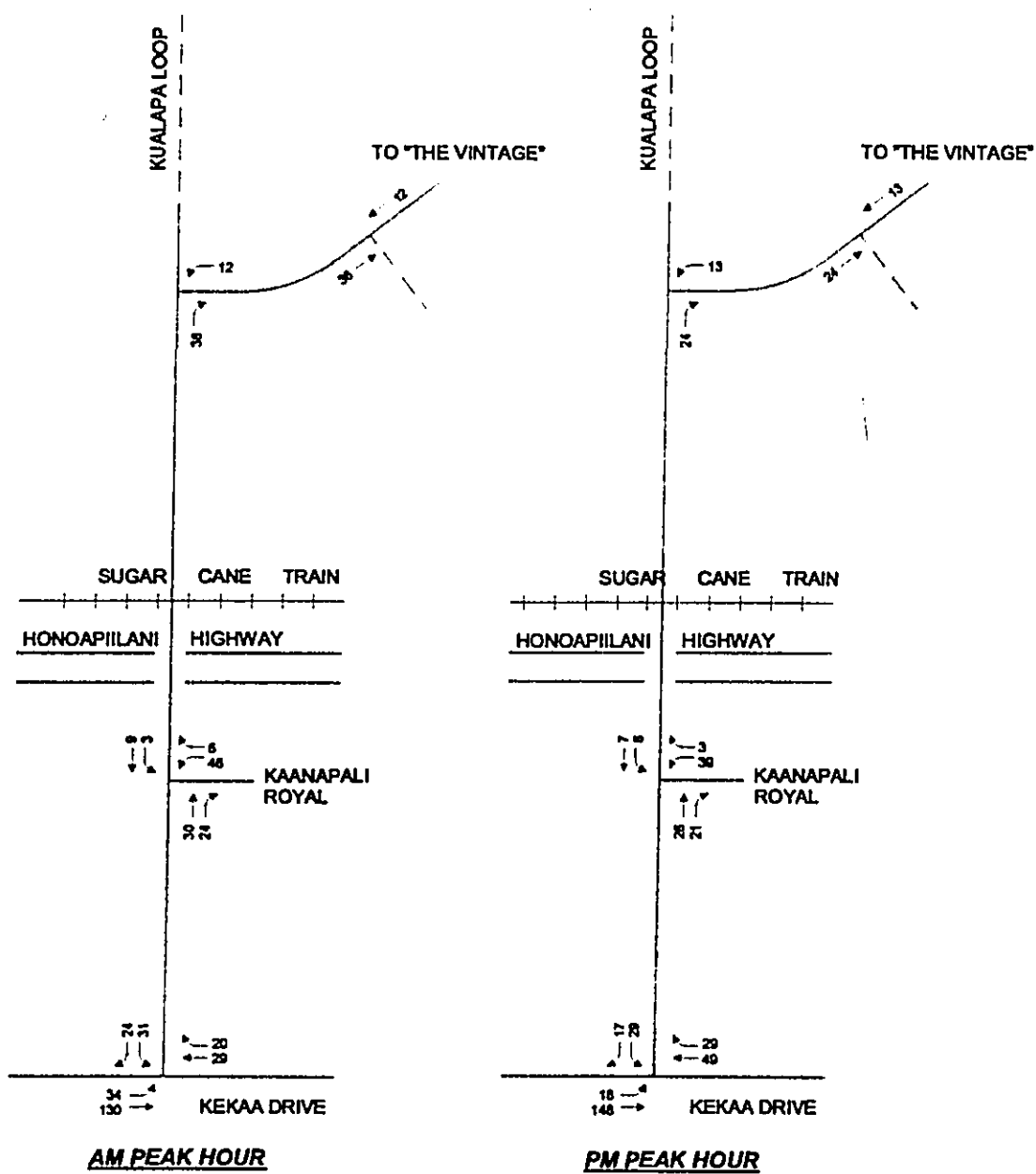


Figure 3
EXISTING (2002) PEAK HOUR TRAFFIC VOLUMES

Level-of-Service Concept

Signalized Intersections

The operations method described in the 2000 Highway Capacity Manual (HCM) was used to analyze the operating efficiency of the signalized intersections adjacent to the study site. This method involves the calculation of a volume-to-capacity (V/C) ratio and average vehicle delay which is related to a level-of-service.

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

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

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

Table 1 Level-of-Service Definitions for Signalized Intersections⁽¹⁾

Level of Service	Interpretation	Volume-to-Capacity Ratio ⁽²⁾	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<10.0
C	Light congestion; occasional backups on critical approaches	0.701-0.800	10.1-20.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	20.1-35.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	35.1-80.0
F	Total breakdown with stop-and-go operation	>1.001	>80.0

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

Unsignalized Intersections

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

Table 2 Level-of-Service Definitions for Unsignalized Intersections⁽¹⁾

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:

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

Level-of-Service Analysis of Existing Conditions

The results of the Level-of-Service analysis for the study intersections are shown in Table 3. Shown in the table are the volume-to-capacity ratios, average vehicle delays and the Levels-of-Service.

Table 3 Existing Levels-of-Service

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	Delay ¹	LOS ²	Delay ¹	LOS ²
Kualapa Loop at Kekaa Drive				
Eastbound Left & Thru	7.4	A	7.4	A
Southbound Left & Right	9.6	A	10.4	B
Kualapa Loop at Royal Kaanapali				
Southbound Left & Thru	7.3	A	7.3	A
Westbound Left & Right	9.1	A	9.1	A

NOTES:

- (1) Average vehicle delay in seconds per vehicle.
- (2) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.

The conclusions of this analysis are that all controlled traffic movements at the study intersection operate at a high level of service (Level-of-Service A or B) and delays are minimal. These conclusions are consistent with field observations during the traffic counts.

The intersection of Kualapa Loop at the entrance to The Vintage was not analyzed because there is no conflicting traffic since Kualapa Loop terminates just mauka of the intersection.

Other conditions observed during the traffic surveys are:

1. Many of the vehicles turning from Kekaa Drive to Kualapa Loop appear to be disoriented. This may be because the Drive Guide provided by the rental car companies indicate that a right turn can be made from Kualapa Loop onto Honoapiilani Highway. This movement is not allowed. Also, there are no street name signs at the study intersection.
2. It was observed that several drivers use the shopping center driveway to access Honoapiilani Highway rather than drive through Kaanapali Resort.
3. There is a crest in the vertical alignment of Kualapa Loop over Honoapiilani Highway that restricts the sight distance for vehicles exiting Royal Kaanapali condominiums. A four-way STOP should be examined to mitigate the concern.
4. At the intersection of Kekaa Drive at Kualapa Loop, there are conflicts between vehicles and golf carts, especially left turns from Kekaa Drive versus left turns from the golf cart path along Kualapa Loop.
5. Pedestrian traffic is significant.

3. PROJECT CUMULATIVE TRAFFIC CONDITIONS

The purpose of this chapter is to discuss the assumptions and data used to estimate 2010 cumulative traffic conditions. Cumulative traffic conditions are defined as future traffic volumes without the proposed project.

Future traffic growth consists of two components. The first is ambient background growth that is a result of regional growth and cannot be attributed to a specific project. The second component is estimated traffic that will be generated by other development projects in the vicinity of the proposed project.

Background Traffic Growth

The *Maui Long Range Transportation Plan*³ does not provide future traffic projections for Kekaa Drive. However, this study concluded that traffic in Maui would increase an average of 1.6% per year from 1990 to 2020. This growth rate was used to estimate the background growth between 2002 and 2010, which is the design year for this project. The growth factor was calculated to be 1.135 using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor
i = Average annual growth rate, or 0.016
n = Growth period, or 8 years

³ Kaku Associates, October 1996

Related Projects

The second component in estimating background traffic volumes is traffic resulting from other proposed projects in the vicinity. Related projects are defined as those projects that are under construction or have been approved for construction and would significantly impact traffic in the study area. Related projects may be development projects or roadway improvements.

It was determined that The Pinnacle, The Summit and the Palisades were projects that would contribute to future background traffic along Kualapa Loop. A trip generation analysis was performed and the estimated traffic assigned to the appropriate traffic movements at the study intersections. The assumptions used for this trip generation analysis and assignment were:

1. It was determined that an additional 282 single-family units may be developed in the area and contribute to traffic along Kualapa Loop within the study period (2002 to 2010).
2. 10% of the units, or 42 units, would have traffic characteristics comparable to single-family, owner-occupied dwelling units. The remaining 90%, or 240 units, would have traffic characteristics comparable to recreational homes, which are typically second homes.
3. Construction of all units will be completed before 2010.

2010 Cumulative Traffic Projections

2010 cumulative traffic projections were calculated by expanding existing traffic volumes by the appropriate growth rates and then superimposing traffic generated by related projects. In summary, the assumptions used to estimate the cumulative traffic volumes are:

1. Existing traffic along Kekaa Drive was increased by 1.6% per year from 2002 to 2010.
2. Traffic from an additional 282 single-family was added to the traffic volume along Kualapa Loop. These developments are planned to be mauka of the entrance to The Vintage.

The resulting 2010 cumulative peak hour traffic volumes are shown in Figure 4.

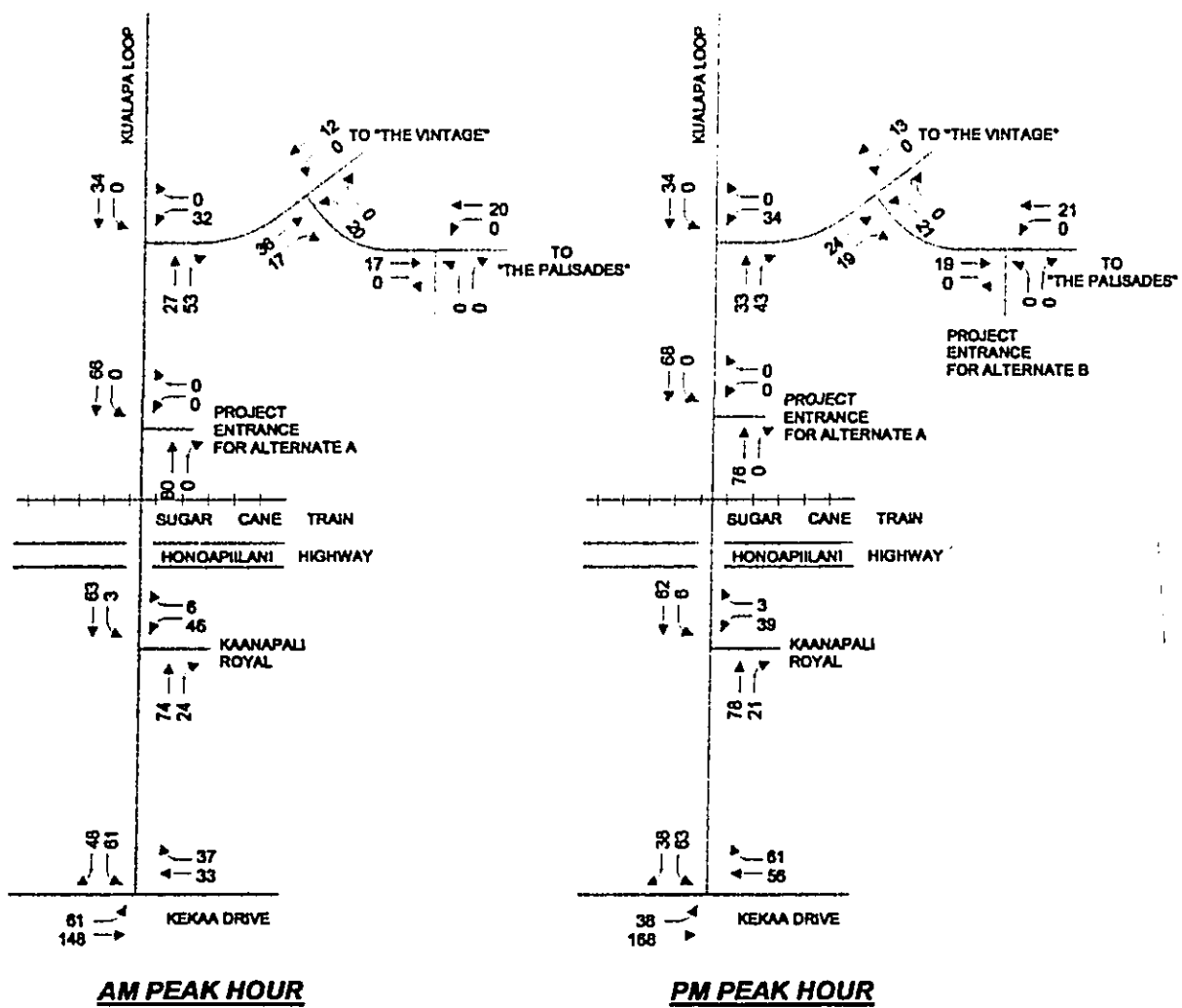


Figure 4
2010 CUMULATIVE PEAK HOUR TRAFFIC PROJECTIONS

4. PROJECT-RELATED TRAFFIC CHARACTERISTICS

This chapter discusses the methodology used to identify the traffic-related impacts of the proposed project. Generally, the process involves the determination of weekday peak-hour trips that would be generated by the proposed project, distribution and assignment of these trips on the approach and departure routes, and finally, determination of the levels-of-service at affected intersections and driveways subsequent to implementation of the project. This chapter presents the generation, distribution and assignment of project generated traffic and the cumulative plus project traffic projections. The results of the level-of-service analysis of cumulative plus project conditions is presented in the following chapter.

Project Trip Generation

Future traffic volumes generated by a project were estimated using the procedures described in the *Trip Generation Handbook*,⁴ published by the Institute of Transportation Engineers. This method uses trip generation rates to estimate the number of trips that a proposed project will generate during the morning and afternoon peak hours.

The single-family phase of the project will consist of 26 single-family units. Single-family detached housing is defined by the Institute of Transportation Engineers as follows:

*Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.*⁵

⁴ Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 1998, p. 7-12

⁵ Institute of Transportation Engineers, *Trip Generation*, Washington, D.C., 1997, p. 262

In addition to the single-family units, each of the units may have ohana units. Since there are no trip generation rates for ohana units in the *Trip Generation Handbook*, trips generated by the ohana units were estimated using trip generation rates for apartments. These rates most likely result in an overestimation of the traffic from these units as some ohana units may be used by family members and some may be rented as an apartment. Use of the trip rates for apartments will result in conservative conclusions.

The trip generation analysis is summarized in Table 4. The trips shown are the peak hourly trips generated by the project, which typically coincide with the peak hour of the adjacent street. As shown, the project will generate 31 trips during the morning peak hour, 7 inbound and 24 outbound. During the afternoon peak hour, this phase will generate 26 inbound and 15 outbound trips for a total of 41 trips.

Table 4 Trip Generation Analysis

Period & Direction		Single Family Units			Ohana (Apartment) Units			Total Trips
		Trips per Unit or Percent	Units	Trips	Trips per Unit or Percent	Units	Trips	
AM Peak Hour	Total	0.77	26	20	0.44	26	11	31
	Inbound	25%		5	18%		2	7
	Outbound	75%		15	82%		9	24
AM Peak Hour	Total	1.02		27	0.54		14	41
	Inbound	64%		17	65%		9	26
	Outbound	36%		10	35%		5	15

The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour.⁶ Based on the criterion, a traffic impact study is not warranted. To date, the County of Maui has not established criteria for projects within its jurisdiction.

Trip Distribution and Assignments

The project-related trips were distributed along the anticipated approach routes to the project site based on the directional distribution of existing peak hour traffic along Kualapa Loop and Kekaa Drive. Two distribution patterns were prepared. The first, referred to as Alternate A, provides access via the existing driveway along the east side of Kualapa Loop adjacent to the railroad. The second, referred to as Alternate B, provides access via a driveway along the south side of the access road to The Palisades.

Project generated traffic was assigned separately for each alternate. The project related trip assignments are shown in Figures 5 and 6, respectively.

⁶ Institute of Transportation, *Traffic Access and Impact Studies for Site Development, A Recommended Practice*, 1991, page 5.

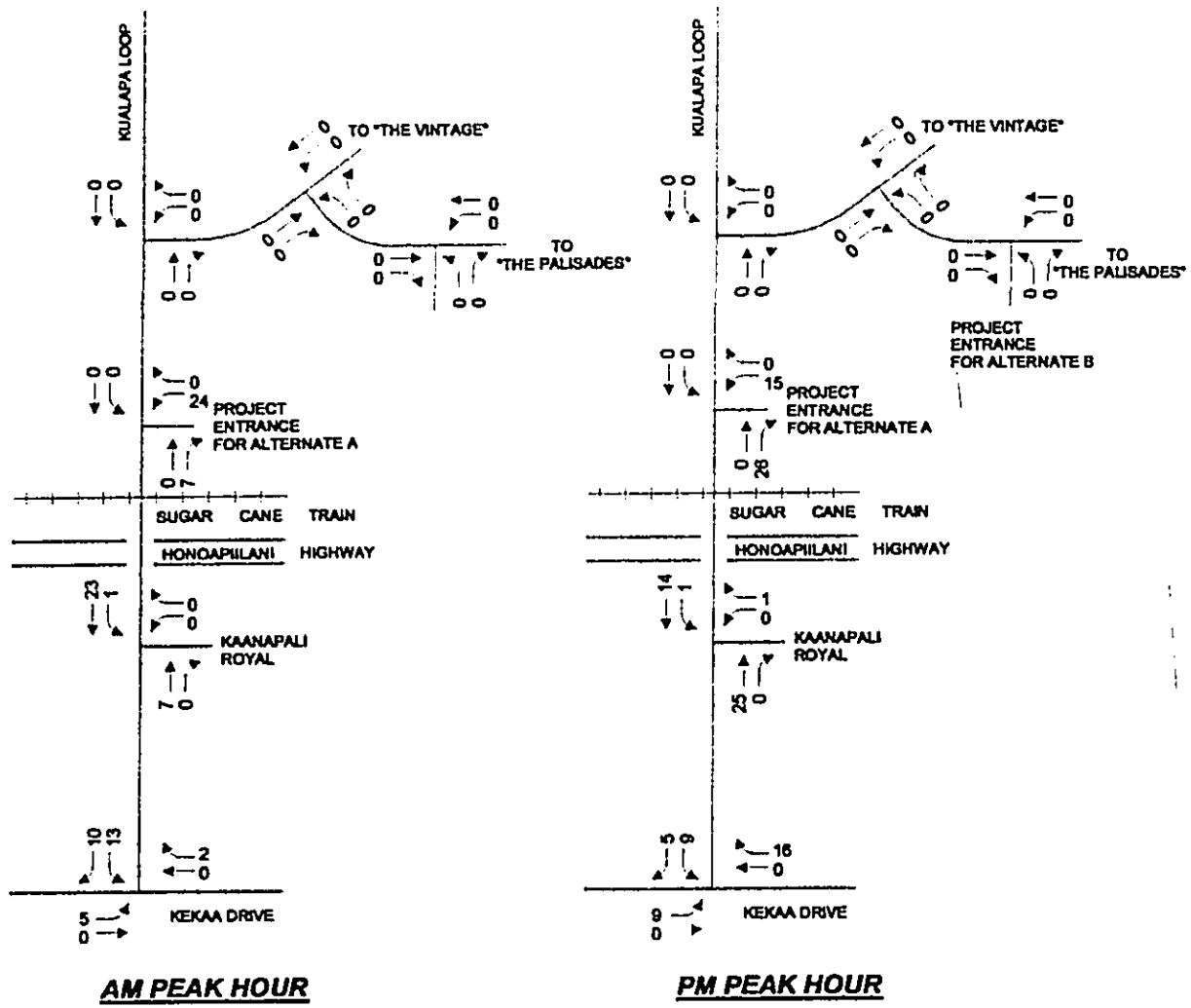


Figure 5
PROJECT TRIP ASSIGNMENTS FOR ALTERNATE A

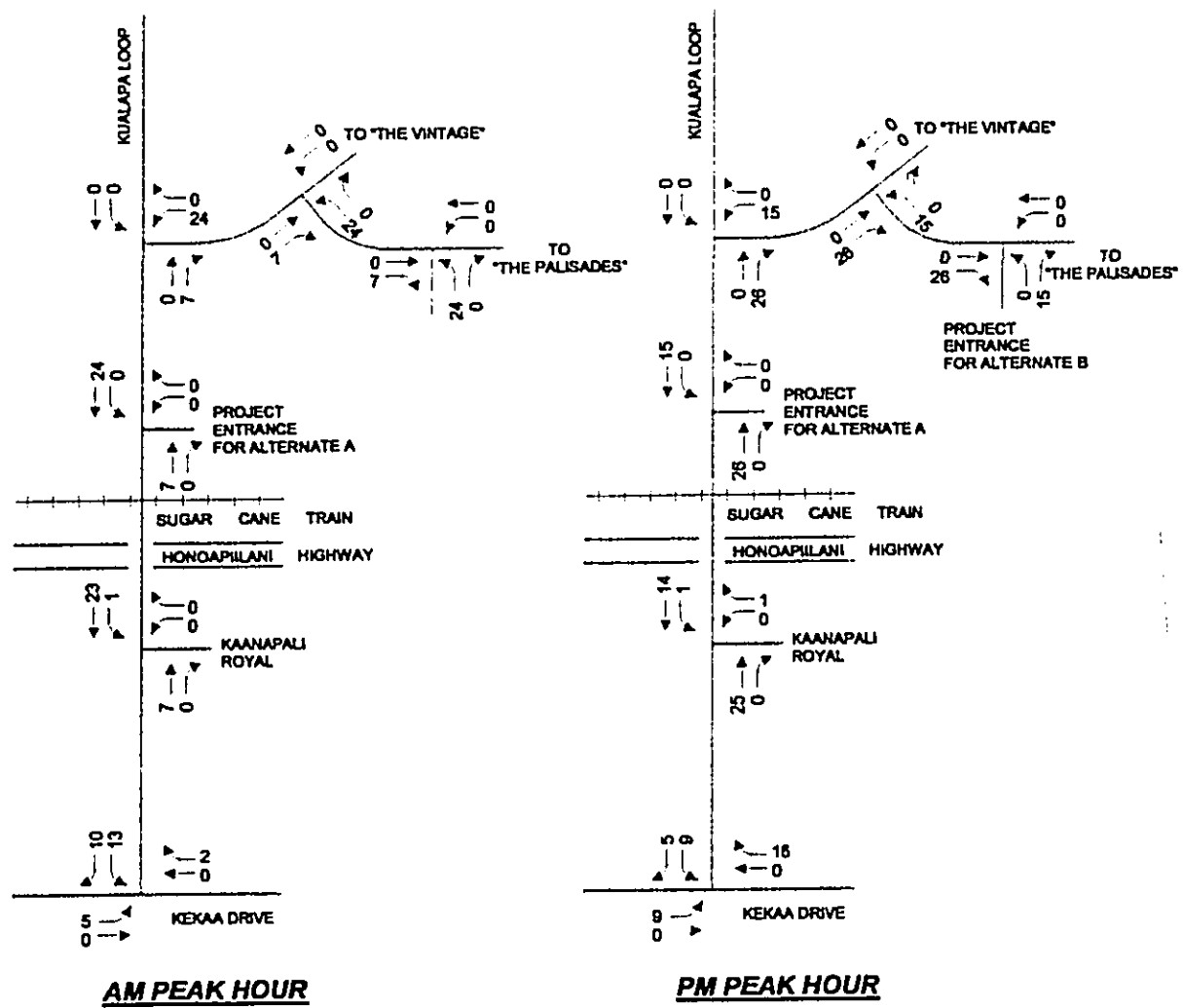


Figure 6
PROJECT TRIP ASSIGNMENTS FOR ALTERNATE B

2010 Cumulative Plus Project Projections

Cumulative plus project traffic conditions are defined as 2010 background traffic conditions plus project related traffic. The incremental difference between cumulative and cumulative plus project is the traffic impact of the project under study.

2010 cumulative plus project traffic volumes with the project were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2010 cumulative peak hour traffic volumes presented in Chapter 3. The traffic projections for 2010 cumulative plus project conditions are shown on Figure 7 and 8. The traffic projection worksh

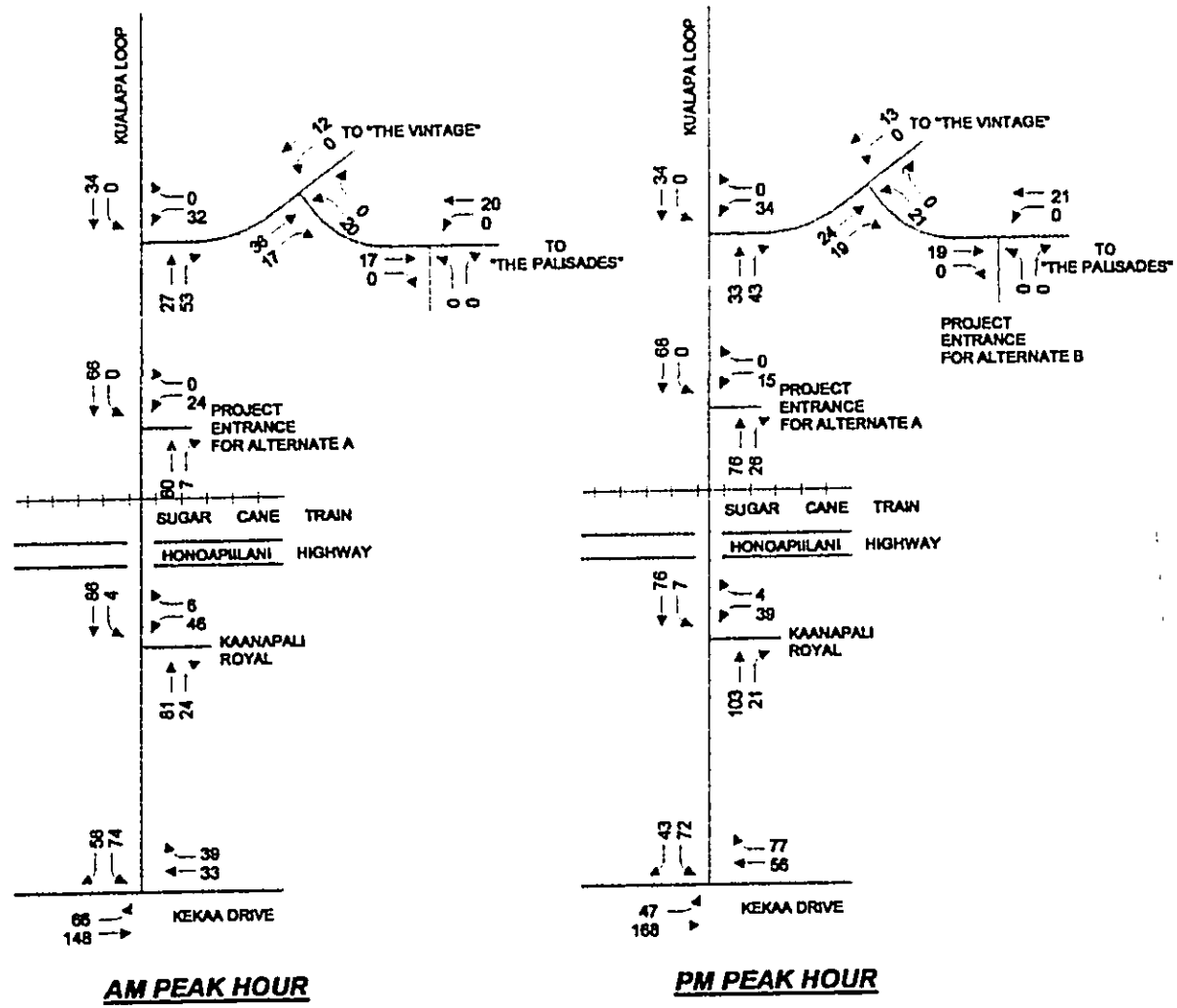


Figure 7
2010 CUMULATIVE PLUS PROJECT PEAK HOUR TRAFFIC PROJECTIONS - ALTERNATE A

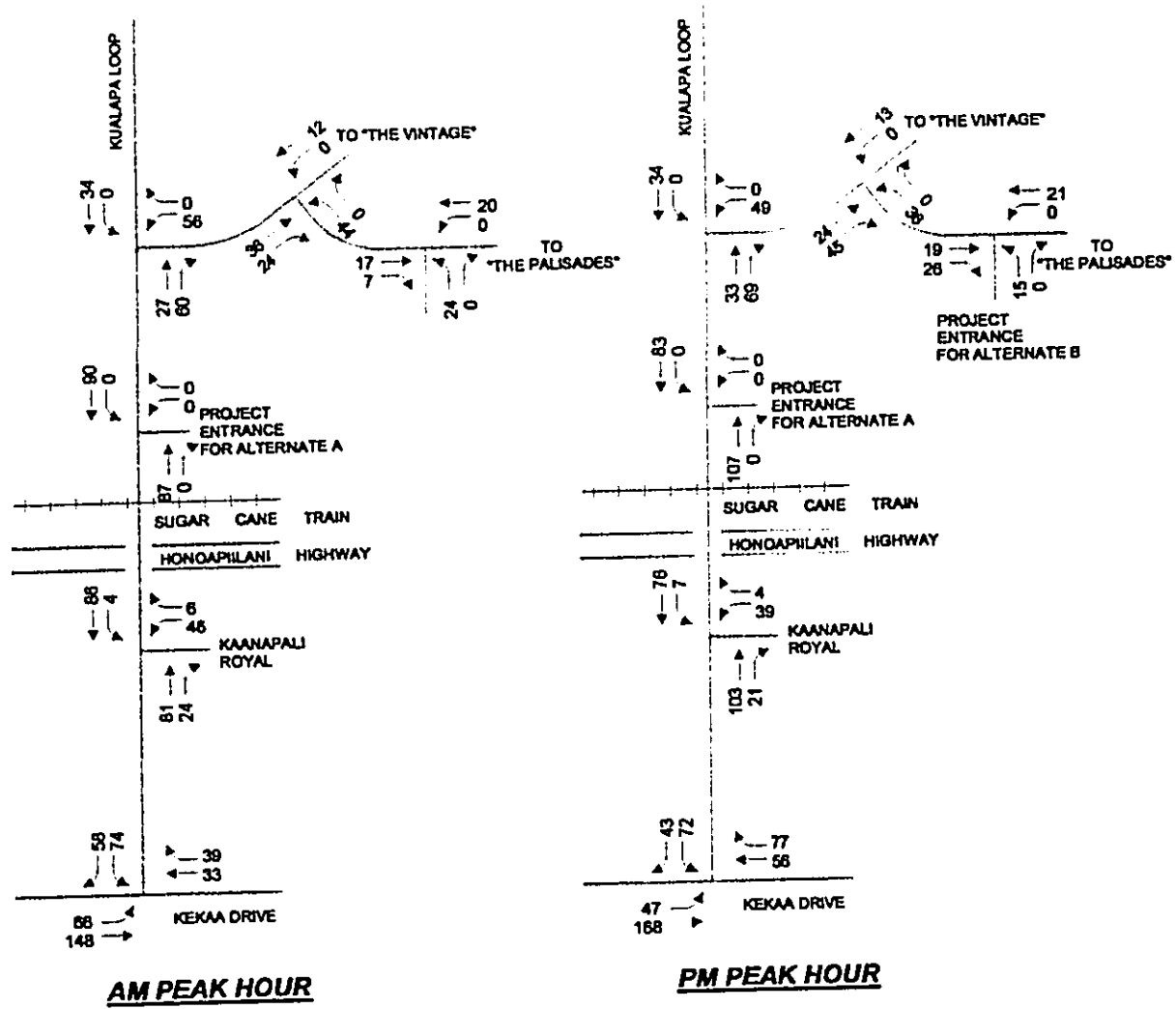


Figure 8
2010 CUMULATIVE PLUS PROJECT PEAK HOUR TRAFFIC PROJECTIONS - ALTERNATE B

5. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this chapter is to summarize the results of the level-of-service analysis of future conditions with the proposed project. This analysis identifies any potential traffic operational deficiencies. If deficiencies are anticipated, mitigation measures are identified and assessed.

Level-of-Service Analysis of 2010 Conditions

Since a traffic impact analysis is not warranted based on criteria established by the Institute of Transportation Engineers, a level-of-service analysis was performed for 2010 conditions with project generated traffic to identify potential problem locations where improvement may be necessary.

The level-of-service analysis was performed using the following assumptions:

1. All intersection approaches are one lane in and one lane out.
2. All intersections are unsignalized.
3. The default minimum acceptable gaps were used to calculate the average vehicle delays. Experience on other projects in Maui has concluded that these gaps are longer than those measured during traffic surveys at STOP sign controlled intersections. This means that the calculated delays are longer than those that will occur in the field.

Separate discussions are presented for Alternates A and B.

Alternate A

Table 5 is an analysis of the changes in traffic volumes at the study intersections. Shown are the 2010 peak hour projections without and with the project, the peak hourly change, and the percent change related to the peak hourly volume without the project. The volumes shown are the total volume of traffic approaching the intersection.

Table 5 Analysis of Changes in Peak Hourly Traffic Projections - Alternate A

Intersection	AM Peak Hourly Volume ⁽¹⁾				PM Peak Hour			
	Without Project	With Project	Change	Percent Change	Without Project	With Project	Change	Percent Change
Kualapa Loop at Kekaa Drive	388	418	30	7.7%	424	463	39	9.2%
Kualapa Loop at Royal Kaanapali	216	247	31	14.4%	209	250	41	19.6%
Kualapa Loop at Project Entrance for Alternate A	146	177	31	21.2%	144	185	41	28.5%
Kualapa Loop at The Vintage Entrance	146	146	0	0.0%	144	144	0	0.0%
The Vintage Entrance at The Palsades Entrance	85	85	0	0.0%	77	77	0	0.0%
The Palsades Entrance at Project Entrance for Alternate B	37	37	0	0.0%	40	40	0	0.0%

Note:
(1) Volumes shown are the total approach volume during the respective peak hour.

There is no established criteria for significance based on the change in peak hour traffic at a signalized intersection. However, it is generally accepted that if the change is 5% or greater, some mitigation will be required unless the final Level-of-Service is high (LOS A or B).

The results of the level-of-service analysis for Alternate A are shown in Table 6. Shown in the table are average vehicle delays and the Levels-of-Service. The level-of-service analysis concludes that all traffic movements will operate at Level-of-Service B or better. This indicates that the project has minimal impacts on traffic operating conditions and vehicle delays.

Table 6 Level-of-Service Analysis for 2010 Peak Hour Conditions - Alternate A

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	Delay ¹	LOS ²	Delay ¹	LOS ²
Kualapa Loop at Kekaa Drive				
Eastbound Left & Thru	7.5	A	7.7	A
Southbound Left & Right	10.9	B	13.8	B
Kualapa Loop at Kaanapali Royal Drive				
Southbound Left & Thru	7.5	A	7.5	A
Westbound Left & Right	10.3	B	10.2	B
Kualapa Loop at Project Entrance for Alternate A				
Southbound Left & Thru	7.4	A	7.5	A
Westbound Left & Right	9.5	A	9.5	A
Kualapa Loop at the Vintage Entrance				
Southbound Left & Thru	7.4	A	7.4	A
Westbound Left & Right	9.3	A	9.3	A
The Vintage Entrance at the Palisades Entrance				
Westbound Left & Thru	7.3	A	7.3	A
Northbound Left & Right	9.0	A	8.9	A
The Palisades Entrance at Project Entrance for Alternate B				
Westbound Left & Thru	NA	NA	NA	NA
Northbound Left & Right	NA	NA	NA	NA

NOTES:

- (1) Average vehicle delay in seconds per vehicle.
 (2) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay. The level-of-service calculation worksheets are presented at Attachment C.

Alternate B

Table 7 is an analysis of the changes in traffic volumes at the study intersections. Shown are the 2010 peak hour projections without and with the project, the peak hourly change, and the percent change related to the peak hourly volume without the project. The volumes shown are the total volume of traffic approaching the intersection.

Table 7 Analysis of Changes in Peak Hourly Traffic Projections - Alternate B

Intersection	AM Peak Hourly Volume ⁽¹⁾				PM Peak Hour			
	Without Project	With Project	Change	Percent Change	Without Project	With Project	Change	Percent Change
Kualapa Loop at Kekaa Drive	388	418	30	7.7%	424	463	39	9.2%
Kualapa Loop at Royal Kaanapali	216	247	31	14.4%	209	250	41	19.6%
Kualapa Loop at Project Entrance for Alternate A	146	177	31	21.2%	144	185	41	28.5%
Kualapa Loop at The Vintage Entrance	146	177	31	21.2%	144	185	41	28.5%
The Vintage Entrance at The Palisades Entrance	85	116	31	36.5%	77	118	41	53.2%
The Palisades Entrance at Project Entrance for Alternate B	37	68	31	83.8%	40	81	41	102.5%

Note:
(1) Volumes shown are the total approach volume during the respective peak hour.

The results of the level-of-service analysis for Alternate A are shown in Table 8. Shown in the table are average vehicle delays and the Levels-of-Service. The level-of-service analysis concludes that all traffic movements will operate at Level-of-Service B or better. This indicates that the project has minimal impacts on traffic operating conditions and vehicle delays.

Table 8 Level-of-Service Analysis for 2010 Peak Hour Conditions - Alternate B

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	Delay ¹	LOS ²	Delay ¹	LOS ²
Kualapa Loop at Kekaa Drive				
Eastbound Left & Thru	7.5	A	7.7	A
Southbound Left & Right	10.9	B	13.8	B
Kualapa Loop at Kaanapali Royal Drive				
Southbound Left & Thru	7.5	A	7.5	A
Westbound Left & Right	10.3	B	10.2	B
Kualapa Loop at Project Entrance for Alternate A				
Southbound Left & Thru	NA	NA	NA	NA
Westbound Left & Right	NA	NA	NA	NA
Kualapa Loop at the Vintage Entrance				
Southbound Left & Thru	7.4	A	7.5	A
Westbound Left & Right	9.5	A	9.5	A
The Vintage Entrance at the Palisades Entrance				
Westbound Left & Thru	7.4	A	7.4	A
Northbound Left & Right	9.1	A	9.1	A
The Palisades Entrance at Project Entrance for Alternate B				
Westbound Left & Thru	7.3	A	7.3	A
Northbound Left & Right	8.9	A	8.9	A

NOTES:

- (1) Average vehicle delay in seconds per vehicle.
 (2) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay. The level-of-service calculation worksheets are presented at Attachment C.

Summary and Conclusions

1. The project will consist of 26 single-family units and 26 ohana units.
2. It was assumed that the project would be completed by 2010.
3. There are two alternate locations for the driveway to the project. The first is along the east side of Kualapa Loop adjacent to the existing railroad crossing. The second is along the south side of the entrance roadway to The Palisades.
4. The proposed project will generate 7 inbound and 24 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 26 inbound and 15 outbound trips. The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour. Based on the criterion, a traffic impact analysis is not warranted.
5. The level-of-service analysis concludes that all traffic movements will operate at Level-of-Service B or better. This indicates that the project has minimal impacts on traffic operating conditions and vehicle delays.

APPENDIX A
TRAFFIC PROJECTION WORKSHEETS FOR
ALTERNATE A

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**Table A-1
TRAFFIC PROJECTION WORKSHEET - ALTERNATE A
Kualapa Loop at Kekaa Drive**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Rt	24	17			24	21	48	38	10	5	58	43
	Lt	31	29			30	34	61	63	13	9	74	72
East	Rt	20	29			17	32	37	61	2	16	39	77
	Th	29	49	4	7	0	0	33	56	0	0	33	56
West	Th	130	148	18	20	0	0	148	168	0	0	148	168
	Lt	34	18			27	20	61	38	5	9	66	47
Total		268	290	22	27	98	107	388	424	30	39	418	463

Approach Totals

From North	55	46	0	0	54	55	109	101	23	14	132	115
From East	49	78	4	7	17	32	70	117	2	16	72	133
From West	164	166	18	20	27	20	209	206	5	9	214	215
Totals	268	290	22	27	98	107	388	424	30	39	418	463

**Table A-2
TRAFFIC PROJECTION WORKSHEET - ALTERNATE A
Kualapa Loop at Kaanapali Royal Driveway**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Th	9	7			54	55	63	62	23	14	86	76
	Lt	3	6					3	6	1	1	4	7
East	Rt	6	3					6	3		1	6	4
	Th	46	39					46	39			46	39
South	Rt	24	21					24	21			24	21
	Th	30	26			44	52	74	78	7	25	81	103
Total		118	102	0	0	98	107	216	209	31	41	247	250

Approach Totals

From North	12	13	0	0	54	55	66	68	24	15	90	83
From East	52	42	0	0	0	0	52	42	0	1	52	43
From South	54	47	0	0	44	52	98	99	7	25	105	124
Totals	118	102	0	0	98	107	216	209	31	41	247	250

**Table A-3
TRAFFIC PROJECTION WORKSHEET - ALTERNATE A
Kualapa Loop at Project Entrance for Alternate A**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Th	0	0			54	55	54	55			54	55
	Lt	0	0					0	0			0	0
East	Rt	0	0					0	0	24	15	24	15
	Lt	12	13					12	13	7	26	19	39
South	Rt	36	24					36	24			36	24
	Th	0	0			44	52	44	52			44	52
Total		48	37	0	0	98	107	146	144	31	41	177	185

Approach Totals													
From North	0	0	0	0	54	55	54	55	0	0	54	55	
From East	12	13	0	0	0	0	12	13	31	41	43	64	
From South	36	24	0	0	44	52	80	76	0	0	80	76	
Totals	48	37	0	0	98	107	146	144	31	41	177	185	

**APPENDIX B
TRAFFIC PROJECTION WORKSHEETS FOR
ALTERNATE B**

Phillip Rowell and Associates

**Table B-1
TRAFFIC PROJECTION WORKSHEET - ALTERNATE B
Kualapa Loop at Kekaa Drive**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Rt	24	17			24	21	48	38	10	5	58	43
	Lt	31	29			30	34	61	63	13	9	74	72
						17	32	37	61	2	16	39	77
East	Rt	20	29					33	56	0	0	33	56
	Th	29	49	4	7	0	0	148	168	0	0	148	168
West	Th	130	148	18	20	0	0	61	38	5	9	66	47
	Lt	34	18			27	20	388	424	30	39	418	463
Total		268	290	22	27	98	107						

Approach Totals													
From North	55	46	0	0	54	55	109	101	23	14	132	115	
From East	49	78	4	7	17	32	70	117	2	16	72	133	
From West	164	166	18	20	27	20	209	206	5	9	214	215	
Totals	268	290	22	27	98	107	388	424	30	39	418	463	

**Table B-2
TRAFFIC PROJECTION WORKSHEET - ALTERNATE B
Kualapa Loop at Kaanapali Royal Driveway**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Th	9	7			54	55	63	62	23	14	86	76
	Lt	3	6					3	6	1	1	4	7
								6	3		1	6	4
East	Rt	6	3					46	39			46	39
	Th	46	39					24	21			24	21
South	Rt	24	21			44	52	74	78	7	25	81	103
	Th	30	26					216	209	31	41	247	250
Total		118	102	0	0	98	107						

Approach Totals													
From North	12	13	0	0	54	55	66	68	24	15	90	83	
From East	52	42	0	0	0	0	52	42	0	1	52	43	
From South	54	47	0	0	44	52	98	99	7	25	105	124	
Totals	118	102	0	0	98	107	216	209	31	41	247	250	

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**Table B-3
TRAFFIC PROJECTION WORKSHEET - ALTERNATE B
Kualapa Loop at Project Entrance for Alternate A**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Th	0	0			54	55	54	55	24	15	78	70
	Lt	0	0					0	0			0	0
East	Rt	0	0					0	0			0	0
	Lt	12	13					12	13			12	13
South	Rt	36	24					36	24			36	24
	Th	0	0			44	52	44	52	7	26	51	78
Total		48	37	0	0	98	107	146	144	31	41	177	185

Approach Totals

From North	0	0	0	0	54	55	54	55	24	15	78	70
From East	12	13	0	0	0	0	12	13	0	0	12	13
From South	36	24	0	0	44	52	80	76	7	26	87	102
Totals	48	37	0	0	98	107	146	144	31	41	177	185

**Table B-4
TRAFFIC PROJECTION WORKSHEET - ALTERNATE B
Kualapa Loop at The Vintage Entrance**

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Th					34	34	34	34			34	34
	Lt							0	0			0	0
East	Rt							0	0			0	0
	Lt	12	13			20	21	32	34	24	15	56	49
South	Rt	36	24			17	19	53	43	7	26	60	69
	Th					27	33	27	33			27	33
Total		48	37	0	0	98	107	146	144	31	41	177	185

Approach Totals

From North	0	0	0	0	34	34	34	34	0	0	34	34
From East	12	13	0	0	20	21	32	34	24	15	56	49
From South	36	24	0	0	44	52	80	76	7	26	87	102
Totals	48	37	0	0	98	107	146	144	31	41	177	185

Table B-5
TRAFFIC PROJECTION WORKSHEET - ALTERNATE B
The Vintage Entrance at The Palisades Entrance

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
East	Th	12	13					12	13			12	13
	Lt							0	0			0	0
South	Rt					20	21	20	21	24	15	44	36
	Lt					17	19	17	19	7	26	24	45
West	Rt							36	24			36	24
	Th	36	24										
Total		48	37	0	0	37	40	85	77	31	41	116	118

Approach Totals													
From North		12	13	0	0	0	0	12	13	0	0	12	13
From East		0	0	0	0	20	21	20	21	24	15	44	36
From South		36	24	0	0	17	19	53	43	7	26	60	69
Totals		48	37	0	0	37	40	85	77	31	41	116	118

Table B-6
TRAFFIC PROJECTION WORKSHEET - ALTERNATE B
The Palisades Entrance at Project Entrance for Alternate B

Approach	Mvt	Existing		Background		Related Projects		Cumulative		Project Generated		Cumulative Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
East	Th					20	21	20	21			20	21
	Lt							0	0			0	0
South	Rt							0	0	24	15	24	15
	Lt							0	0	7	26	7	26
West	Rt					17	19	17	19			17	19
	Th							37	40	31	41	68	81
Total		0	0	0	0	37	40	37	40	31	41	68	81

Approach Totals													
From North		0	0	0	0	20	21	20	21	0	0	20	21
From East		0	0	0	0	0	0	0	0	24	15	24	15
From South		0	0	0	0	17	19	17	19	7	26	24	45
Totals		0	0	0	0	37	40	37	40	31	41	68	81

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APPENDIX C
LEVEL-OF-SERVICE CALCULATION WORKSHEETS

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List of File Names for Level-of-Service Calculations

<u>File Name</u>	<u>Conditions</u>	<u>Time</u>	<u>Intersection</u>
Case1.1am	Existing	AM	Kualapa Loop at Kekaa Drive
Case1.1pm	Existing	PM	Kualapa Loop at Kekaa Drive
Case1.2am	Existing	AM	Kualapa Loop at Royal Kaanapali
Case1.2pm	Existing	PM	Kualapa Loop at Royal Kaanapali
Case2.1am	Cumulative	AM	Kualapa Loop at Kekaa Drive
Case2.1pm	Cumulative	PM	Kualapa Loop at Kekaa Drive
Case2.2am	Cumulative	AM	Kualapa Loop at Royal Kaanapali
Case2.2pm	Cumulative	PM	Kualapa Loop at Royal Kaanapali
Case2.4am	Cumulative	AM	Kualapa Loop at The Vintage Entrance
Case2.4pm	Cumulative	PM	Kualapa Loop at The Vintage Entrance
Case2.5am	Cumulative	AM	The Vintage Entrance at The Palisades Entrance
Case2.5pm	Cumulative	PM	The Vintage Entrance at The Palisades Entrance
Case3.1am	Cumulative + Alternate A	AM	Kualapa Loop at Kekaa Drive
Case3.1pm	Cumulative + Alternate A	PM	Kualapa Loop at Kekaa Drive
Case3.2am	Cumulative + Alternate A	AM	Kualapa Loop at Royal Kaanapali
Case3.2pm	Cumulative + Alternate A	PM	Kualapa Loop at Royal Kaanapali
Case3.3am	Cumulative + Alternate A	AM	Kualapa Loop at Project Entrance for Alternate A
Case3.3pm	Cumulative + Alternate A	PM	Kualapa Loop at Project Entrance for Alternate A
Case4.1am	Cumulative + Alternate B	AM	Kualapa Loop at Kekaa Drive
Case4.1pm	Cumulative + Alternate B	PM	Kualapa Loop at Kekaa Drive
Case4.2am	Cumulative + Alternate B	AM	Kualapa Loop at Royal Kaanapali
Case4.2pm	Cumulative + Alternate B	PM	Kualapa Loop at Royal Kaanapali
Case4.4am	Cumulative + Alternate B	AM	Kualapa Loop at The Vintage Entrance
Case4.4pm	Cumulative + Alternate B	PM	Kualapa Loop at The Vintage Entrance
Case4.5am	Cumulative + Alternate B	AM	The Vintage Entrance at The Palisades Entrance
Case4.5pm	Cumulative + Alternate B	PM	The Vintage Entrance at The Palisades Entrance
Case4.6am	Cumulative + Alternate B	AM	The Palisades Entrance at Project Entrance for Alternate B
Case4.6pm	Cumulative + Alternate B	PM	The Palisades Entrance at Project Entrance for Alternate B

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	PJR			Intersection	Case 1.1am			
Agency/Co.	PRA			Jurisdiction				
Date Performed	2/20/02			Analysis Year				
Analysis Time Period								
Project Description				North/South Street:				
East/West Street:				Study Period (hrs): 0.25				
Intersection Orientation East-West								
Vehicle Volumes and Adjustments								
Major Street		Eastbound			Westbound			
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	34	130	0	0	29	20		
Peak-Hour Factor, PHF	0.94	0.98	1.00	1.00	1.00	0.83		
Hourly Flow Rate, HFR	36	131	0	0	29	24		
Percent Heavy Vehicles	0	-	-	0	-	-		
Undivided								
Median Type			0			0		
RT Channelized			0	0	1	0		
Lanes	0	1	0			TR		
Configuration	LT				0			
Upstream Signal		0						
Minor Street		Northbound			Southbound			
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	0	0	31	0	24		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.86	1.00	0.67		
Hourly Flow Rate, HFR	0	0	0	36	0	35		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach		EB	WB	Northbound			Southbound	
Movement	1	4		7	8	9	10	11
Lane Configuration	LT							LR
v (vph)	36							71
C (m) (vph)	1566							856
v/c	0.02							0.08
95% queue length	0.07							0.27
Control Delay	7.4							9.6
LOS	A							A
Approach Delay	--	--						9.6
Approach LOS	--	--						A

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst			Intersection	Case1.1pm				
Agency/Co.			Jurisdiction					
Date Performed	2/20/02		Analysis Year					
Analysis Time Period								
Project Description								
East/West Street:			North/South Street:					
Intersection Orientation East-West			Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	18	148	0	0	49	29		
Peak-Hour Factor, PHF	0.50	0.84	1.00	1.00	0.77	0.81		
Hourly Flow Rate, HFR	36	176	0	0	64	35		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT					TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	0	0	29	0	17		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.60	1.00	0.71		
Hourly Flow Rate, HFR	0	0	0	47	0	24		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (vph)	36						71	
C (m) (vph)	1507						737	
v/c	0.02						0.10	
95% queue length	0.07						0.32	
Control Delay	7.4						10.4	
LOS	A						B	
Approach Delay	--	--					10.4	
Approach LOS	--	--					B	

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst		Agency/Co.		Intersection		Case1.2am		
Date Performed		2/21/02		Jurisdiction				
Analysis Time Period				Analysis Year				
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound				Southbound			
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	30	24	3	9	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	40	32	4	12	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	46	0	6	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	61	0	8	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		4		69				
C (m) (vph)		1541		939				
v/c		0.00		0.07				
95% queue length		0.01		0.24				
Control Delay		7.3		9.1				
LOS		A		A				
Approach Delay	-	-	9.1					
Approach LOS	-	-	A					

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TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst		Agency/Co.		Intersection		Case1.2pm	
Date Performed		2/21/02		Jurisdiction			
Analysis Time Period				Analysis Year			
Project Description							
East/West Street:				North/South Street:			
Intersection Orientation: <i>North-South</i>				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume	0	26	21	6	7	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	0	34	28	8	9	0	
Percent Heavy Vehicles	0	-	-	0	-	-	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration			TR	LT			
Upstream Signal		0			0		
Minor Street	Westbound			Eastbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	39	0	3	0	0	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	52	0	4	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
v (vph)		8		56			
C (m) (vph)		1554		937			
v/c		0.01		0.06			
95% queue length		0.02		0.19			
Control Delay		7.3		9.1			
LOS		A		A			
Approach Delay	--	--	9.1				
Approach LOS	--	--	A				

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	PJR		Intersection	Case2.1am				
Agency/Co.	PRA		Jurisdiction					
Date Performed	2/20/02		Analysis Year					
Analysis Time Period								
Project Description								
East/West Street:			North/South Street:					
Intersection Orientation <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	61	148	0	0	33	37		
Peak-Hour Factor, PHF	0.94	0.98	1.00	1.00	1.00	0.83		
Hourly Flow Rate, HFR	64	150	0	0	33	44		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT					TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	0	0	61	0	48		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.86	1.00	0.67		
Hourly Flow Rate, HFR	0	0	0	70	0	71		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (vph)	64						141	
C (m) (vph)	1535						786	
v/c	0.04						0.18	
95% queue length	0.13						0.65	
Control Delay	7.4						10.6	
LOS	A						B	
Approach Delay	-	-					10.6	
Approach LOS	-	-					B	

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst				Intersection	Case2.1pm			
Agency/Co.				Jurisdiction				
Date Performed	2/20/02			Analysis Year				
Analysis Time Period								
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	38	168	0	0	56	61		
Peak-Hour Factor, PHF	0.50	0.84	1.00	1.00	0.77	0.81		
Hourly Flow Rate, HFR	76	199	0	0	73	75		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT			TR				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	0	0	63	0	38		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.60	1.00	0.71		
Hourly Flow Rate, HFR	0	0	0	104	0	53		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration				LR				
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					LR		
v (vph)	76					157		
C (m) (vph)	1446					625		
v/c	0.05					0.25		
95% queue length	0.17					0.99		
Control Delay	7.6					12.7		
LOS	A					B		
Approach Delay	--					12.7		
Approach LOS	--					B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst		Agency/Co.		Intersection		Case2.2am		
Date Performed		2/21/02		Jurisdiction				
Analysis Time Period				Analysis Year				
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	74	24	3	63	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	98	32	4	84	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	46	0	6	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	61	0	8	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		4		69				
C (m) (vph)		1468		801				
v/c		0.00		0.09				
95% queue length		0.01		0.28				
Control Delay		7.5		9.9				
LOS		A		A				
Approach Delay	--	--	9.9					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst				Intersection	Case2.2pm		
Agency/Co.	2/21/02			Jurisdiction			
Date Performed				Analysis Year			
Analysis Time Period							
Project Description				North/South Street:			
East/West Street:				Study Period (hrs): 0.25			
Intersection Orientation: North-South							
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
	1	2	3	4	5	6	
Movement	L	T	R	L	T	R	
Volume	0	78	21	6	62	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	0	104	28	8	82	0	
Percent Heavy Vehicles	0	-	-	0	-	-	
Median Type				Undivided			
RT Channelized							
Lanes	0	1	0	0	1	0	
Configuration							
Upstream Signal	0						
Minor Street	Westbound			Eastbound			
	7	8	9	10	11	12	
Movement	L	T	R	L	T	R	
Volume	39	0	3	0	0	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	52	0	4	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach	N			N			
Storage	0			0			
RT Channelized	0			0			
Lanes	0	0	0	0	0	0	
Configuration	LR						
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
	1	4	7	8	9	10	11
Movement		LT		LR			
Lane Configuration		8		56			
v (vph)		1466		783			
C (m) (vph)		0.01		0.07			
v/c		0.02		0.23			
95% queue length		7.5		10.0-			
Control Delay		A		A			
LOS				10.0-			
Approach Delay	-	-		A			
Approach LOS	-	-		A			

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	PJR	Intersection	Case 2.4am
Agency/Co.	PRA	Jurisdiction	
Date Performed	2/21/02	Analysis Year	2010 Cumulative
Project Description: Kaanapali Parcel 10-H		North/South Street:	
East/West Street:		Study Period (hrs): 0.25	
Intersection Orientation: North-South			

Vehicle Volumes and Adjustments						
Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume	0	27	53	0	34	0
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Hourly Flow Rate, HFR	0	36	70	0	45	0
Percent Heavy Vehicles	0	-	-	0	-	-
Median Type	Undivided					
RT Channelized			0	0	1	0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	
Minor Street	Westbound			Eastbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume	32	0	0	0	0	0
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Hourly Flow Rate, HFR	42	0	0	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			N	
Flared Approach		N			0	
Storage		0				0
RT Channelized			0	0	0	0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration		LT		LR				
v (vph)		0		42				
C (m) (vph)		1498		885				
v/c		0.00		0.05				
95% queue length		0.00		0.15				
Control Delay		7.4		9.3				
LOS		A		A				
Approach Delay	-	-		9.3				
Approach LOS	-	-		A				

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TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	PJR			Intersection	Case 2.4pm		
Agency/Co.	PRA			Jurisdiction			
Date Performed	2/21/02			Analysis Year	2010 Cumulative		
Analysis Time Period							
Project Description Kaanapali Parcel 10-H							
East/West Street:				North/South Street:			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
	1	2	3	4	5	6	
Movement	L	T	R	L	T	R	
Volume	0	33	43	0	34	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	0	44	57	0	45	0	
Percent Heavy Vehicles	0	-	-	0	-	-	
Median Type							
Undivided							
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration			TR	LT			
Upstream Signal							
0							
Minor Street	Westbound			Eastbound			
	7	8	9	10	11	12	
Movement	L	T	R	L	T	R	
Volume	34	0	0	0	0	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	45	0	0	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)							
0							
Flared Approach							
N							
Storage							
0							
RT Channelized							
0							
Lanes							
0							
Configuration							
LR							
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
	1	4	7	8	9	10	11
Movement							
Lane Configuration		LT		LR			
v (vph)		0		45			
C (m) (vph)		1504		884			
v/c		0.00		0.05			
95% queue length		0.00		0.16			
Control Delay		7.4		9.3			
LOS		A		A			
Approach Delay	-	-		9.3			
Approach LOS	-	-		A			

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TWO-WAY STOP CONTROL SUMMARY								
General Information			Site Information					
Analyst	PJR		Intersection	Case 2.5am				
Agency/Co.	PRA		Jurisdiction					
Date Performed	2/21/02		Analysis Year	2010 Cumulative				
Analysis Time Period								
Project Description <i>Kaanapali Parcel 10-H</i>								
East/West Street:			North/South Street:					
Intersection Orientation <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	36	17	0	12	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	48	22	0	16	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	20	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	26	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		26				
C (m) (vph)		1544		933				
v/c		0.00		0.03				
95% queue length		0.00		0.09				
Control Delay		7.3		9.0				
LOS		A		A				
Approach Delay	--	--	9.0					
Approach LOS	--	--	A					

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	PJR			Intersection	Case2.5pm			
Agency/Co.	PRA			Jurisdiction				
Date Performed	2/21/02			Analysis Year	2010 Cumulative			
Analysis Time Period								
Project Description	Kaanapali Parcel 10-H							
East/West Street:				North/South Street:				
Intersection Orientation	East-West			Study Period (hrs):	0.25			
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	24	19	0	13	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	32	25	0	17	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	21	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	28	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		28				
C (m) (vph)		1560		950				
v/c		0.00		0.03				
95% queue length		0.00		0.09				
Control Delay		7.3		8.9				
LOS		A		A				
Approach Delay	-	-		8.9				
Approach LOS	-	-		A				

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst				Intersection	Case3.1am			
Agency/Co.				Jurisdiction				
Date Performed	2/20/02			Analysis Year				
Analysis Time Period								
Project Description				North/South Street:				
East/West Street:				Study Period (hrs): 0.25				
Intersection Orientation East-West								
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	66	148	0	0	33	39		
Peak-Hour Factor, PHF	0.94	0.98	1.00	1.00	1.00	0.83		
Hourly Flow Rate, HFR	69	150	0	0	33	46		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT					TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	0	0	74	0	58		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.86	1.00	0.67		
Hourly Flow Rate, HFR	0	0	0	85	0	86		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (vph)	69						171	
C (m) (vph)	1532						777	
v/c	0.05						0.22	
95% queue length	0.14						10.9	
Control Delay	7.5						B	
LOS	A						10.9	
Approach Delay	--	--					B	
Approach LOS	--	--						

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst				Intersection	Case3.1pm			
Agency/Co.				Jurisdiction				
Date Performed	2/20/02			Analysis Year				
Analysis Time Period								
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	47	168	0	0	56	77		
Peak-Hour Factor, PHF	0.50	0.84	1.00	1.00	0.77	0.81		
Hourly Flow Rate, HFR	94	199	0	0	73	95		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT					TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	0	0	72	0	43		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.60	1.00	0.71		
Hourly Flow Rate, HFR	0	0	0	119	0	60		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (vph)	94						179	
C (m) (vph)	1422						587	
v/c	0.07						0.30	
95% queue length	0.21						1.28	
Control Delay	7.7						13.8	
LOS	A						B	
Approach Delay	-	-					13.8	
Approach LOS	-	-					B	

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst				Intersection	Case3.2am		
Agency/Co.				Jurisdiction			
Date Performed	2/21/02			Analysis Year			
Analysis Time Period							
Project Description				North/South Street:			
East/West Street:				Study Period (hrs): 0.25			
Intersection Orientation: North-South							
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume	0	81	24	4	86	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	0	108	32	5	114	0	
Percent Heavy Vehicles	0	-	-	0	-	-	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration			TR	LT			
Upstream Signal		0			0		
Minor Street	Westbound			Eastbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	46	0	6	0	0	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	61	0	8	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
v (vph)		5		69			
C (m) (vph)		1456		760			
v/c		0.00		0.09			
95% queue length		0.01		0.30			
Control Delay		7.5		10.2			
LOS		A		B			
Approach Delay	-	-	10.2				
Approach LOS	-	-	B				

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst				Intersection <i>Case3.2pm</i>				
Agency/Co.				Jurisdiction				
Date Performed <i>2/21/02</i>				Analysis Year				
Analysis Time Period								
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street		Northbound			Southbound			
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	103	21	7	76	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	137	28	9	101	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street		Westbound			Eastbound			
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	39	0	4	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	52	0	5	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		9		57				
C (m) (vph)		1426		732				
v/c		0.01		0.08				
95% queue length		0.02		0.25				
Control Delay		7.5		10.3				
LOS		A		B				
Approach Delay	--	--	10.3					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY								
General Information			Site Information					
Analyst			Intersection	Case3.3am				
Agency/Co.			Jurisdiction					
Date Performed	2/21/02		Analysis Year					
Analysis Time Period								
Project Description								
East/West Street:			North/South Street:					
Intersection Orientation: North-South			Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	80	7	0	66	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	106	9	0	88	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	2	0		
Configuration			TR	LT	T			
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	24	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	32	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		32				
C (m) (vph)		1487		828				
v/c		0.00		0.04				
95% queue length		0.00		0.12				
Control Delay		7.4		9.5				
LOS		A		A				
Approach Delay	-	-	9.5					
Approach LOS	-	-	A					

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TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst				Intersection	Case3.3pm		
Agency/Co.				Jurisdiction			
Date Performed	2/21/02			Analysis Year			
Analysis Time Period							
Project Description				North/South Street:			
East/West Street:				Study Period (hrs): 0.25			
Intersection Orientation: North-South							
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume	0	76	26	0	68	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	0	101	34	0	90	0	
Percent Heavy Vehicles	0	-	-	0	-	-	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	0	0	2	0	
Configuration			TR	LT	T		
Upstream Signal		0			0		
Minor Street	Westbound			Eastbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	15	0	0	0	0	0	
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	
Hourly Flow Rate, HFR	20	0	0	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0						
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
v (vph)		0		20			
C (m) (vph)		1462		817			
v/c		0.00		0.02			
95% queue length		0.00		0.08			
Control Delay		7.5		9.5			
LOS		A		A			
Approach Delay	-	-	9.5				
Approach LOS	-	-	A				

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TWO-WAY STOP CONTROL SUMMARY									
General Information				Site Information					
Analyst				Intersection <i>Case4.1am</i>					
Agency/Co.				Jurisdiction					
Date Performed <i>2/20/02</i>				Analysis Year					
Analysis Time Period									
Project Description									
East/West Street:				North/South Street:					
Intersection Orientation <i>East-West</i>				Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments									
Major Street		Eastbound			Westbound				
Movement		1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume		66	148	0	0	33	39		
Peak-Hour Factor, PHF		0.94	0.98	1.00	1.00	1.00	0.83		
Hourly Flow Rate, HFR		69	150	0	0	33	46		
Percent Heavy Vehicles		0	--	--	0	--	--		
Median Type		<i>Undivided</i>							
RT Channelized				0			0		
Lanes		0	1	0	0	1	0		
Configuration		<i>LT</i>					<i>TR</i>		
Upstream Signal			0			0			
Minor Street		Northbound			Southbound				
Movement		7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume		0	0	0	74	0	58		
Peak-Hour Factor, PHF		1.00	1.00	1.00	0.86	1.00	0.67		
Hourly Flow Rate, HFR		0	0	0	85	0	86		
Percent Heavy Vehicles		0	0	0	0	0	0		
Percent Grade (%)		0			0				
Flared Approach			<i>N</i>			<i>N</i>			
Storage			0			0			
RT Channelized				0			0		
Lanes		0	0	0	0	0	0		
Configuration						<i>LR</i>			
Delay, Queue Length, and Level of Service									
Approach		EB	WB	Northbound			Southbound		
Movement		1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>						<i>LR</i>	
v (vph)		69						171	
C (m) (vph)		1532						777	
v/c		0.05						0.22	
95% queue length		0.14						0.84	
Control Delay		7.5						10.9	
LOS		<i>A</i>						<i>B</i>	
Approach Delay		--	--					10.9	
Approach LOS		--	--					<i>B</i>	

TWO-WAY STOP CONTROL SUMMARY									
General Information				Site Information					
Analyst				Intersection	Case4.1pm				
Agency/Co.				Jurisdiction					
Date Performed	2/20/02			Analysis Year					
Analysis Time Period									
Project Description									
East/West Street:				North/South Street:					
Intersection Orientation East-West				Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments									
Major Street		Eastbound			Westbound				
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	47	168	0	0	56	77			
Peak-Hour Factor, PHF	0.50	0.84	1.00	1.00	0.77	0.81			
Hourly Flow Rate, HFR	94	199	0	0	73	95			
Percent Heavy Vehicles	0	-	-	0	-	-			
Median Type	Undivided								
RT Channelized			0				0		
Lanes	0	1	0	0	1	0			
Configuration	LT					TR			
Upstream Signal		0			0				
Minor Street		Northbound			Southbound				
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	0	0	0	72	0	43			
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.60	1.00	0.71			
Hourly Flow Rate, HFR	0	0	0	119	0	60			
Percent Heavy Vehicles	0	0	0	0	0	0			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			0			
Lanes	0	0	0	0	0	0			
Configuration					LR				
Delay, Queue Length, and Level of Service									
Approach	EB	WB	Northbound			Southbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LT						LR		
v (vph)	94						179		
C (m) (vph)	1422						587		
v/c	0.07						0.30		
95% queue length	0.21						1.28		
Control Delay	7.7						13.8		
LOS	A						B		
Approach Delay	-	-					13.8		
Approach LOS	-	-					B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst				Intersection	Case4.2am			
Agency/Co.				Jurisdiction				
Date Performed	2/21/02			Analysis Year				
Analysis Time Period								
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	81	24	4	86	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	108	32	5	114	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	46	0	6	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	61	0	8	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		5		69				
C (m) (vph)		1456		760				
v/c		0.00		0.09				
95% queue length		0.01		0.30				
Control Delay		7.5		10.2				
LOS		A		B				
Approach Delay	-	-	10.2					
Approach LOS	-	-	B					

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst				Intersection <i>Case4.2pm</i>				
Agency/Co.				Jurisdiction				
Date Performed <i>2/21/02</i>				Analysis Year				
Analysis Time Period								
Project Description								
East/West Street:				North/South Street:				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	103	21	7	76	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	137	28	9	101	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	39	0	4	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	52	0	5	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		9		57				
C (m) (vph)		1426		732				
v/c		0.01		0.08				
95% queue length		0.02		0.25				
Control Delay		7.5		10.3				
LOS		A		B				
Approach Delay	-	-	10.3					
Approach LOS	-	-	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	<i>PJR</i>		Intersection	<i>Case4.4am</i>				
Agency/Co.	<i>PRA</i>		Jurisdiction					
Date Performed	<i>2/21/02</i>		Analysis Year	<i>2010 Cumulative Plus Project B</i>				
Analysis Time Period								
Project Description <i>Kaanapali Parcel 10-H</i>								
East/West Street:			North/South Street:					
Intersection Orientation <i>North-South</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	27	60	0	34	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	36	80	0	45	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	56	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	74	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		74				
C (m) (vph)		1485		879				
v/c		0.00		0.08				
95% queue length		0.00		0.28				
Control Delay		7.4		9.5				
LOS		A		A				
Approach Delay	-	-		9.5				
Approach LOS	-	-		A				

>

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	PJR			Intersection	Case4.4pm			
Agency/Co.	PRA			Jurisdiction				
Date Performed	2/21/02			Analysis Year	2010 Cumulative			
Analysis Time Period								
Project Description: Kaanapali Parcel 10-H								
East/West Street:				North/South Street:				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	33	69	0	34	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	44	92	0	45	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	49	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	65	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		65				
C (m) (vph)		1461		863				
v/c		0.00		0.08				
95% queue length		0.00		0.24				
Control Delay		7.5		9.5				
LOS		A		A				
Approach Delay	-	-	9.5					
Approach LOS	-	-	A					

>

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	PJR			Intersection	Case4.5am			
Agency/Co.	PRA			Jurisdiction				
Date Performed	2/21/02			Analysis Year	2010 Cumulative			
Analysis Time Period								
Project Description Kaanapali Parcel 10-H				North/South Street:				
East/West Street:				Study Period (hrs): 0.25				
Intersection Orientation East-West								
Vehicle Volumes and Adjustments								
Major Street		Eastbound			Westbound			
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	36	24	0	12	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	48	32	0	16	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street		Northbound			Southbound			
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	44	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	58	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		58				
C (m) (vph)		1531		927				
v/c		0.00		0.06				
95% queue length		0.00		0.20				
Control Delay		7.4		9.1				
LOS		A		A				
Approach Delay	-	-		9.1				
Approach LOS	-	-		A				

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	PJR		Intersection	Case4.5pm				
Agency/Co.	PRA		Jurisdiction					
Date Performed	2/21/02		Analysis Year	2010 Cumulative				
Analysis Time Period								
Project Description <i>Kaanapali Parcel 10-H</i>								
East/West Street:			North/South Street:					
Intersection Orientation <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	24	45	0	13	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	32	60	0	17	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	36	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	48	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		48				
C (m) (vph)		1515		929				
v/c		0.00		0.05				
95% queue length		0.00		0.16				
Control Delay		7.4		9.1				
LOS		A		A				
Approach Delay	-	-		9.1				
Approach LOS	-	-		A				

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	PJR		Intersection	Case 4.6am				
Agency/Co.	PRA		Jurisdiction					
Date Performed	2/21/02		Analysis Year	2010 Cumulative				
Analysis Time Period								
Project Description <i>Kaanapali Parcel 10-H</i>								
East/West Street:			North/South Street:					
Intersection Orientation <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	0	17	7	0	20	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	0	22	9	0	26	0		
Percent Heavy Vehicles	0	-	-	0	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	24	0	0	0	0	0		
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75		
Hourly Flow Rate, HFR	32	0	0	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		0		32				
C (m) (vph)		1595		962				
v/c		0.00		0.03				
95% queue length		0.00		0.10				
Control Delay		7.3		8.9				
LOS		A		A				
Approach Delay	-	-	8.9					
Approach LOS	-	-	A					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	PJR	Intersection	Case4.6am
Agency/Co.	PRA	Jurisdiction	
Date Performed	2/21/02	Analysis Year	2010 Cumulative
Analysis Time Period			

Project Description <i>Kaanapali Parcel 10-H</i>	
East/West Street:	North/South Street:
Intersection Orientation <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume	0	19	26	0	21	0
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Hourly Flow Rate, HFR	0	25	34	0	28	0
Percent Heavy Vehicles	0	-	-	0	-	-
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume	15	0	0	0	0	0
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Hourly Flow Rate, HFR	20	0	0	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
v (vph)		0		20			
C (m) (vph)		1558		939			
v/c		0.00		0.02			
95% queue length		0.00		0.07			
Control Delay		7.3		8.9			
LOS		A		A			
Approach Delay	--	--		8.9			
Approach LOS	--	--		A			

APPENDIX I
Archaeological Inventory Survey

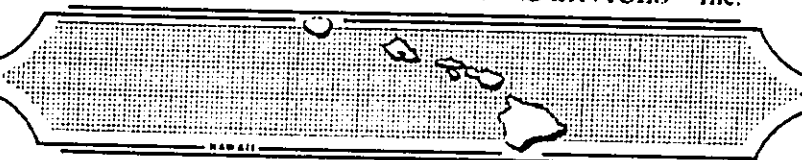
SCS Project -368-1

**ARCHAEOLOGICAL INVENTORY SURVEY
OF A 7.65 ACRE PROPERTY AT LOT 10-H
AHUPUA`A OF HANAKAO`O, DISTRICT OF LAHAINA,
ISLAND OF MAUI, HAWAI`I
[TMK:4-4-06:56]**

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August 2003

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ABSTRACT

At the request of LANDTEC Inc., Scientific Consultant Services (SCS), Inc. conducted an Archaeological Inventory Survey of approximately 7.65 acres of land in Kā'anapali Lot 10-H located in the *ahupua`a* of Hanakao`o , District of Lahaina, Maui Island, Hawai'i [TMK: 4-4-06:56]. The goal of this Archaeological Inventory Survey was to determine the presence or absence of archaeological sites on the property. The survey preceded the construction of 26 single family residences on the parcel.

Systematic pedestrian survey revealed the absence of archaeological sites on the surface of the parcel. Three mechanically excavated trenches revealed the absence of subterranean deposits in tested portions of the parcel. The lack of subsurface cultural deposits is attributed to the extensive disturbances the parcel has undergone during development of the nearby Golf Course and associated utilities and infrastructure. The natural topography has been almost completely altered and fill soils have been redeposited over the parcel. Due to the disturbed nature of the project area no further work is recommended. If during the construction human remains are encountered in subsurface context, all work should be halted and appropriate State Historic Preservation and Burial Sites Program officials should be notified before construction continues.

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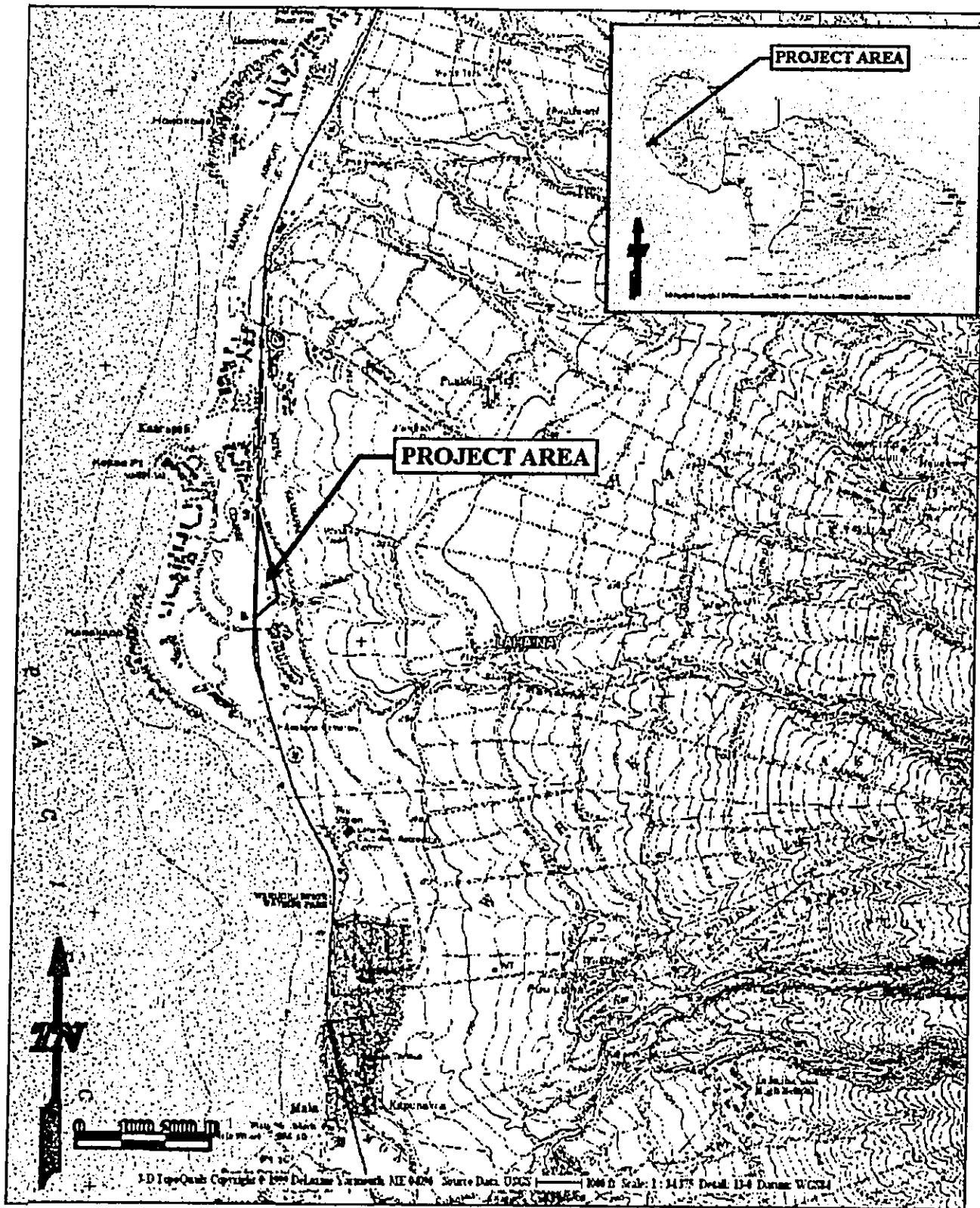


Figure 1: USGS Lahaina Quadrangle Showing Project Area.

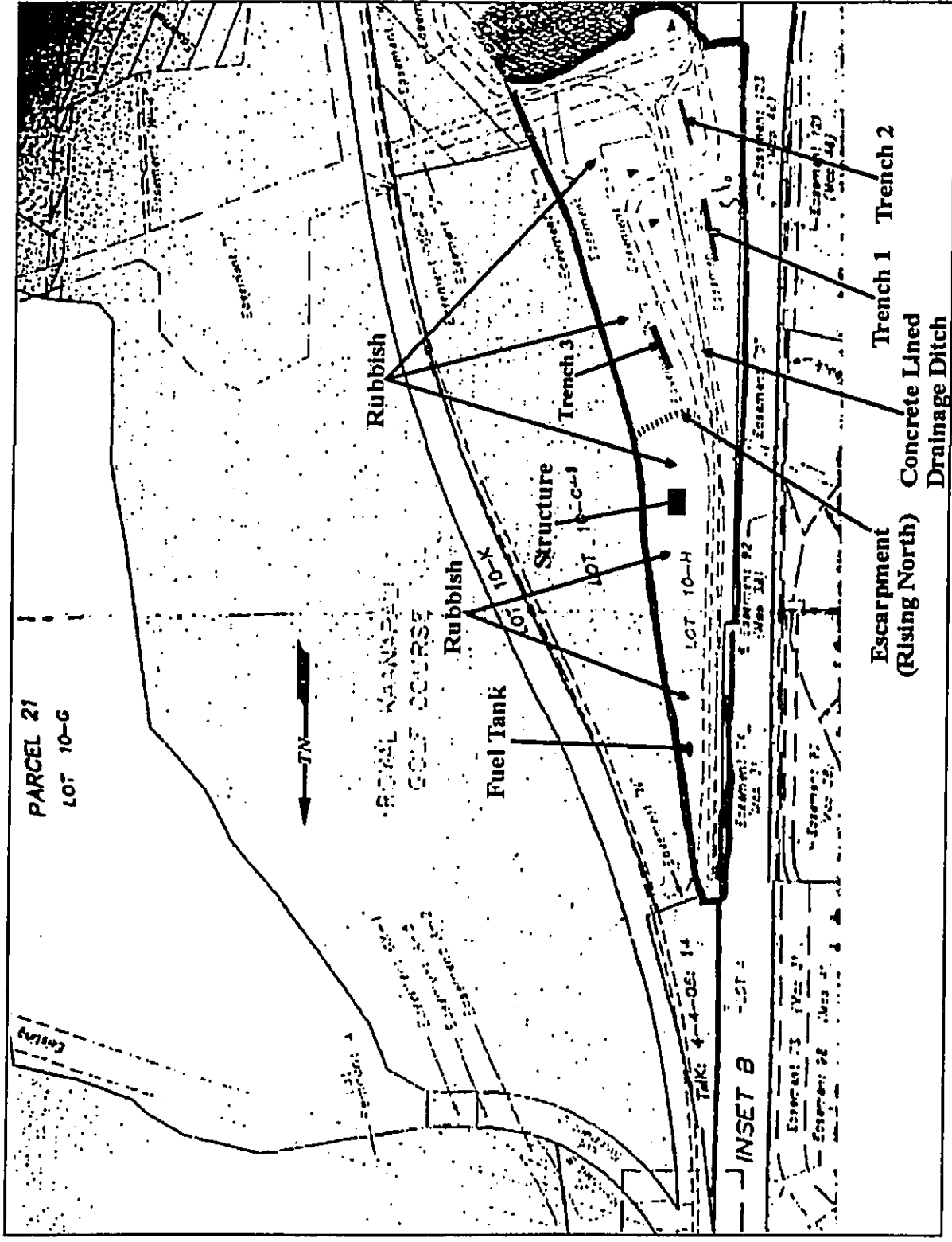


Figure 3: Plan View map of Project Area Showing Stratigraphy Trench (ST) Locations.

RAINFALL, SOILS, AND VEGETATION

The annual rainfall for the coastal region where the project area is located averages 15 inches (Armstrong 1983:56). Soils in the general area fall into the Jaucus Series and the Ewa Series. The Jaucus Series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean (Foote *et al.* 1972:48, Map sheet 93). Ewa silty clay loam (EaA), the primary soil base in the project area, consists of well-drained soils in basins and on alluvial fans. They are developed from alluvium derived from basic igneous rock, the runoff is very slow and erosion is minimal. Jaucus sand (JaC), specific to the project area, is a pale brown to very pale brown; sand more than 60 inches deep. Permeability is rapid, and runoff is slow to very slow. Water erosion is slight, but wind erosion can be a hazard. The surfaces of most of the testing areas were approximately 20 to 40 feet above mean sea level.

The topography of the study parcel has undergone extensive disturbances. According to local testimony, the parcel was bulldozed during the original construction of the golf course. In subsequent years the parcel was used as various support services for the golf course. Portions of the parcel were used as a nursery over the past decade, a small structure used for a sign shop still exists on the property (Figure 4), and large portions of the parcel were used as a dump site for various types of rubbish including mechanical parts, landscaping materials, and cleared vegetation (Figures 5, 6, and 7). The project area is dominated by construction related disturbances and no natural stratigraphy was observed in any of the test trenches. Vegetation in the overall project area where the test trenches were excavated consisted of lantana (*Lantana camara*), panini (*Opuntia ficus-indica*), castor bean (*Ricinus communis*), kiawe (*Prosopis pallida*), and banyon (*Ficus benghalensis*).

TRADITIONAL AND HISTORICAL LAND TENURE

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha'ōhia, during the time of the *ali'i* Kaka'alaneo (Beckwith 1940:383; Fornander places Kaka'alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919-20, Vol. 6:248]). Further land divisions within the *moku* were *ahupua'a*, which ideally incorporated all the natural resources necessary for traditional subsistence strategies. The ancient subdivisions of the *ahupua'a* were said to have been established approximately 500 years ago and have remained relatively unchanged to the present, although land tenure itself has gone through radical changes (Sterling 1998:3).

RECEIVED AS FOLLOWS

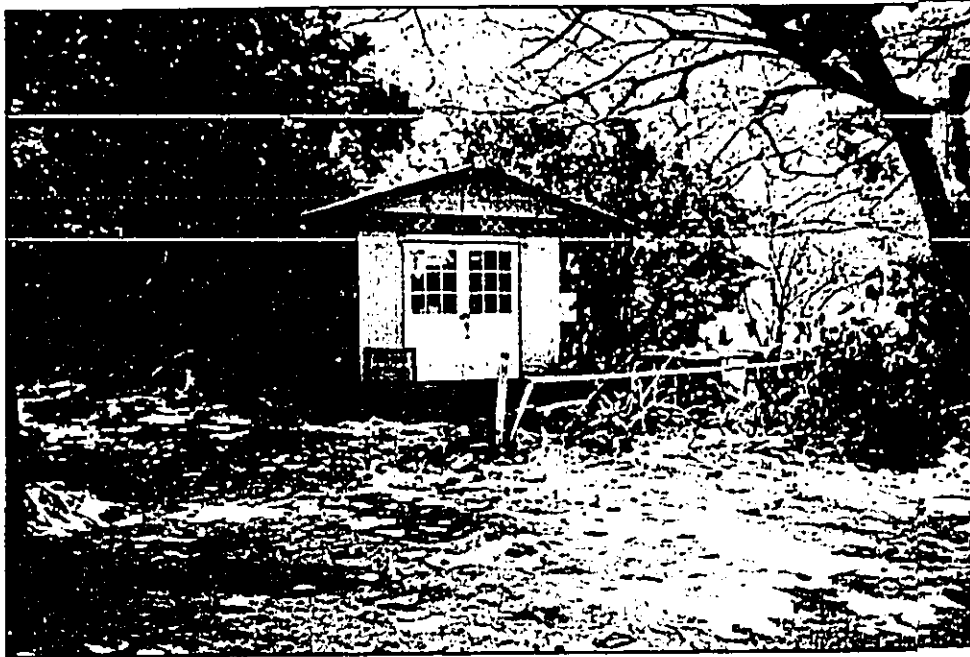


Figure 4: Photograph of Sign Shop in Project Area.



Figure 5: Photograph of Dump Site in the Project Area. View to East.

RECEIVED AS FOLLOWS



Figure 6: Photograph of Dump Site in the Project Area. View to East.



Figure 7: Photograph of Dump Site in the Project Area. View to East.

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. Within the *ahupua`a*, residents were able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111).

During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was a typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch 1985); Kirch and Sahlins 1992, Vol. 1:5, 119.

Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (A.D. 1200-1400, Kirch 1985). Activities were possibly seasonal at first, with three broad environmental zones consisting of the coast, uplands, and intermediate zone dictating a settlement pattern with the majority of habitation on the coast and some in the uplands. As agricultural and irrigation projects expanded, occupation became permanent and intensive irrigation-based farming replaced the seasonal dry land system until a band of agriculture extended along the coast and inland. According to Handy, there was "continuous cultivation on the coastal region along the northwest coast" of Maui. He writes:

On the south side of western Maui the flat coastal plain all the way from Kīhei and Maalaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish. Almost no sweet potatoes are planted in this section now, however, which is partly due to the displacement of Hawaiians by Orientals on the industrialized sugar and pineapple plantations [1940:159].

TRADITIONAL LĀHAINĀ DISTRICT SETTLEMENT PATTERNS

In Hawai`i, much of the economically valuable coastal lands were preferred for chiefly residence. Easily accessible resources such as offshore and onshore fish ponds, the sea with its fishing and surfing—known as the sports of kings, and some of the most extensive wet taro lands were located here (Kirch and Sahlins, 1992 Vol. 1:19). Inland resources necessary for subsistence, could easily be brought to the *ali`i* residence. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch and Sahlins 1992, Vol. 2:59). Lāhainā had the added advantage of a calm roadstead and close proximity to Lāna`i, and Moloka`i (Handy and Handy 1972). Since at least about A.D. 950, the Lāhainā area had been favored by such great chiefs as Hua-a-Pohukaina, Kaka`alaneo, and Kahekili. After the conquest of Maui by Kamehameha I, Lāhainā became the capital of the Hawaiian Kingdom until it moved to Honolulu in 1855.

Most of the *ahupua`a* on the coast have been overshadowed by the famous roadstead and village of Lāhainā. In addition, a high percentage of archaeological sites in the Lāhainā District have been impacted by early historic and modern day agricultural activities. Therefore, little is known about the settlement patterns outside of the city. However, ethnographic and historic literature, often our only link to the past, reveal that the lands around Lāhainā were rich agricultural areas irrigated by aqueducts originating in well-watered valleys with permanent occupation predominately on the coast. Handy and Handy have stated the space cultivated by the natives of Lāhainā at about "...three leagues [9 miles] in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation" (1972:593). Crops cultivated included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and gourds.

Menzies, the naturalist and surgeon on board HMS Discovery during Captain George Vancouver's 1793 tour, made these observations of the Lāhainā coast and village:

[We]...soon entered the verge of the woods where we observed the rugged bands of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer...[Menzies 1920:105].

...to see the village of Lahaina, which we could scattered along shore on a low tract of land that was nearly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regulated

manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation [Menziés 1920:112].

Little had changed twenty-six years later when J. Arago visited Hawaii with Captain Louis de Freycinet in 1819. He recorded:

The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage; ...various sorts of vegetables and plants...amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees...[Arago, cited in Handy and Handy 1972:493]

Rev. C.S. Stewart, a missionary in 1823 assigned to the Lāhainā station, also commented on the attractiveness of his environs:

The settlement is far more beautiful than any place we have yet seen on the Islands. The entire district stretching nearly three miles along the seaside, is covered with luxuriant groves, not only of the cocoanut, the only tree we have before seen except on the tops of the mountains, but also of the breadfruit and the kou...while the banana plant, kappa and sugar-cane are abundant, and extend almost to the beach, on which a fine surf constantly rolls [Taylor 1928:42].

...The breadfruit trees stand as thickly as those of a regularly planted orchard, and beneath them are kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kappa trees, groves of banana, rows of the sugar cane, and bunches of the potato and melon...It scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting streams, which rush from the mountains, by artificial courses, on every plantation. Each farmer has a right, established by custom, to the water every fifth day [Taylor 1928:43].

Scattered amongst the agricultural and habitation sites were other places of cultural significance to the *kama`āina* of the district. At least eight *heiau* were recorded in the vicinity of the village of Lāhainā, fishing *ko`a* were present along the beach and on the slopes above the bays, and petroglyphs were inscribed in many places whose meanings have yet to be fully understood (*Kuokoa*, July 20, 1867; Thrum 1908; Walker 1930:103). Pearl shell was gathered from Makaiwa Beach for the eyes of the *ki`i*, and battles were fought along the coast (Sterling 1998:45). Close to the project area is Pu`u Keka`a, famous as the birthplace of the sons of chiefs and long associated with ghosts, strange occurrences, and the skeletons of defeated invaders

(Fornander 1918-19 Vol. 5:542). According to legend, the lands surrounding Pu`u Keka`a were once an area of intense cultivation, and the capital and home of the Maui chief, Kaka`alanea, when he ruled West Maui. Pu`u Keka`a was reportedly a *leina a ka`uhane*, or soul's leap. Clark has written:

... When a person lay on his deathbed, his soul would leave his body and wander about. If all earthly obligations had been fulfilled, the soul found its way to Pu`u Keka`a. There it was taken by minor gods and at that moment of physical death came to the individual's body. Every island had at least one if not several locations designated as a *leina a ka`uhane* [1989:61].

Kamakau relates the following information on burial practices in the area.

Waiuli...is a deep pit where the corpses of the common people were thrown...It is directly mauka of Honokohau, Honolulu, and Honokahua, and for those from Lāhainā to Kahakuloa, it was the common burial place. The body of anyone from those places who had died on Molokai was brought back to that place [Kamakau 1964:39].

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame`eleihiwa 1992:169-70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I:145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, `okipū, stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). The entire *ahupua`a* of Hanaka`ō`ō (LCA 7715) was awarded to Lot Kamehameha (Kamehameha V). Kā`anapali is the name of an ancient *kalana* that was obliterated by the Hawaiian Legislature in 1859 by combining its lands in a new Lāhainā district (Clark 1989:60-61). There were no LCAs in the vicinity of the present project.

HISTORIC LAND USE

Long the port of choice, the demise of the whaling industry and the change in Capitol of the Hawaiian Kingdom to Honolulu, left a void in Lāhainā where commercial endeavors had succeeded the traditional economy. By the mid-1800s the Kā'anapali area was being converted to sugar cane. As early as 1849, Judge A.W. Parsons operated a sugar mill in Lāhainā. Henry Dickenson began a sugar plantation in 1859 that was quickly followed by the Pioneer Mill Co. By 1883, Pioneer Mill Co. had assets in excess of \$50,000,000 (Simpich 1974). Pioneer Mill's railroad extended from the center of Lāhainā Village to a point north of the town of Pu'ukoli'i in Hanaka'ō'ō and was as close as 350 ft amsl at its northern end (Condé 1975). Pioneer Mill Co. reorganized in 1900 at which time its cane fields were located along the coast for 10 miles with some areas extending back as far as two and one half miles:

The bulk of the crop is raised on lands that range from 10 feet to 700 feet elevation above sea level; the highest being cultivated at 1500 feet [Condé and Best 1973:254].

Sugar would be processed and bagged at the mill in Lāhainā and then taken by train to the landing at Pu'u Keka'a (Black Rock). Other buildings had been constructed there to aid in the plantations activities, such as oil and molasses tanks, as well as a pavilion and some beach cottages on the beach for the use of Pioneer Mill Company's personnel (Clark 1989:61). To add to the enjoyment, a quarter-mile track had been constructed on the tidal flats behind Hanaka'ō'ō for horse racing on holidays. The Kā'anapali Landing was abandoned before WW II and by 1957 plans were in motion for a multi-million dollar resort to be built around Pu'u Keka'a. The shift to tourism in the 1950s sent the plantations into decline, however, the development of golf courses, hotels, condominiums, and shops have continued the popularity of the Kā'anapali region up to and including the present.

PREVIOUS ARCHAEOLOGICAL RESEARCH

Early archaeological studies recorded *heiau* and other religious features (Thrum 1908, 1916, 1917; Walker 1930) but it wasn't until the 1970s and 80s with the increase in urbanization and resort development that archaeological research accelerated in West Maui. Surveys were conducted in Hahakea and Kahoma Gulches resulting in the identification of a petroglyph complex, rock shelters, terraces, and a possible *'auwai* (Hommon 1982:19-20; Barrera 1989:9). Although much traditional agriculture was recorded for West Maui in conjunction with marine activities, the impact of cultivating historic cane and pineapple has greatly disturbed the archaeological record. Some remains are still evident inland within gulches where the cane did not reach. Archaeological studies conducted in Hanaka'ō'ō Ahupua'a and in the vicinity of the project area are shown in Figure 8.

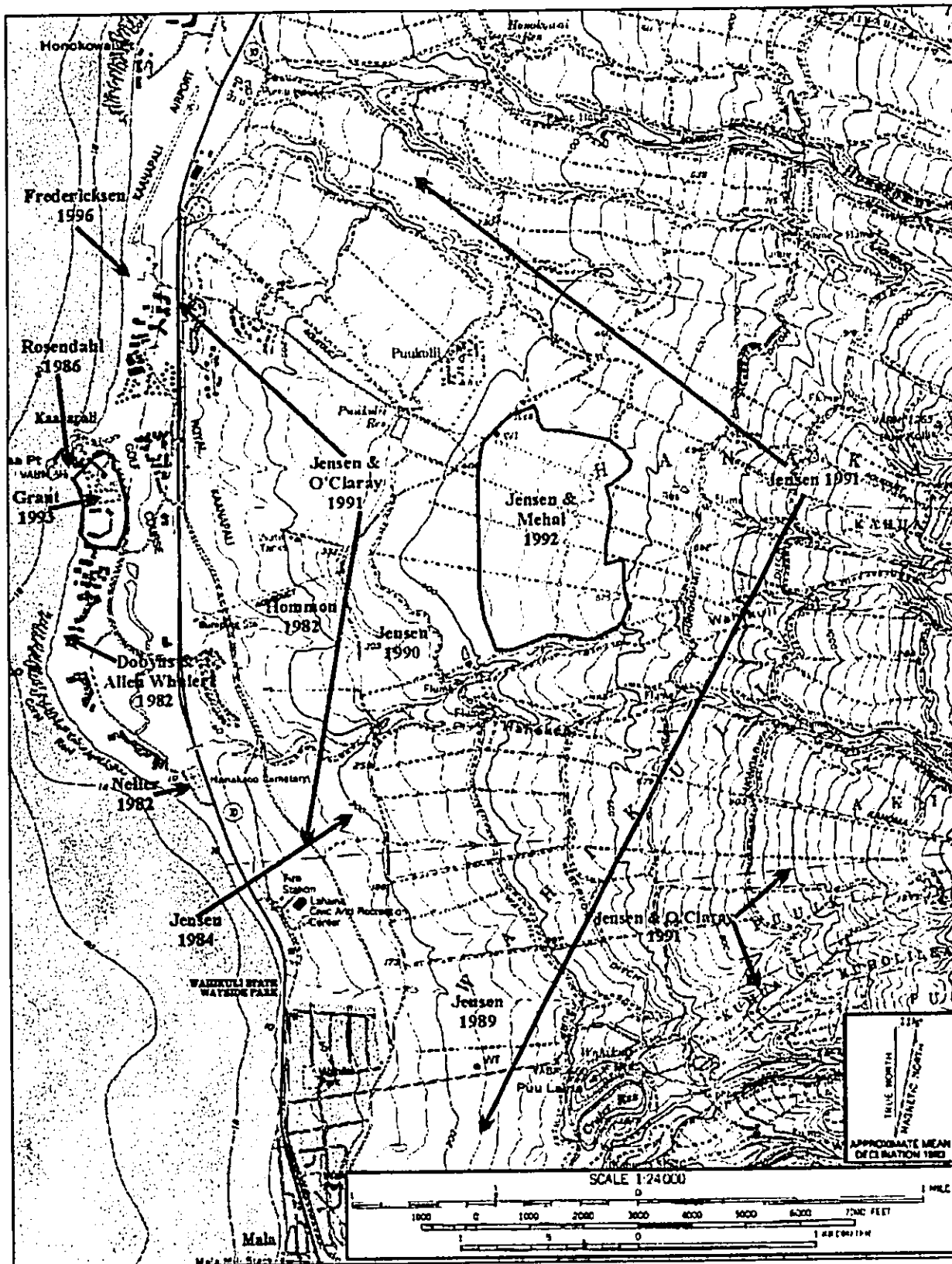


Figure 8: Archaeological Studies Conducted in the Vicinity of the Project Area.

A reconnaissance survey conducted in 1986 on portions of the Sheraton Maui site revealed that all of the project area had been fully developed, leaving only the barren coastal flats and the exposed faces of Pu`u Keka`a (Rosendahl 1986). Monitoring of construction work along the beachfront at the site of the Kā`anapali Alii Condominiums, directly south of the project area, revealed the presence of prehistoric burials and reported that construction crew members who had worked at other projects along the beachfront in Kā`anapali had uncovered burials (Dobyns and Allen-Wheeler 1982). A surface reconnaissance conducted of the Sheraton lands revealed all the project area was fit to be fully developed with only portions of the coastal flats and faces of the old cinder cone free from construction (Rosendahl 1986).

The Hanaka`ō`ō Beach Park (south of the project area), previously known as 'Sand Boxes', was well known before the 1950s for nighttime pole casting for `ulua, awa, papio, and oi`o. Limu (seaweed) was gathered from the coastal area (Neller 1982). Local informants spoke of salt making, but salt pans were not located. The Beach park was used by the Lāhainā Civic Club who had built their *halau wa`a* (canoe shed) on its shores (Neller 1982). A 1982 reconnaissance identified the Hanaka`ō`ō grinding stones (Site 50-03-1204), the Chinese cemetery, and rock crusher ruins as the only sites of historic/archaeological significance on the property. It was recorded that there might have previously been a pre-Contact house site in the area of the Hyatt Regency Hotel because of the identification of traditional artifacts, including a stone adze and a stone *poi* pounder.

An inventory survey of 1,200-acres in North and South Beach resulted in 12 new sites containing 44 component features including single and multiple components, which displayed a range of feature types including overhangs and caves, platforms, walled enclosures, petroglyphs, graves, agricultural terraces, and a single historic agricultural access road alignment (Jensen 1989a). Tentatively identified functional types include habitation, agriculture (prehistoric and historic), ceremonial, probable burial, recreation, and indeterminate.

Re-evaluation and additional recording of earlier work that identified cultural resources along Kahoma stream, in the Land of Wahikuli was conducted in 1989 (Jensen 1989b). A complex of 38 petroglyphs, a rockshelter, terraces, and a possible `auwai were recorded. In addition, one habitation site was identified in Hahakea Gulch, two site complexes were recorded

Within Hanaka`ō`ō Ahupua`a, an inventory survey of approximately 340 inland acres resulted in the identification of nine sites containing 49 component features (Jensen 1990). Functional types included temporary habitation, possible habitation, possible burial, transportation, and prehistoric and contemporary agriculture. Sites identified in Hahakea Gulch

included temporary prehistoric habitation associated with extensive agricultural activities involving both sides of the gulch and agricultural terraces surviving in the steep margins or near the bottom of the two major gulches in areas that were unsuited for pineapple or sugarcane cultivation. Also identified were walled enclosures, habitation terraces, a possible burial, possible boundary walls, and a footpath.

An archaeological inventory survey along a seven mile-long corridor (10 *ahupua`a* including Hanaka`ō`ō) extended through lands already extensively developed and intensively impacted by modern agricultural activities (Jensen 1991). However, the corridor passed through several natural drainages and four sites containing 28 component features were identified. Three of the sites had been previously identified. Formal types were terraces, walled enclosures, walls, a trail, and rock mounds. Interpreted functions were habitation, transportation, possible water storage, agriculture, and religious (possible burial). Six more sites were identified outside the area of potential effect. No subsurface testing was conducted.

An archaeological inventory survey for the Lāhainā Bypass Highway project comprised a approximately 5,500 foot long Kā`anapali Connector Road (Jensen 1994). The study included a pedestrian field survey and backhoe trenching. No significant cultural materials were identified, primarily because of the extensive disturbance within the project area. Another archaeological inventory survey of 260 inland acres did not result in the identification of any new sites (Jensen and Mehalchick 1992). An inventory survey was conducted along the lower can haul road, crossing Hanaka`ō`ō Ahupua`a in 1991 (Jensen and OClaray 1991). Approximately 90 percent of the lands had been fully developed for agricultural use, and were planted in sugar cane. No prehistoric or historic archaeological sites were identified within the areas of potential effect for the proposed construction. Six previously unidentified historic-era features relating to sugar cane irrigation were identified.

During a subsurface inventory survey at the Sheraton-Maui, a total of 15 backhoe trenches were excavated in three specified areas to test for possible subsurface cultural deposits (Graves 1993). Stratigraphic deposits within the trenches varied from as few as five layers, to as many as nine layers. Most layers appeared to be introduced fill. No prehistoric subsurface cultural deposits were identified with the project area. A more recent monitoring project for the Sheraton-Maui resulted in nine random finds of human remains, seven primary burials, including casket burials, and remains of grave markers that had been part of a Japanese cemetery previously located on the site (Fredericksen 1996). Oral testimonies indicated that finds of human remains were common during the initial hotel construction in the 1960s as there was a large Japanese cemetery south of Pu`u Keka`a and another cemetery on top of Black Rock (Pu`u

Keka`a). Most recently in 2000, there came to the attention of Melissa Kirkendall, Maui Island representative of State Historic Preservation Division (SHPD), the discovery of a burial (Site 50-50-03-4985) within the grounds of the Maui Marriott Ocean Club. The remains were identified during excavation for a pool in the middle portion of the hotel complex (Kirkendall 2002: personal communication). It is not presently known in what stratigraphic context it was found, whether in fill or sand, as a report has yet to be submitted to the Maui SHPD.

SITE PREDICTIVE MODEL

Based on the archival and archaeological research, the coastal areas around Lāhainā Village would most likely be claimed by the *ali`i* for food production, fishing, and house sites. Important religious structures could possibly be identified and, along with habitation, could consist of terraces, enclosures, platforms, and walls. Burials, although probably not of the *ali`i*, may be identified along with *imu*, midden scatters, and artifacts associated with domestic and fishing activities. Further *mauka*, irrigated agricultural fields extended to the base of the mountains. Occasional habitation complexes were constructed in certain sections of the two main gulches. Trails led to higher elevations where inland resources were available and could be brought to the coast.

METHODOLOGY

Consultation with Dr. Melissa Kirkendall, was conducted prior to fieldwork, and the locations for three backhoe trenches were selected. On 7 July 2003, SCS personnel conducted a 100 percent pedestrian surface survey. No cultural features of a prehistoric or historic nature were observed (Figures 9, 10, and 11). On 8 July 2003, backhoe trenching was conducted by a professional operator at the Lot 10 Ka`anapali site under the supervision of archaeologist John Zachman. Three stratigraphic trenches (ST) were positioned in the southern portion of the project area (see Figure 3). ST-1 (12.00 by 0.70 by 0.90 m) was located in the southern extreme of the parcel; ST-2 (15.00 by 0.70 by 0.90 m) was placed in the grass further north; ST-3 (15.00 by 0.70 by 0.90 m) was located to the north and east of ST-2. Each ST was excavated to approximately 90 centimeters, and as no prehistoric or historic-era sites or cultural deposits were encountered, a one-meter section of each trench was profiled and photographed.

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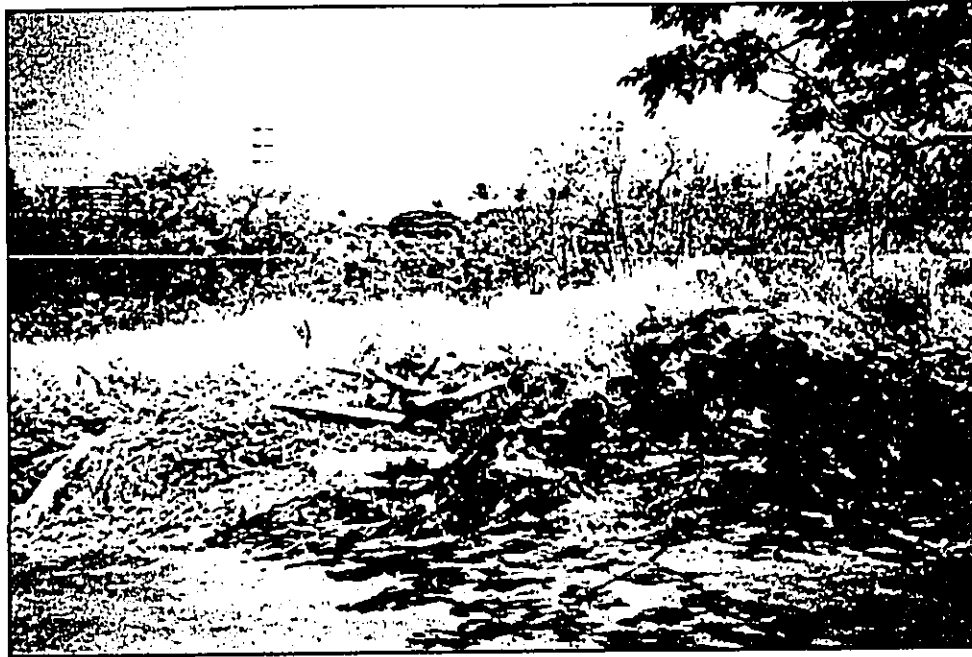


Figure 9: General Project Area Overview, Southern Half of Project Area. View to South.

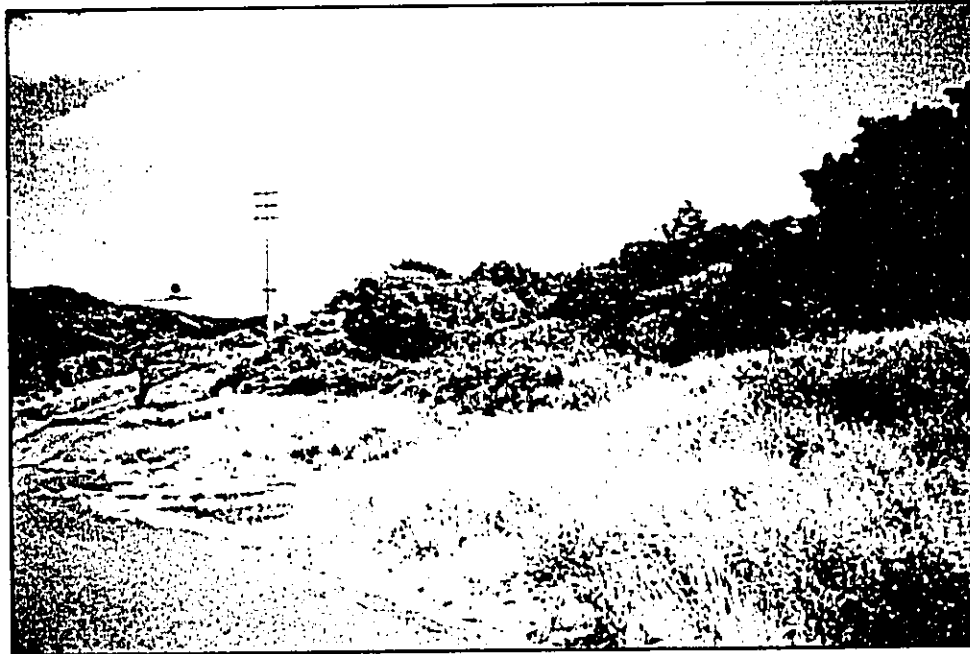


Figure 10: General Project Area Overview, Central Portion of Project Area. View to North.

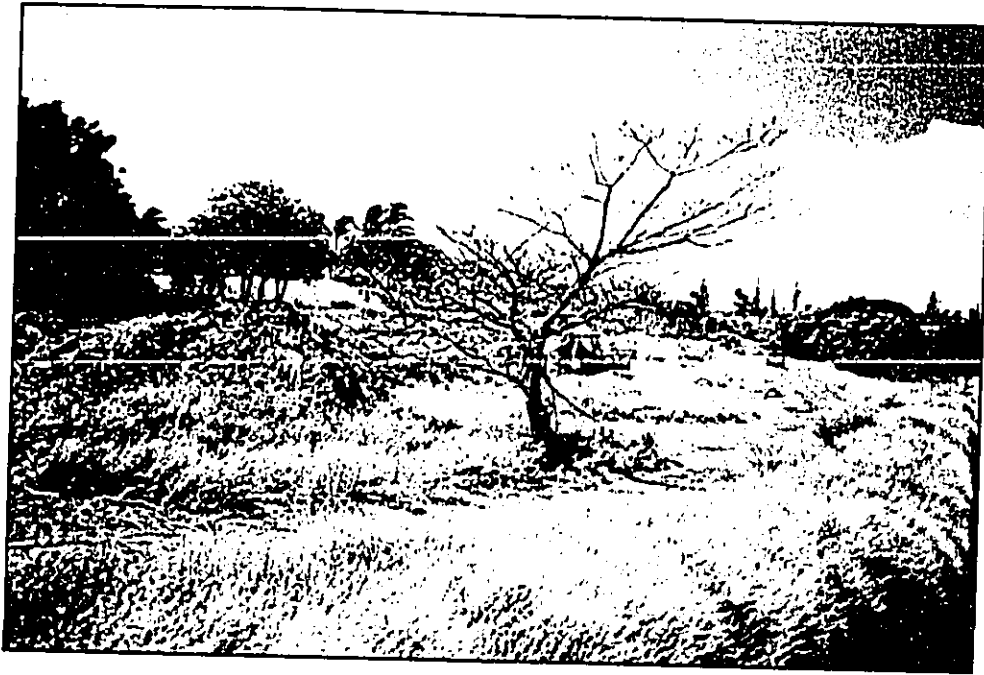


Figure 11: General Project Area Overview, Where Trenching Occurred. View to South.

EXCAVATION RESULTS

Excavation of the three trenches proceeded to depths of approximately 90 centimeters below ground surface. The base of excavation consisted of basal saprolite material. One basic fill layer with modern rubbish was revealed in all three trenches. One piece of plastic tubing was observed at the contact point with bedrock. It was determined that the entire area has undergone extensive bulldozing related to the construction of the adjacent golf course. The lack of natural stratigraphy is attributed to the extensive disturbances that the parcel has undergone. Natural soils in the southern portion of the project have been removed and commingled with fill and rubbish that were redeposited on the parcel. No prehistoric or historic materials were identified in any of the three trenches. Stratigraphic layers were identified in the exposed trenches as follows:

- ST-1: Layer I- 0 to 0.90 cmbs; Disturbed and redeposited fill (Figures 12, 13, and 14)
- ST-2: Layer I- 0 to 0.90 cmbs; Disturbed and redeposited fill (Figures 15, 16, and 17)
- ST-3: Layer I- 0 to 0.90 cmbs; Disturbed and redeposited fill (Figures 18, 19, and 20)

CONCLUSIONS

The present project did not identify any evidence of prehistoric or historic activities within the project area other than filling for original construction of golf course and related infrastructure. Previous archaeological and historical research suggests traditional agriculture on the lands surrounding Lāhainā was supplanted by commercial cane and pineapple cultivation in

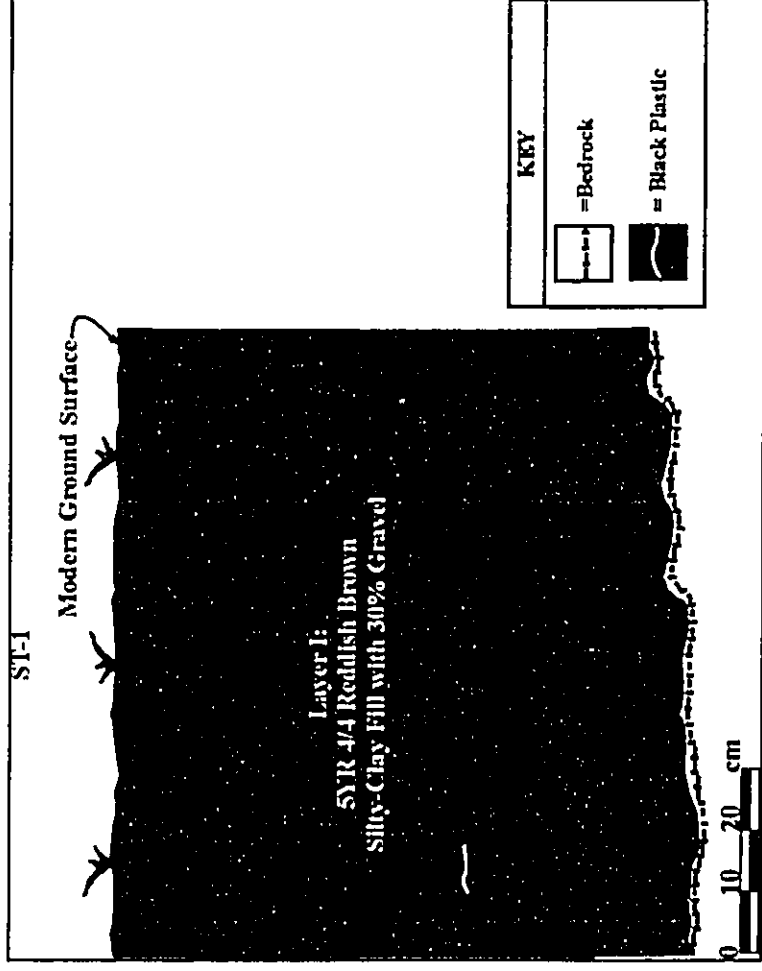


Figure 12: West Wall Profile of ST-1.

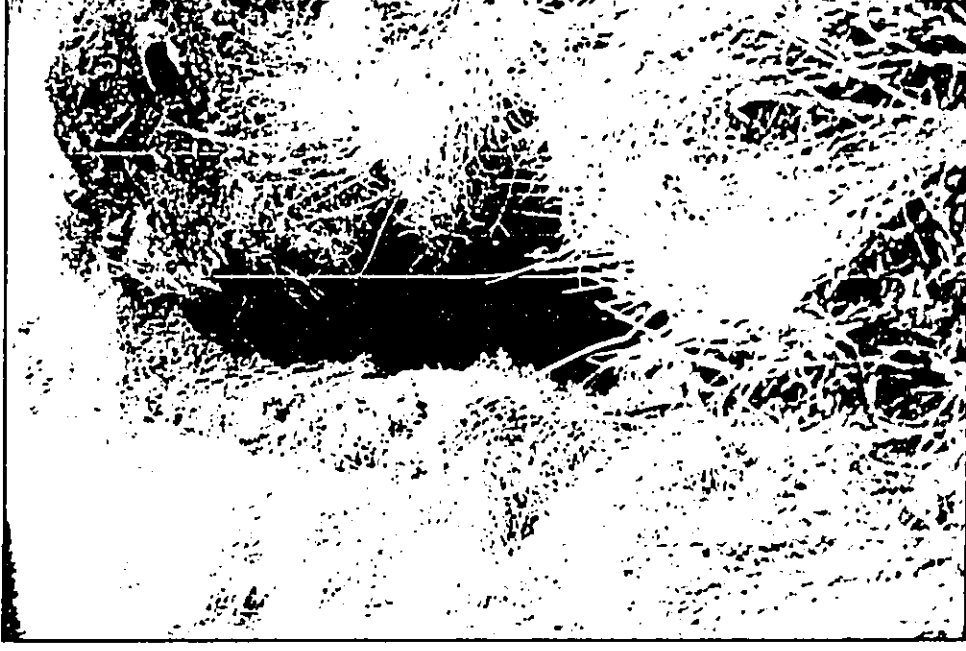


Figure 13: Photograph of ST-1 Post-Excavation.



Figure 14: Photograph of ST-1 West Wall Profile.

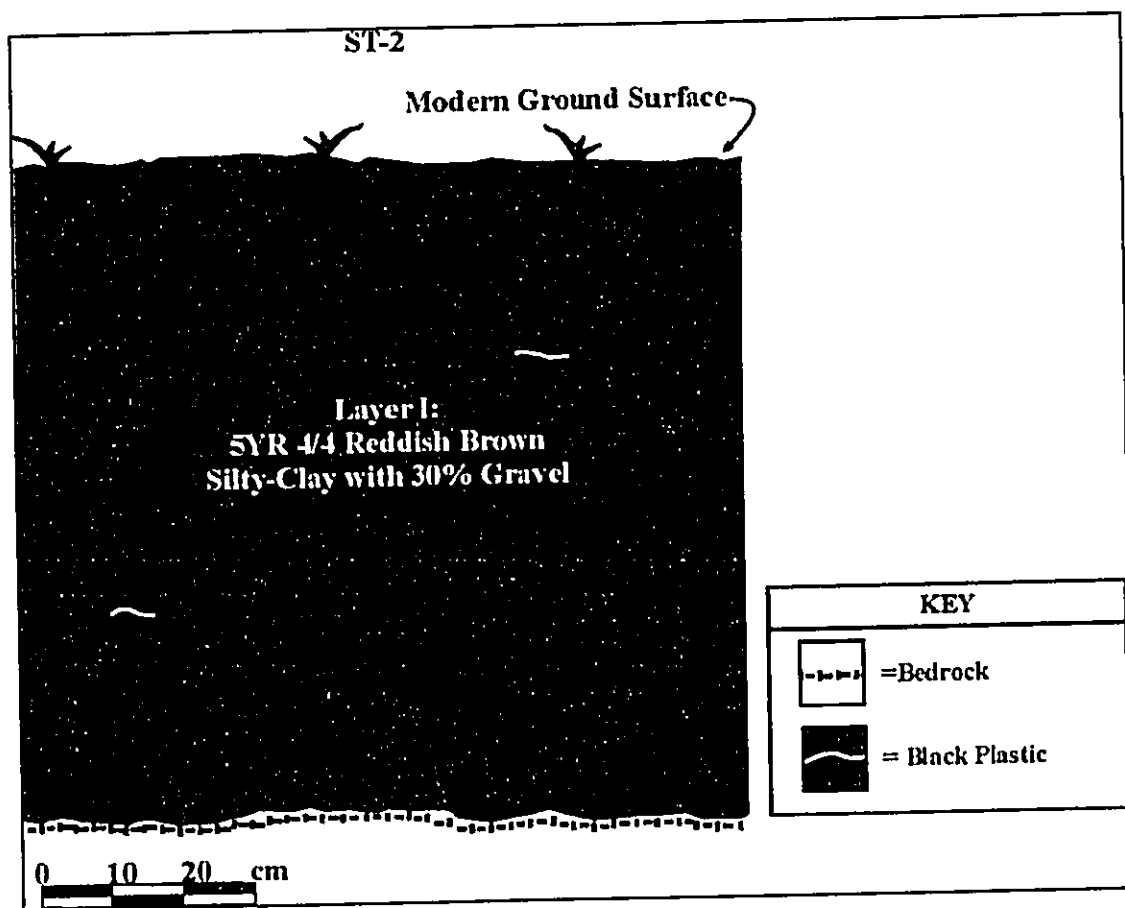


Figure 15: West Wall Profile of ST-2.



Figure 16: Photograph of ST-2 Post-Excavation.



Figure 17: Photograph of ST-2 West Wall Profile.

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Figure 19: Photograph of ST-3 Post-Excavation.

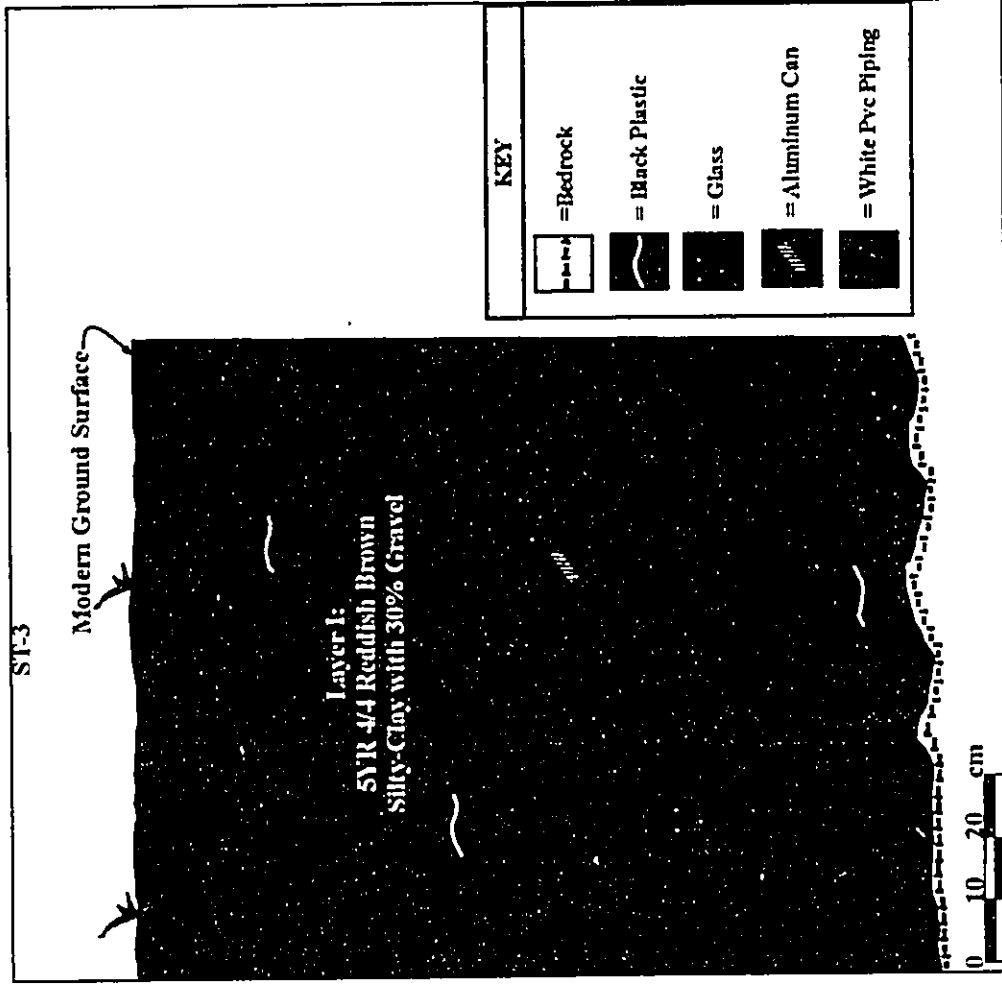


Figure 18: West Wall Profile of ST-3.

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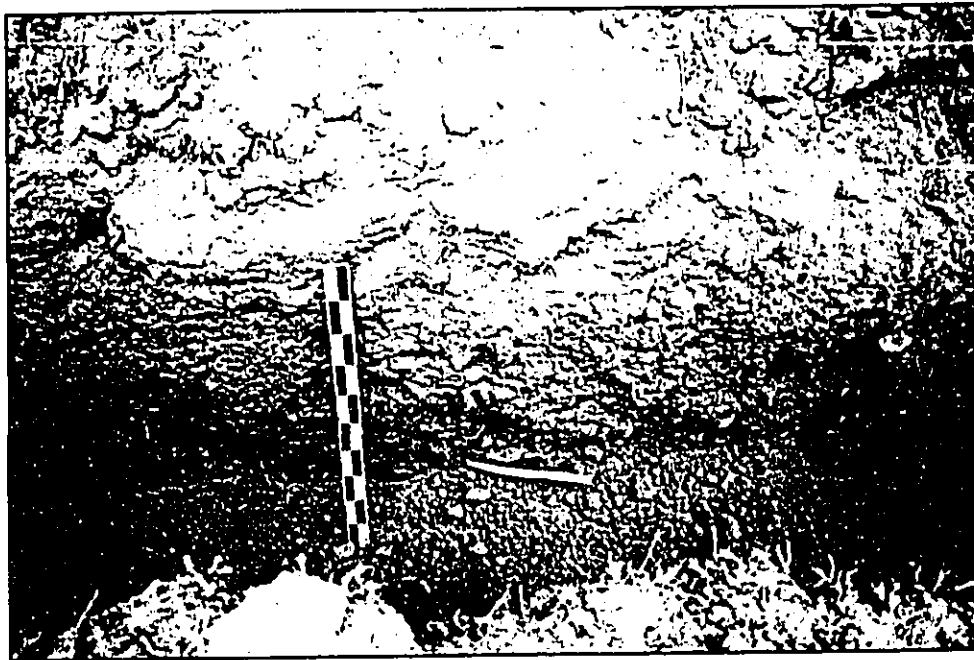


Figure 20: Photograph of ST-3 West Wall Profile.

the mid-1800s. Although the Kā'anapali coastal area was highly prized by the *ali'i* of old, development beginning in the late 1950s has changed the original topography and impacted much of the landscape.

SIGNIFICANCE ASSESSMENT

Based on the testing results that revealed stratigraphy consisting of fill in all three excavated trenches, there is no significance assessment. However, in the event that articulated or disarticulated human remains are discovered during the course of construction, all work should be immediately suspended in the area and SHPD and the Maui Island Burial Council should be immediately notified.

RECOMMENDATIONS

Based on the lack of natural stratigraphy and the resulting negative testing results, no further work is recommended for the parcel.

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APPENDIX J
Cultural Impact Assessment

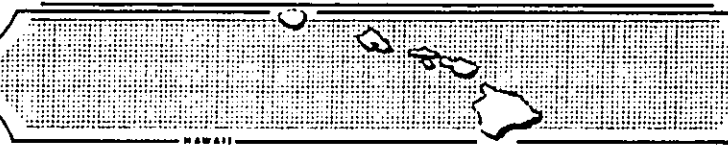
SCS Project 368CIA-1

**A CULTURAL IMPACT ASSESSMENT
ON A PIECE OF PROPERTY LOCATED
IN KA'ANAPALI, HANAKA'Ō'Ō AHUPUA'A,
LAHAINA DISTRICT,
MAUI ISLAND, HAWAII
[TMK: 4-4-06: 56]**

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August 2003

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ABSTRACT

At the request of LANDTEC, Inc., Scientific Consultant Services, Inc. (SCS) conducted a Cultural Impact Assessment, on a piece of property (TMK: 4-4-06: 56) located in Ka'anapali, Hanaka'ō'ō Ahupua'a, Lahaina District, Maui Island. The project area consists of a 7.65-acre parcel where the building of 26 single-family residences with detached *'ohana* units are proposed. This Cultural Impact Assessment is to be included in a Community Plan Amendment and as a part of the Environmental Assessment. Recent archaeological studies on the property reveals that Parcel 56 was previously in sugar cane and most recently was being used as a homeless camp and for an unofficial dump site (Morawski and Dega 2003). SCS consulted with community members and groups, including the Office of Hawaiian Affairs, Maui/Lāna'i Islands Burial Council, and the Central Maui Hawaiian Civic Club concerning any traditional activities that may have been associated with this land parcel. None were identified. Based on community response, archival research, and the results of previous archaeological investigations within the project area, it is reasonable to conclude that, (pursuant to Act 50), the exercise of native Hawaiian rights related to gathering, access, or other customary activities will not be affected and that there will be no adverse effect upon any ethnic practices or beliefs due to construction on Parcel 56.

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Figure 3: Tax Map Key [TMK] 4-4-06 Showing Project Area..... 6

INTRODUCTION

At the request of LANDTEC, Inc., Scientific Consultant Services, Inc. (SCS) conducted a Cultural Impact Assessment, on a piece of property (TMK: 4-4-06:56) located in Ka'anapali, Hanaka'o'o Ahupua'a, Lahaina District, Maui Island (Figure 1). The project area consists of a 7.65-acre parcel where the building of 26 single-family residences with detached *ohana* units are proposed (Figure 2). This Cultural Impact Assessment is to be included in a Community Plan Amendment and as a part of the Environmental Assessment. Recent archaeological studies on the property reveals that Parcel 56 was previously in sugar cane and most recently was being used as a homeless camp and for an unofficial dump site (Morawski and Dega 2003).

A Cultural Impact Assessment involves evaluating the probability of negative impact on cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* established by the Hawaii State Office of Environmental Quality Control (OEQC, 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs...The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs.

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights...[H.B. NO. 2895]

The purpose of Act 50 is to require that Environmental Impact Statements include an assessment of any impact on the cultural practices of the community and state. It also amends the definition of 'significant effect' to include adverse effects on cultural practices. Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Impact Statement and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua'a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice. The discussion resulted in the following workable definition for cultural practices:

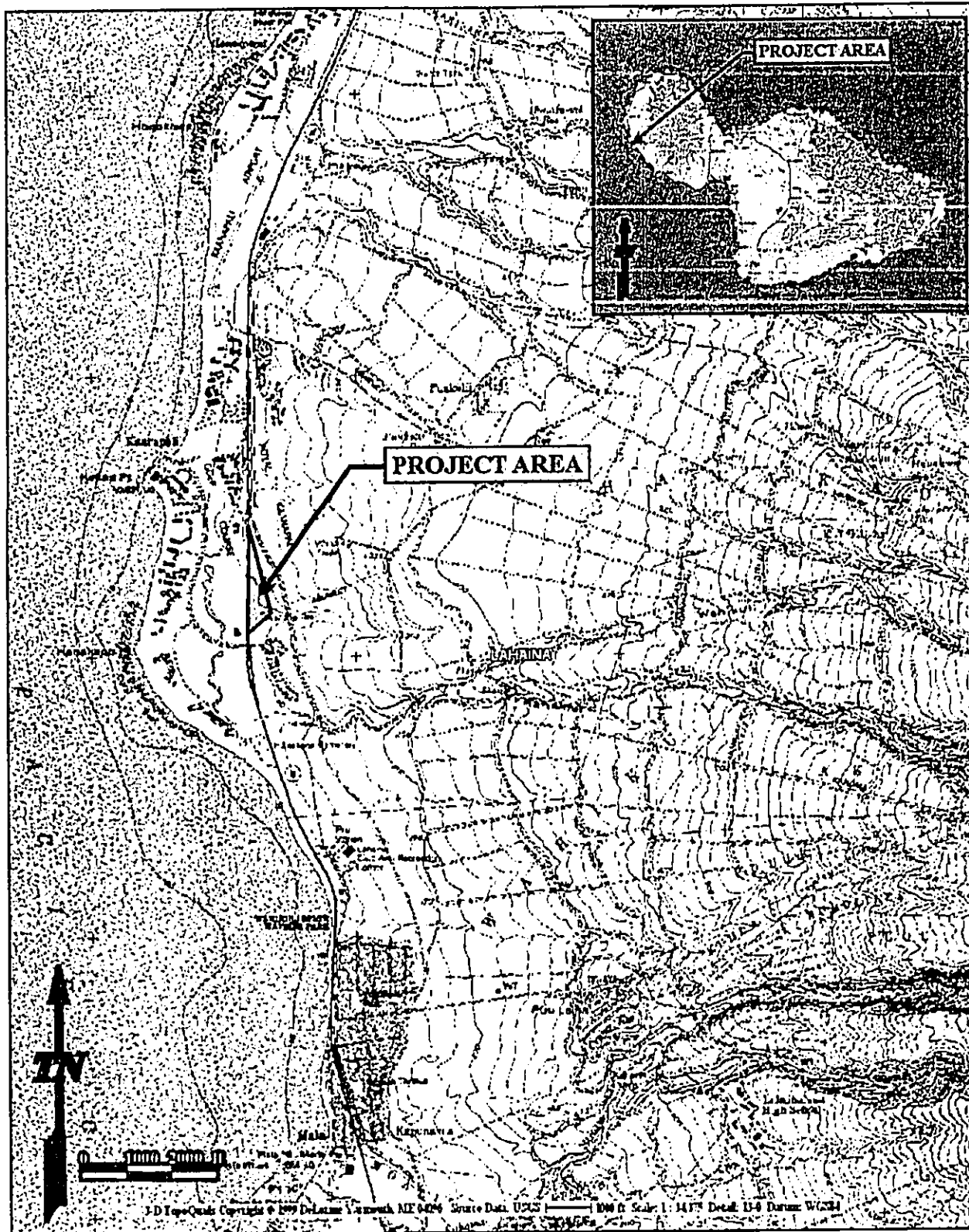


Figure 1: USGS Lahaina Quadrangle Showing Project Area.

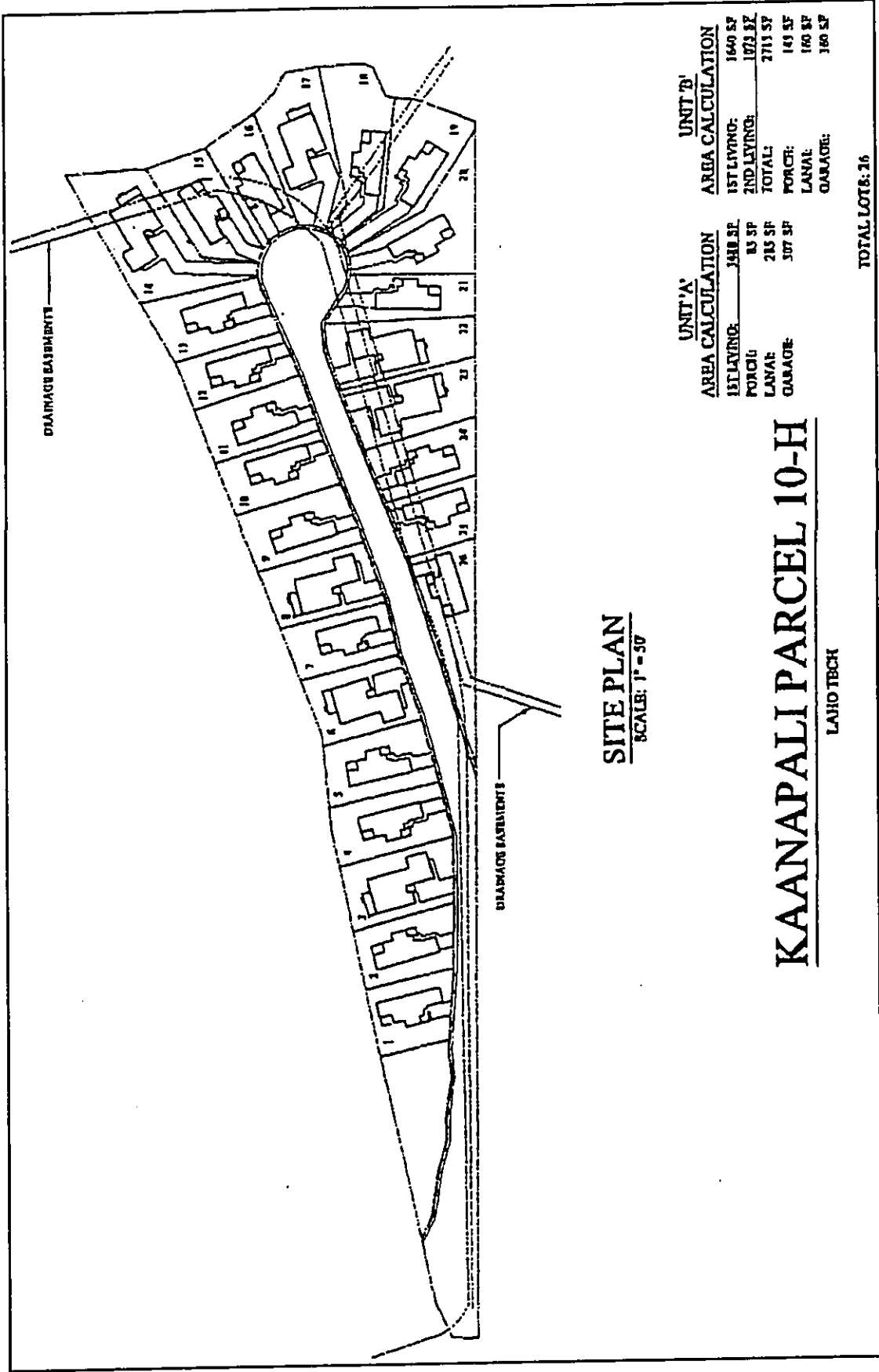


Figure 2: Plan View Map of Project Area.

- (1) A traditional cultural practice that is being conducted [at present]...and
- (2) Traditional, beliefs, practices, life-ways, societal, history of a community and its traditions, arts, crafts, music, and related social institutions [Act 50, Cultural Impact Assessment 2001].

It was also concluded that a proposed action that may not physically alter gathering practices, but affect access to gathering areas would be included in the investigation (State of Hawaii 1997).

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the *Guidelines for Assessing Cultural Impacts*. It includes examining cultural practices and beliefs within the broad geographical area of *ahupua`a* (OEQC 1997). This report contains archival and documentary research, as well as consultation with individuals or organizations with knowledge of the project area, its cultural resources, and its practices and beliefs. Based on this research, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

CONSULTATION

Individuals and/or groups having knowledge of traditional practices and beliefs associated with a project area or knowing of historical properties within a project area were sought for consultation. Individuals who had particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area were invited to share their relevant information. Initial contact was made with OHA, Maui/Lāna`i Islands Burial Council, Central Maui Hawaiian Civic Club, and Dana Naone Hall of the Maui Burial Council. Other agencies contacted by phone or letter included cultural practitioners and culturally knowledgeable residents on Maui.

PROJECT AREA AND VICINITY

The project area encompasses 7.65 acres in Ka'anapali resort area on the west coast of Pu'u Kukui, Maui Island. It is bounded by the Royal Ka'anapali Golf Course to the east, and Honoapi'ilani Highway to the west (Figure 3).

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. Pu'u Kukui, forming the west end of the island (1,215m above mean sea level), is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The deep valleys of West Maui and their associated coastal regions have been witness to many battles in ancient times and were coveted productive landscapes.

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha'ōhia, during the time of the *ali'i* Kaka'alaneo (Beckwith 1940:383; Fornander places Kaka'alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919-20, Vol. 6:248]). Land was considered the property of the king or *ali'i ai moku* (the *ali'i* who eats the island/district), which he held in trust for the gods. The title of *ali'i ai moku* ensured rights and responsibilities pertaining to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka'āinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua'a*, *'ili* or *'ili'āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua'a*) which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua'a* were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua'a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *'ili'āina* or *'ili* were smaller land divisions next to importance to the *ahupua'a* and were administered by the chief who controlled the *ahupua'a* in which it was located (*ibid*:33; Lucas 1995:40). The *mo'o'āina* were narrow strips of land within an *'ili*. The land holding of a tenant or *hoa'āina* residing in a *ahupua'a* was called a *kuleana* (Lucas 1995:61). The project area is located in the

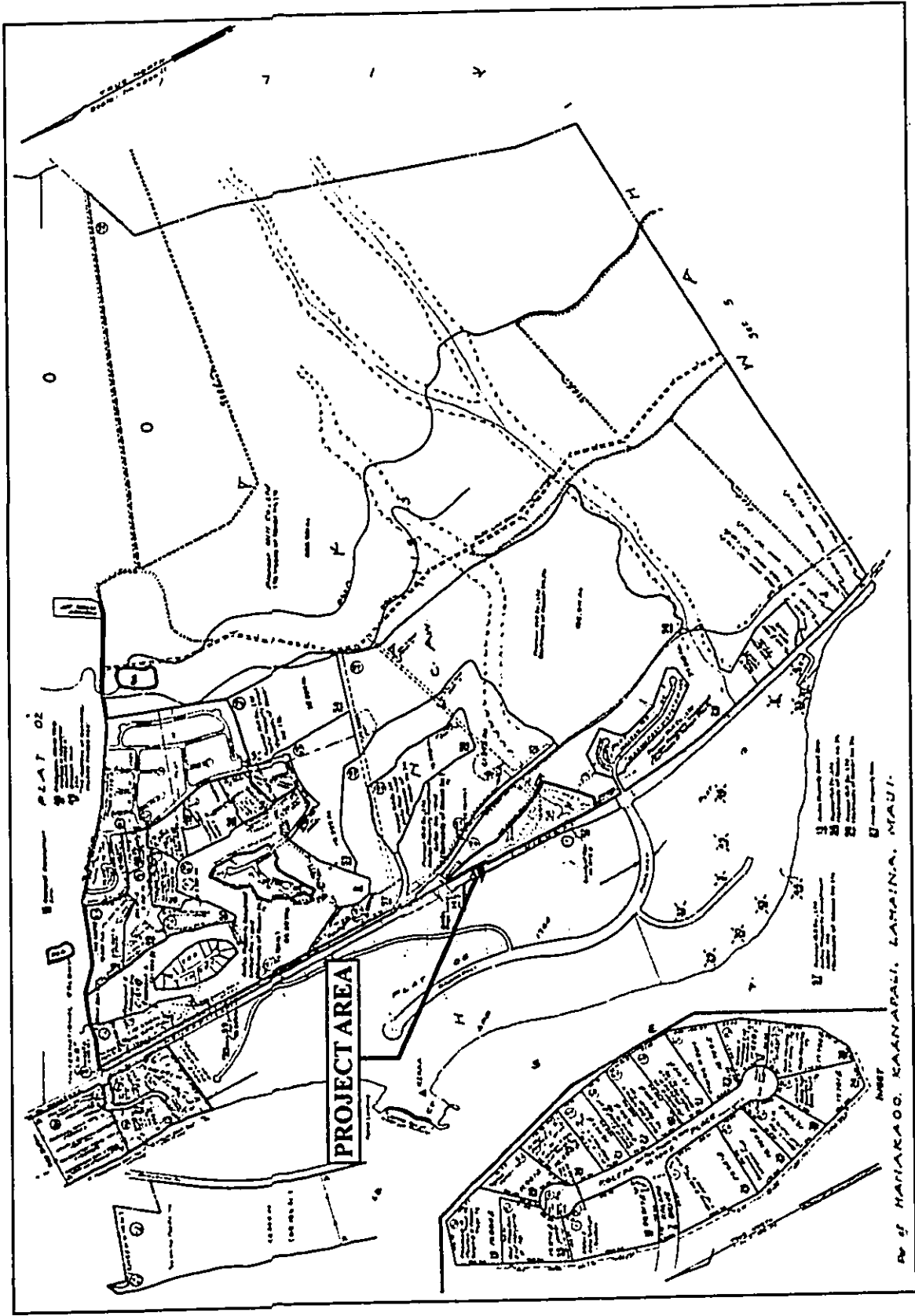


Figure 3: Tax Map Key [TMK} 4-4-06 Showing Project Area.

ahupua`a of Hanakaō`ō, which translated means literally “the digging stick bay” and perhaps refers to the gardens known in the area (Pukui *et al.*:74).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (AD 1200-1400, Kirch 1985).

WAHI PANI (LEGENDARY PLACES)

Scattered amongst the agricultural and habitation sites were other places of cultural significance to the *kama`āina* of the district. At least eight *heiau* were recorded in the vicinity of the ancient village of Lāhainā, fishing *ko`a* (shrine) were present along the beach and on the slopes above the bays, and petroglyphs were inscribed in many places whose meanings have yet to be fully understood (Thrum 1908, 1916, 1917; Walker 1930:103). Pearl shell was gathered from Makaiwa Beach for the eyes of the *ki`i* (image, picture) and battles were fought along the coast (Sterling 1998:45). A portion of the paved trail built by Kihapi`ilani, son of the great chief Pi`ilani, was identified along the Kā`anapali coast (Sterling 1998).

Makai of the project area is Pu`u Keka`a, made famous by being the birthplace of the sons of chiefs and long associated with ghosts, strange occurrences, and the skeletons of defeated invaders (Fornander 1918-19, Vol. 5:542). In Fornander, S. Kaha stated:

Concerning the great amount of human bones at this place. On account of the great number of people at this place there are numerous skeletons [This was the vicinity of several bloody battles], as if thousands of people died there; it is there that the Lahainaluna students go to get skeletons for them when they are studying anatomy. The bones are plentiful there; they completely cover the sand.

This is a ghostly place. Some time a number of people came from Kaanapali (from the other side) going to Lahaina in the dark. When they

came to Kekaa stones rolled down from the top of the hill without any cause. Listening to it, it seemed as if the hill was tumbling down; the people going along were startled and they explained, Kekaa is ghostly! Kekaa is ghostly!" Certainly this is a strange thing for this hill to do [*ibid*].

It was also believed that Pu`u Ka`a was a *leina a ka`uhane*, or soul's leap similar to O`ahu's Ka`ena Point. Naha says:

It is said that when a person dies his spirit journeys to Kekaa; if he has a friend there who had previously died, that one would drive it away when the spirit is nearing Kekaa. Sometimes the spirit of a person would return and re-enter the body, and cause it to come to life again; that is what happened too those who are living again. Many souls came to this place Kekaa. It is called the *Leina-a-ka-uhane*, the leaping place of the soul... [*ibid*].

According to legend, the lands surrounding Pu`u Keka`a were once areas of intense cultivation and the capital and home of the Maui chief, Kaka`alaneo, when he ruled West Maui. Kaka`alaneo lived on the *pu`u* with his wife, a chiefess from Moloka`i. His possessions included fishponds in Hana and a famous breadfruit grove he planted outside of Lāhainā (Handy and Handy 1972). His son, Ka`ulula`au, became famous for traveling around Lāna`i fighting ghosts (Sterling 1998). Maui, the demi-god himself, was associated with the hill:

...At Kekaa lived Maui and Moemoe...The great desire of one [Moemoe] was to sleep. The other [Maui] desired to travel. When Moemoe slept, Maui was traveling, each according to his taste...[Moemoe] made up his mind...to search for his friend, Maui. A road on the northeast side of Kekaa was named after one of these men; it is called "Ke alanui kikeekee a Maui"-the zig zag pathway of Maui" [Fornander 1918-19, Vol. 5:540-544]

Another story concerning Pu`u Keka`a was related in "Tales from the Temples" (Thrum 1909). According to Thrum, Wahine-o-Manu`a was badly treated by her husband. She ran away to the temple of Haluluko`ako`a in the *ahupua`a* of Wahikuli. An owl-god guided her from the *heiau, mauka* of Pu`u Keka`a where she rested before escaping. The stone by which she rested is even today called Pōhaku-o-Wahine-o-Manu`a (the stone of the woman of Manu`a).

Kamakau records a burial site used by the *maka`āinana* of the district:

Waiuli...is a deep pit where the corpses of the common people were thrown...It is directly mauka of Honokohau, Honolulu, and Honokahua, and for those from Lahaina to Kahakuloa, it was the common burial place. The body of anyone from those places who had died on Molokai was brought back to that place [Kamakau 1964:39]

LĀHAINĀ DISTRICT SETTLEMENT PATTERNS

In Hawai`i, much of the coastal lands were preferred for chiefly residence. Easily accessible resources such as offshore and onshore fish ponds, the sea with its fishing and surfing—known as the sports of kings, and some of the most extensive and fertile wet taro lands were located here (Kirch and Sahlins, 1992 Vol. 1:19). Inland resources necessary for subsistence, could easily be brought to the *ali`i* residences on the coast from nearby inland plantations. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch and Sahlins 1992, Vol. 2:59). Lāhainā had the added advantage of a calm roadstead and close proximity to Lāna`i, and Moloka`i (Handy and Handy 1972).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or “King’s trail” built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena. After the conquest of Maui by Kamehameha I, Lāhainā became the capital of the Hawaiian Kingdom until it moved to Honolulu in 1855.

Most of the *ahupua`a* on the coast have been overshadowed by the famous roadstead and village of Lāhainā. In addition, a high percentage of archaeological sites in the Lahaina District have been impacted by early historic and modern day agricultural activities. Therefore, little is known about the settlement patterns outside of the city. However, ethnographic and historic literature, often our only link to the past, reveal that the lands around Lāhainā were rich agricultural areas irrigated by aqueducts originating in well-watered valleys with permanent occupation predominately on the coast. Handy and Handy have stated the space cultivated by the natives of Lāhainā at about “...three leagues [9 miles] in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation” (1972:593). Crops cultivated included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and gourds.

Menzies, the naturalist and surgeon on board HMS Discovery during Captain George Vancouver's 1793 tour, made these observations of the Lāhainā coast and village:

[We]...soon entered the verge of the woods where we observed the rugged bands of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer...[Menzies 1920:105].

...to see the village of Lahaina, which we could scattered along shore on a low tract of land that was nearly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regulated manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation [Menzies 1920:112].

Little had changed twenty-six years later when J. Arago visited Hawai'i with Captain Louis de Freycinet in 1819. He recorded:

The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage...various sorts of vegetables and plants...amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees...[Arago cited in Handy and Handy 1972:493].

Rev. C.S. Stewart, a missionary in 1823 assigned to the Lāhainā station, also commented on the attractiveness of his environs:

The settlement is far more beautiful than any place we have yet seen on the Islands. The entire district stretching nearly three miles along the seaside, is covered with luxuriant groves, not only of the cocoanut, the only tree we have before seen except on the tops of the mountains, but also of the breadfruit and the kou...while the banana plant, kappa and sugar-cane are abundant, and extend almost to the beach, on which a fine surf constantly rolls [Taylor 1928:42].

...The breadfruit trees stand as thickly as those of a regularly planted orchard, and beneath them are kalo patches and fishponds, 20 Or 30 yards square, filled with stagnant water, and interspersed with kappa trees, groves of banana, rows of the sugar cane, and bunches of the potato and melon...It scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting streams, which rush from the mountains, by artificial courses, on every plantation. Each farmer has a right, established by custom, to the water every fifth day [Taylor 1928:43].

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame'eleihiwa 1992:169-70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I:145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame'eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). The entire *ahupua`a* of Hanaka`ō`ō (LCA 7715) was awarded to Lot Kamehameha (Kamehameha V). Kā`anapali is the name of an ancient *kalana* that was obliterated by the Hawaiian Legislature in 1859 by combining its lands in a new Lahaina District (Clark 1989:60-61). There were no LCAs in the vicinity of the present project area.

HISTORIC LAND USE

Lāhainā, long the port of choice and where commercial endeavors had succeeded the traditional economy, suffered with the demise of the whaling industry and the change in Capitol of the Hawaiian Kingdom to Honolulu. By the mid-1800s the Kā`anapali area was being converted from traditional agriculture to commercial sugar cane. As early as 1849, Judge A.W. Parsons operated a sugar mill in Lāhainā. Henry Dickenson began a sugar plantation in 1859 that was quickly followed by the Pioneer Mill Co. By 1883, Pioneer Mill Co. had assets in excess of \$50,000,000 (Simpich 1974). Pioneer Mill's railroad extended from the center of Lāhainā Village to a point north of the town of Pu`ukoli`i in Hanaka`ō`ō and was as close as 350 ft amsl at its northern end (Condé 1975). Pioneer Mill Co. reorganized in 1900 at which time its cane fields were located along the coast for 10 miles with some areas extending back as far as two and one half miles:

The bulk of the crop is raised on lands that range from 10 feet to 700 feet elevation above sea level; the highest being cultivated at 1500 feet [Condé and Best 1973:254].

Sugar would be processed and bagged at the mill in Lāhainā and then taken by train to the landing at Pu`u Keka`a (Black Rock). Other buildings had been constructed there to aid in the plantations activities, such as oil and molasses tanks, as well as a pavilion and some beach cottages on the beach for the use of Pioneer Mill Company's personnel (Clark 1989:61). To add to the enjoyment, a quarter-mile track had been constructed on the tidal flats behind Hanaka`ō`ō for horse racing on holidays. The Kā`anapali Landing was abandoned before WW II and by 1957 plans were in motion for a multi-million dollar resort to be built around Pu`u Keka`a. The shift to tourism in the 1950s sent the plantations into decline, however, the development of golf courses, hotels, condominiums, and shops have continued the popularity of the Kā`anapali region up to and including the present.

CULTURAL ASSESSMEMNT

Individuals and organizations, including OHA, Maui/Lāna`i Islands Burial Council, Central Maui Hawaiian Civic Club, and Dana Naone Hall of the Maui Burial Council as well as a Maui Island Cultural Practitioner were contacted by SCS in order to obtain information concerning cultural activities occurring at or in the vicinity of Parcel 56. None of the individuals and/or groups who responded had any cultural information pertaining to the project area.

Based on community response, archival research, and resort development in Kā`anapali region during the recent past, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by construction on Parcel 56. Because there were no activities identified, there are no adverse effects.

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APPENDIX K
Letter from Vuich Environmental Consultants, Inc.



February 24, 2004

Mr. Chris Hart
Chris Hart & Partners, Inc.
Suite 200, 1955 Main Street
Wailuku, HI 96793

Re: Power lines and associated EMF associated with Landtec, Inc.'s Kaanapali development (Parcel 10-H).

Dear Mr. Hart,

This letter addresses the EMF (electric and magnetic fields) question addressed by the Maui Planning Department in the Draft Environmental Assessment for the Kaanapali Parcel 10-H residences located at TMK: 4-4-006:056, Honoapiilani Highway, Kaanapali.

The power lines identified and noted by Vuich Environmental Consultants Inc. (VEC) on the subject property during the Phase I Environmental Site Assessment are not transmission lines but, in fact, are distribution lines. Even though the lines are supported by the larger metal posts, often used for transmission lines, all lines located on the subject site were confirmed by Maui Electric personnel to be distribution lines.

There is a difference in the power handling capacity between the high voltage transmission lines (69 kV) and the distribution lines (12.47 kV) located on the subject site. This significant difference in voltage is not, however, directly related to EMF strength. Electrical current is the critical issue with regard to magnetic field strength. Current can be significant in both transmission and distribution lines.

VEC requested that MECO conduct an EMF survey on the subject site along the length of the power lines. Please find attached a copy of the EMF survey conducted by MECO on February 12, 2004. The electro-magnetic field line readings of the survey ranged from 0.04 mG to 0.24 mG (milligauss units). These measurements were mainly collected from directly under the power lines. According to MECO, and EPA data reviewed by VEC, these readings are relatively low compared to readings taken at power lines with higher currents or from measurements taken in close proximity to household electrical appliances (electric can openers, blenders, toasters, etc.). According to the EPA, "a typical American home has a background magnetic field level (away from any appliances) ranging from 0.5 mG to 4 mG."¹

An effective defense from EMF produced by appliances or power lines is distance. EMF strength diminishes significantly as distance increases. According to the site plan supplied to VEC (attached), it appears that the power lines, for the most part, are located at a distance even further from the proposed residential sites than where the testing was conducted.

Due to the inconclusive scientific investigations regarding EMF, the State of Hawaii Department of Health currently recommends a "prudent avoidance policy" suggesting that reasonable, practical, simple, and relatively inexpensive actions should be considered to reduce exposure. Maximizing the distance from any



Consultants, Inc.

on-site power lines to the residential structures is the most effective way to minimize EMF exposure. According to the E.P.A., "burying power lines underground often does reduce their magnetic fields".¹

Due to the inconclusive evidence regarding EMF and associated health effects, VEC cannot state that the above-noted distribution lines located on the subject property will not have any increased health risks to the future occupants of the proposed residential units. However, as previously noted, the EMF readings collected during the survey were relatively low readings. It should be noted that this survey was at 9:20 a.m. on February 12, 2004. EMF can vary throughout the day as usage increases or decreases.

Please feel free to give me a call if you have any additional questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey Kermodc", is written over a horizontal line.

Jeffrey Kermodc

1. United States E.P.A. EMF in Your Environment. Magnetic Field Measurements of Everyday Electrical Devices. December 1982.

- Enclosed:
1. MECO EMF Survey Report
 2. DOH Policy Letter dated 1994

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



February 13, 2004

RECEIVED FEB 17 2004

Jeffrey Kermode
Vuich Environmental Consultants, Inc.
1498 Lower Main St., Suite C
Wailuku, HI 96793

Dear Mr. Kermode:

Subject: EMF Survey Report

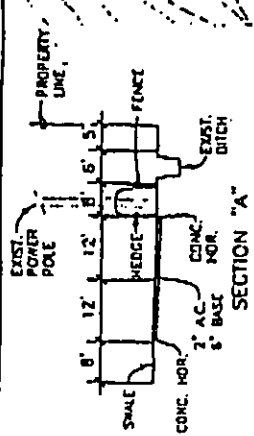
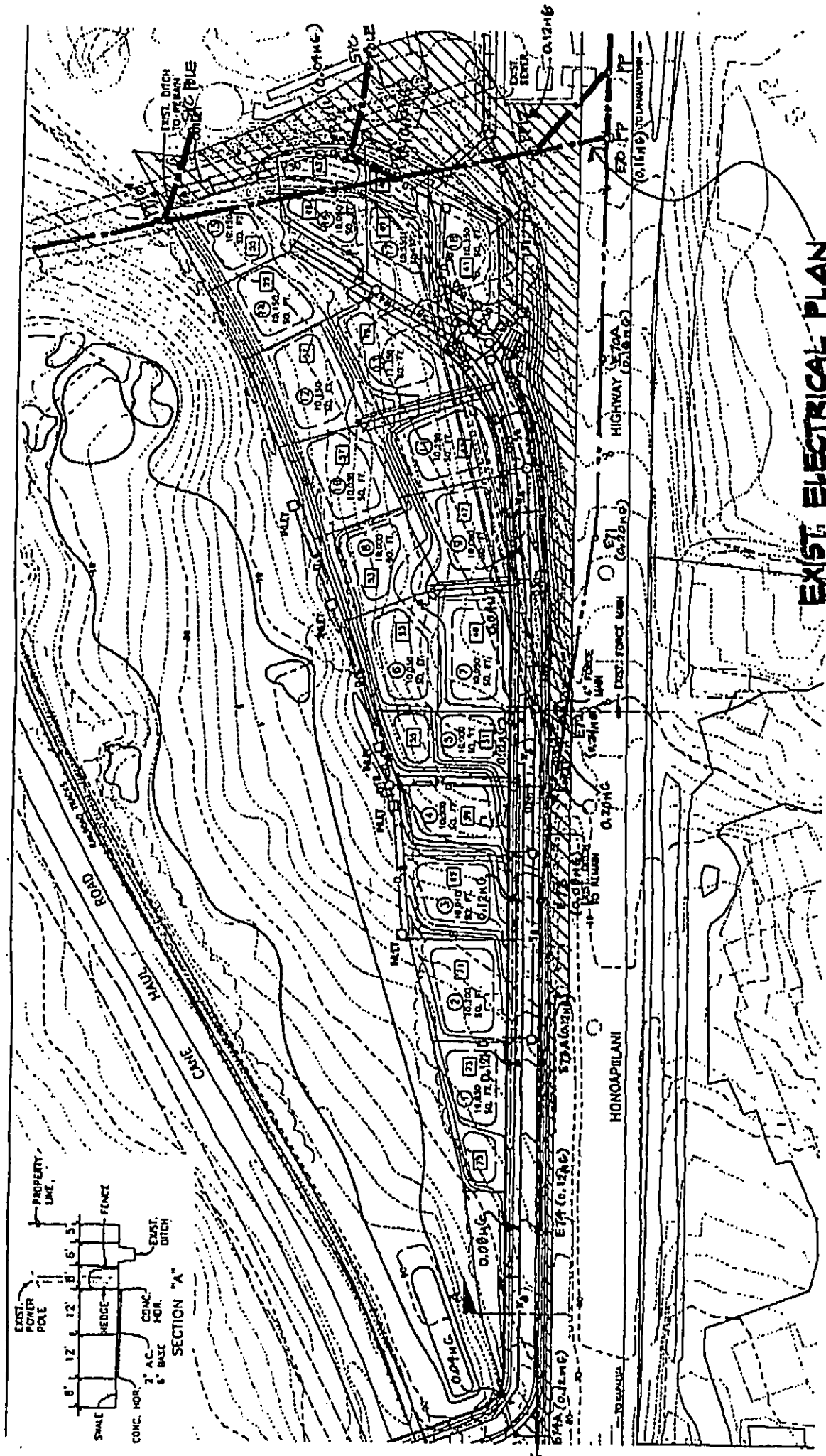
Enclosed is the EMF Survey Report for the location you requested. If you have any questions, please call me at 871-2385.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Takahata". The signature is fluid and cursive, with a prominent loop at the end.

Dan Takahata
Staff Engineer

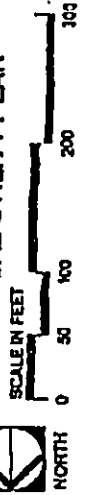
Cc: G. Robert Johnston, Landtec, Inc.



EXIST. ELECTRICAL PLAN

DATE: 11/6/03

CONCEPTUAL UTILITY PLAN



EARTHWORK QUANTITIES:
 EXCAVATION: 8,594 CU. YDS.
 EMBANKMENT: 15,242 CU. YDS.
 AREA: 8.1 ACS.

PREPARED BY: ROYALD M. FUKUNOTO ENGINEERING, INC.
 PRELIMINARY ENGINEERING REPORT FOR KAANAPALI PARCEL 104

PREPARED FOR: LANOTEC, INC.

EMF SURVEY REPORT

By: Dan Takahata

Customer: Jeffrey Kermode
Vuich Environmental Consultants, Inc.
1498 Lower Main St., Suite C
Wailuku, Hi 96793
Ph. No. 249-2777

Location of Survey: Off Honoapiilani Hwy, Kaanapali, TMK – 4-4-06:56

Company Representatives: Dan Takahata & Darren Henna

Date/Time of Survey: 2/12/04 @ 9:20AM

Objective: Jeffrey Kermode requested readings for the location above.

Findings:
Howard Kihune and Bob Johnston met at the site and instructed MECO where to take the readings. Readings were taken (see attached map):

Various pole locations

E1-11	0.04mG
E11	0.12mG
E12	0.12mG
E70	0.16mG
E70A	0.16mG

E71	0.20mG	0.04mG@ edge of road	0.20mG@ edge of ditch
E72	0.24mG	0.12mG@ edge of road	
E73	0.08mG	0.12mG@ edge of road	
E73A	0.12mG	0.12mG@ edge of road	
E74	0.12mG	0.08mG@ edge of road	
E74A	0.12mG	0.04mG@ edge of road	

Survey Method: Spot readings for various locations of the property were taken and recorded. All of the measurements taken at 4 feet elevation.

Summary: Customer was mailed handouts by the EPA "EMF in Your Environment handout" and the State of Hawaii, Department of Health policy on EMF. Copy of the readings mailed to the customer and Bob Johnston.

Measuring Equipment: DEXSIL, Field Star Magnetic Field Recorder. This recorder has a true RMS magnitude sensing of 60HZ along three axes. It has a resolution of 0.04mG in the 0-10mG range, and an accuracy of 1% of full scale.

JOHN WAINEE
GOVERNOR OF HAWAII



JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
HEEA OFFICE

January 19, 1994

**DOH POLICY RELATING TO ELECTRIC AND
MAGNETIC FIELDS FROM POWER-FREQUENCY SOURCES**

The Department of Health, in response to continuing but inconclusive scientific investigation concerning electric and magnetic fields (EMF) from low-frequency power sources, recommends a "prudent avoidance" policy. "Prudent avoidance" means that reasonable, practical, simple, and relatively inexpensive actions should be considered to reduce exposure.

A cautious approach is suggested at this time concerning exposure to electric and magnetic fields (EMF) around low-frequency sources, such as electric appliances and power lines. The existing research data on possible adverse health effects, including cancer, are inconclusive and not adequate to establish or quantify a health risk. For example, the biological mechanisms that might underlie any apparent relationship between EMF and cancer have yet to be clearly defined. Also, some epidemiological studies suggest that, if these fields increase the risk of cancer, it is a very small increase. Other epidemiological studies suggest that there is no increased risk.

The Department of Health will continue to collect and evaluate information on possible health hazards associated with electric and

magnetic fields. If adequate data ever become available to establish what levels may be harmful, appropriate standards will be established.

APPENDIX L
Meeting Notes with Wastewater Management Staff

Hotmail[®] jem96732@hotmail.comInbox | [Previous Page](#)

From : "Eric Yamashige" <ehy@maulgateway.com>
To : <jem96732@hotmail.com>
CC : "Ronald Fukumoto" <ronrfe@maulgateway.com>
Subject : Fw: Kaanapali Parcel 10-H (07/30/2003 site visit)
Date : Mon, 15 Sep 2003 16:39:00 -1000
Attachment : LahPS_2.jpg (133k), 3amigos.jpg (158k), 10-Hexstutilities.pdf (251k)

Hi John,
copy: Ronald

First, I'm glad to see you're feeling better. You gave us all a scare when you didn't show up for your appreciation luncheon at the Dunes.

I'm forwarding these notes as requested by Ronald.

aloha -- eric

— Original Message —

From: Eric Yamashige
To: Howard S. Kihune ; G. Robert Johnston
Cc: Ronald Fukumoto
Sent: Thursday, July 31, 2003 11:23 AM
Subject: Kaanapali Parcel 10-H (07/30/2003 site visit)

Hi Robert, Howard,
copy: Ronald

First, thank you for allowing me to accompany you to the Lahaina Pump Station #2 site visit on Tuesday, July 29, 2003, 9:00 AM - 10:15 AM. Present were: Robert Johnston, Howard Kihune - Landtec; Jake Kosgrick - County WRD; Eric Yamashige - RFE. Following are a few notes:

(1) Attached are 2 photographs and an existing utilities plan exhibit from the preliminary engineering report. The exhibit is the map I brought to the meeting to show relationship of the project to the pump station. The 2 photographs show the scrubber at the pump station, and the 3 amigos discussing the conditions.

(2) Jake explained the smell generally experienced is a chemical smell. The gas is sucked from the wetwell into a scrubber where it is chemically treated and vented into the air via a stack. Looking closely at the photograph you can see the distortion created by the exhaust from the stack. The system is operating efficiently under the condition at the time as odor was not observed when Jake opened the wetwell, while wastewater was rushing to the wetwell.

(3) Jake acknowledged that periodically there is a sewage smell from the station. This occurs when all three pump stations contributing to this PS#2 peak at the same time. The three pump stations are: Lahaina Pump Station #3 (located across the old Chart House in Lahaina); "Hyatt" Pump Station; and "Kaanapali" Pump Station. This peaking occurs between 3 and 6 times per day. Since PS#2 is located in an area where the winds tend to lull, the odor sometimes hangs around.

This peaking causes the wastewater level in the wetwell to rise causing the following: (1) the rising wastewater level forces the odorous gas at a rate which exceeds the capacity of the scrubber, causing some of the odorous gas to pass through the scrubber without being adequately treated, and (2) the wastewater level forces the odorous gas to escape through the wetwell cover.

(4) Pump Station information:

(a) Lahaina PS#3 has a variable speed drive (VSD) pump which runs constantly, at varying

<http://lw10fd.law10.hotmail.msn.com/cgi-bin/getmsg?curmbox=F000000001&a=138c1a1...> 9/16/2003

speeds depending on the level of the wastewater.

(b) Kaanapali PS also has a VSD pump, the forcemain which transitions to a gravity line within the proposed project.

(c) Hyatt PS has an on/off pump. The wastewater level is sensed in the wetwell and the pump is turned on and off accordingly.

(d) Lahaina PS#2 has a VSD.

(5) Discussions on possible remedies. Jake mentioned Lahaina Wastewater Treatment Plant, and consequently some of the transmission system, is next inline for capital improvements. This year efforts are directed at the Wailuku-Kahului plant. Jake suggested discussing with Wastewater Reclamation Chief Tracy Takamine.

(a) Since odor is the problem, one remedy is the upgrading of the scrubber to a larger capacity. The scrubber can be expanded modularly.

(b) The wetwell size can be expanded creating a larger holding capacity allowing for a slower rise in water level.

(c) The "Hyatt" PS pumps can be replaced with VSD pumps to trim the peaking effect.

(d) A structure can be built over the wetwells to contain the odorous gas escaping. This is similar to the Lahaina PS#3 construction, but not as elaborate. Replacing the gaskets on the existing wetwell access panel will not provide adequate protection.

(e) Introduction of chemicals at the contributing PS is already being done. This is not perceived as the problem, or a remedy to the situation.

(f) All this being said, Jake explained Lahaina PS#3 was planned to direct wastewater mauka along the cane haul road, by-passing PS#2, and feeding directly to the Wastewater Reclamation Facility as part of the State's Wahikuli development south of the Gymnasium. Since that project is halted, it is uncertain when this plan will be fulfilled.

(6) Observed the location of the "Kaanapali" PS transition manhole within the project site. PVC pipes exit a pile of rocks, presumably covering this transition manhole. Rushing water can be heard through one of the pipes, however, odor is not observed. The WRD Engineering Division may be able to assist in determining the situation.

(7) Enroute back to the PS#2, all observed a passing whiff immediately north of PS#2. The WRD Engineering Division has a better sniffer than operations, and can be asked to sniff the source of the odor.

These are a few notes from our site visit. Please contact me with any additions or corrections. We will send you a hardcopy via USPS.

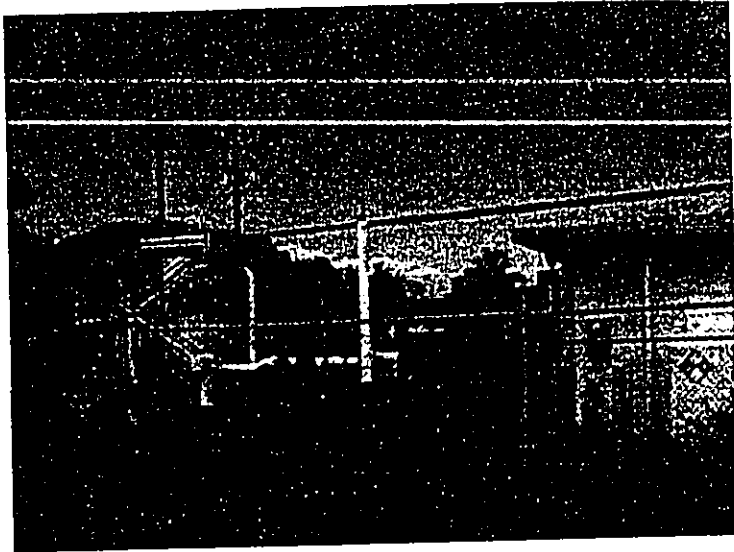
aloha -- eric

Eric H. Yamashige, PE, LS, F.NSPE
Ronald M. Fukumoto Engineering, Inc.
1721 Willi Pa Loop, Suite 203
Wailuku, Maui, Hawaii 96793
ph: (808) 242-8611
cell: (808) 264-2373
fax: (808) 244-7510
email: ehy@mauigateway.com

RECEIVED AS FOLLOWS

MSN Hotmail -

Page 3 of 3



APPENDIX M
Agency Comments and Responses

May-13-04 11:54am

From-DEPT OF PLANNING COUNTY OF MAUI

808-242818

T-777 P.02/04 F-170



REPLY TO
ATTENTION OF: CEPOH-EC-1

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96859-5440

March 9, 2004

'04 MAR 10 P1:14

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Civil Works Technical Branch

Ms. Ann Cua, Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Ms. Cua:

Thank you for the opportunity to review and comment on the Environmental Assessment (EA) for the Kaanapali 10-H Residences Project, Maui (TMK 4-4-6: 56). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

- a. Based on the information provided, a DA permit is not required for the project.
- b. The flood hazard information provided on page 10 of the EA is correct.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

James Pennaz
James Pennaz, P.E.
Chief, Civil Works
Technical Branch



May 18, 2004

Mr. James Pennaz, Chief
Civil Works Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Dear Mr. Pennaz:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 9, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

We acknowledge that a Department of Army permit is not required. We also acknowledge your confirmation of the flood hazard information.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

May-13-04 11:55am From-DEPT OF PLANNING COUNTY OF MAUI

808-242819

T-777 P.03/04 F-170



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director


200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7806

MAR 15 9 43

March 15, 2004

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

TO: KIVETTE A. CAIGOY, Staff Planner
Department of Planning

FROM: ALICE L. LEE, Director 
Department of Housing and Human Concerns

SUBJECT: I.D.: EA 2003/0009 AND CPA 2003/0002
TMK: (2) 4-4-006:056
PROJECT NAME: KAANAPALI 10-B RESIDENCES
DRAFT ENVIRONMENTAL ASSESSMENT AND
COMMUNITY PLAN AMENDMENT APPLICATION
APPLICANT: LANDTC, INC. C/O CHRIS HART AND PARTNERS

We have reviewed the draft Environmental Assessment (EA) and Community Plan Amendment Application for the subject project and have no comments to offer.

Thank you for the opportunity to comment. We are returning the draft EA and application for your use.

ETO:hs

Enclosures

c: Housing Administrator

TO SUPPORT AND ENHANCE THE SOCIAL WELL-BEING OF THE CITIZENS OF MAUI COUNTY



May 18, 2004

Ms. Alice Lee
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

Dear Ms. Lee:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 15, 2004 "no comments" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

May-13-04 11:55am

From-DEPT OF PLANNING COUNTY OF MAUI

808-242819

T-777 P.04/04 F-170

LINDA LINCLE
GOVERNOR



RISE K. SAITO
Comptroller

KATHERINE H. THOMASON
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

'04 MAR 22 P12:24
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

March 18, 2004

MEMORANDUM

TO: Michael W. Foley, Planning Director
Maui County Planning Department

ATTN: Kivette A. Caigoy, Staff Planner

FROM: Randall M. Hashimoto, State Land Surveyor *mm*
DAGS, Survey Division *sw*

SUBJECT: ID.: EA 2003/0009 and CPA 2003/0002
TMK: 4-4-006:056
Project Name: Kaanapali 10-H Residences Draft Environmental
Assessment and Community Plan Amendment Application
Applicant: Landtec Inc. c/o Chris Hart and Partners

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.



May 18, 2004

Mr. Randall M. Hashimoto
Survey Division
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810-0119

Dear Mr. Hashimoto:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 18, 2004 "no objections" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

We acknowledge that you have confirmed that no government survey triangulation stations of benchmarks are affected by the proposed project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

United States Department of Agriculture



 NRCS Natural Resources
Conservation Service

Our People...Our Islands...In Harmony
210 Ima Kala Street, Suite #209, Wailuku, HI 96793-2100

Date: March 22, 2004

Ms. Kivette A. Caigoy, Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793 --

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
04 MAR 23 AM 1:36

Dear Ms. Caigoy,

SUBJECT: Kaanapali 10-H Residences Draft EA & Community Plan Amendment
TMK: 4-4-006: 056
I.D.: EA 2003/0009, CPA 2003/0002

We have no comment on the subject application.

Thank you for the opportunity to comment.

Sincerely,


Neal S. Fujiwara
District Conservationist



May 18, 2004

Mr. Neal S. Fujiwara, District Conservationist
Natural Resources Conservation Service
US Department of Agriculture
210 Imi Kala Street, Suite #209
Wailuku, Hawaii 96793-2100

Dear Mr. Fujiwara:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 22, 2004 "no comment" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department



March 22, 2004

Ms. Kivette A. Caigoy
Staff Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, HI 96793

Dear Ms. Caigoy:

Subject: Kaanapali 10-H Residences Draft Environmental Assessment and Community Plan
Amendment Application
TMK: (2) 4-4-006:055
I.D.: EA 2003/0009 and CPA 2003/0002

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

In reviewing the information transmitted and our records, we have no objection to the subject project. We encourage the developer's electrical consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

A handwritten signature in cursive script that reads "Neal Shinyama".

Neal Shinyama
Manager, Engineering

NS/dt:ikh

'04 MAR 25 AM 11:58

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED



May 18, 2004

Mr. Neal Shinyama, Manager
Engineering
Maui Electric Company
P.O. Box
Kahului, Hawaii 96732

Dear Mr. Shinyama:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 22, 2004 "no objection" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

The developer's electrical consultant will meet with you as soon as plans are finalized for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department



May 18, 2004

Mr. Neal Shinyama, Manager
Engineering
Maui Electric Company
P.O. Box
Kahului, Hawaii 96732

Dear Mr. Shinyama:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 22, 2004 "no objection" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

The developer's electrical consultant will meet with you as soon as plans are finalized for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

LINDA LINGLE
GOVERNOR



PATRICIA HAMAMOTO
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2350
HONOLULU, HAWAII 96804

MAR 24 12:53
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

March 23, 2004

OFFICE OF THE SUPERINTENDENT

Mr. Michael W. Foley, Planning Director
County of Maui
250 South High Street
Wailuku, Hawai'i 96793

Attention: Ms. Kivette A. Caigoy

Subject: Draft Environmental Assessment (DEA)
and Application for Community Plan Amendment
for Ka'anapali Residences, an 18-Lot Residential Subdivision,
Lahaina, Maui TMK: 4-4-006:056 (EA 2003/0009) (CPA 2003/0002)


The Department of Education (DOE) has reviewed the Draft Environmental Assessment (DEA) and Community Plan Amendment for the Ka'anapali Residences, a residential subdivision in Ka'anapali.

The DOE's fair-share requirement for school facilities applies to residential developments of 50 or more units. Although the proposed subdivision will include an accessory dwelling on each of the lots, the total number of residential units is 36, so the DOE would not seek a fair-share contribution from this project.

The DOE has no further comments on the application but appreciates the opportunity to review the plans.

If you have any questions, please call me at 586-3444 or Heidi Mecker of the Facilities and Support Services Branch at 733-4862.

Sincerely yours,


Rae M. Loui
Assistant Superintendent

RML:mp

c: FSSB

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER



May 18, 2004

Ms. Rae M. Loui, Assistant Superintendent
Department of Education
P.O. Box 2350
Honolulu, Hawaii 96804
Attention: Heidi Meeker

Dear Ms. Loui:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 23, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project acknowledging that no fair share contribution is required.

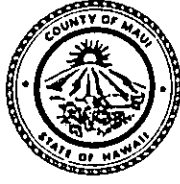
If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

LAN M. ARAKAWA
Mayor
MICHAEL W. FOLEY
Director
WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 24, 2004

RECEIVED
MAR 30 2004

CHRIS HART & PARTNERS
Landscape Architecture & Planning

Mr. Chris Hart
Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, Hawaii 96793

Dear Mr. Hart:

RE: Maui Planning Commission Comments on the Draft Environmental Assessment for the Kaanapali Parcel 10-H Residences located at TMK: 4-4-006: 056, Honoapiilani Highway, Kaanapali, Island of Maui, Hawaii (EA 2003/0009) (CPA 2003/0002)

At its regular meeting on March 23, 2004, the Maui Planning Commission (Commission) reviewed the above-referenced project and had the following comments:

1. Clarify whether the proposed project will be limited to lots only, or will it include the construction of the main and ohana dwellings in addition to the lots.
2. Describe and clarify the intention of the open space buffer located above the project.
3. Provide a description of the management activities for the unidentified petroleum-based substances, solid waste, surface fill material, and building materials as described on page 10 of the report.
4. Figure 3 identifies existing uses on the property. Where will these uses be relocated with the development of the proposed project?
5. Dumping of landscape debris was noted in the report. Has the source of the dumping been identified? If dumping is anticipated to continue, discuss a management plan.
6. Provide a discussion of the energy conservation measures proposed for the project.

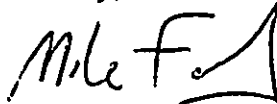
Mr. Chris Hart
March 24, 2004
Page 2

7. Discuss the uses of reclaimed/recycled water for the proposed project through all phases of development.
8. Identify the ownership, users and uses for pre and post development, and any potential noise impacts of the existing water pump house located along the southern property boundary.
9. Provide an analysis, including historical uses of the property, of the re-designation of the property from Multifamily to Light Industrial in the 1996 West Maui Community Plan update.
10. Discuss any plans to provide a second accessway to the project site.

In addition, the Department recommends labeling "Honoapiilani Highway" on Figure 8 of the report.

Thank you for your cooperation. If additional clarification is required, please contact Ms. Kivette A. Caigoy, Environmental Planner, at 270-7735.

Sincerely,



Michael W. Foley
Planning Director

MWF:KAC:do

c: Wayne A. Boteilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Staff Planner
Ann Cua, Staff Planner
Project File (EA 2003/0009)
Project File (CPA 2003/0002)
General File
K:\WP_DOCS\PLANNING\EA\2003\9_Kaanapali10HResSubd\MPCCCommentsDEA.wpd



May 20, 2004

Mr. Michael W. Foley, Director
Maui County Department of Planning
250 S. High Street
Wailuku, Maui, Hawaii 96793
Attention: Ms. Kivette A. Caigoy, Planner

Dear Mr. Foley:

RE: Final Environmental Assessment and Community Plan Amendment
Application for the Kaanapali Parcel 10-H Residences located at
TMK 4-4-006: 056, Honoapiilani Highway, Kaanapali, Island of Maui,
Hawaii (EA 2003/0009) (CPA 2003/0002)

We are responding to comments in your attached letter dated March 24, 2004 and enumerated as follows:

1. It is intended that the proposed project will include the construction of a main dwelling and an *ohana* dwelling unit on each improved residential lot.
2. A peripheral lawn area surrounding the 13th hole fairway is located immediately *mauka* of the project. This provides a buffer between the fairway and the proposed project, but is not a part of the development site.
3. The Final EA report elaborates on the management activities for the unidentified petroleum-based substances, solid waste, surface fill material, and building materials described in the report.
4. The existing plant nursery for the Marriott Hotel operates on a month to month lease and will be relocated to yet-to-be-determined location within Kaanapali Resort. The vacant residence/sign painter's workshop remains unused. The dumping of landscaping debris from the Kaanapali Resort golf courses on the subject property was discontinued over a year ago.
5. As previously noted, the dumping of landscaping debris on the subject property from the Kaanapali Resort golf courses was discontinued over a year ago.

6. A discussion of energy conservation proposed for the project is included in the "Project Description" section.
7. Currently, reclaimed/recycled water is used for golf course irrigation at the Kaanapali Resort. Regulations of the State Department of Health (DOH) prohibit the use of reclaimed water for irrigation within 4 feet of residential dwellings. It is proposed that a dual water line be installed for the irrigation of the common landscaped areas and that reclaimed water be used to extent allowable by the State DOH regulations. In addition, non-potable or reclaimed/recycled water will be used for dust control purposes during the construction phase to extent allowable by State DOH regulations.
8. The existing water pump house on the south side of the subject property is owned by the Hawaii Water Services Company, a private utility company of the Kaanapali Development Corporation. This well is used occasionally for golf course irrigation. An easement has been established in favor of this private utility. The proposed project will not utilize water from this well. Noise from the operation of the well is minimal. The major source of noise in the area is vehicular traffic along Honoapiilani Highway.
9. The following is a history of the use of the subject property based on an examination of aerial photographs and/or site visitation:
 - November 21, 1959- Sugar cane cultivation and associated road networks;
 - February 11, 1971- No significant changes. Sugar cane cultivation is the primary use;
 - December 20, 1980- Significant changes noted on the subject property. Storm water easement now traverses the subject property from the southeastern corner to the northwestern corner. Four (4) structures are visible. Limited rock piles are visible near the central eastern boundary.
 - February 22, 1995- Paved road traverses through the property. Two (2) structures and a plant nursery are established. Two (2) previously identified structures are no longer present.
 - February 1, 2002- The plant nursery remains. The sign painting shop building is now vacant. Dumping of landscaping debris from the golf courses has been discontinued.

As noted in the Draft EA, the subject property was designated for "Multi-Family" residential use in the 1983 Lahaina Community Plan. It should be

EA Response to Planning Department
Kaanapali Parcel 10-H Residences
March 20, 2004
Page 3

noted that Kaanapali Royal apartment condominium project is on the other side of Honoapiilani Highway from the subject site and is designated for "Multi-family" residential use.

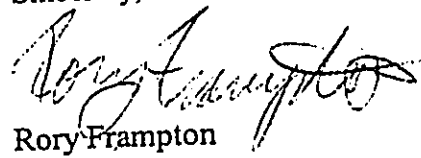
In 1996 during the update of the Lahaina Community Plan (now known as the West Maui Community Plan), the Planning Department recommended that the subject property be designated for "Light Industrial" use to reflect the use of the property at that time.

10. The project site will be serviced by only one access way. This access is referred to as "Alternate B" in the project's Traffic Impact Assessment Report. An alternative access out of the project to the south is not possible primarily because the project site is not contiguous to Halelo Street. The project site is separated from the roadway by privately owned parcels. The presence of the golf course, wastewater pump station and water well constrain opportunities to access Halelo Street as well. Lastly, the driveway access from the wastewater pump station is only a few feet from Honoapiilani Highway, a substandard condition which would prevent use of this driveway for access to the property.

Please be advised that Honoapiilani Highway will be labeled on Figure 8, Kaanapali Parcel 10-H Conceptual Landscape Plan.

Please contact me, if additional assistance is needed.

Sincerely,



Rory Frampton

Enclosure

Cc: Mr. Howard Kihune, Landtec
Mr. Bob Johnson, Landtec
Project file

ALAN M. ARAKAWA
Mayor



GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

DEPARTMENT OF WATER SUPPLY

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

04 MAR 31 A9:35

DEPT OF PLANNING
COUNTY OF MAUI

March 29, 2004

Mr. Michael W. Foley, Director
Planning Department
County of Maui
250 S High Street
Wailuku, Hawaii 96793
Attn: Ms. Kivette Calgoy

Dear Mr. Foley:

Project Name: Kaanapali 10-H Residences - development of 23-lot single family residential subdivision including one and two story main dwellings with detached ohana and related improvements on 7.65 ac lot
TMK: (2)4-4-006:056
ID: EA 2003/0009 and CPA 2003/0002

Thank you for the opportunity to provide comments on this project proposal.

Source Availability and Consumption

The project site is within DWS service area. However, the applicant indicated that the Hawaii Water Service Company, a privately owned utility company, will provide service for this project.

Anticipated average daily demand for this project would be in the range of 23,000 - 28,000 GPD based on Statewide Water System Standard guidelines. Actual consumption depends on fixture units, irrigation, and intensity of use.

System Infrastructure

A 16-inch DWS waterline runs on the west side of the parcel along Honoapili Highway. DWS does not review or set requirements on private water systems for domestic and fire protection purposes. For projects involving private water systems, we recommend that the Planning Department require that the applicant comply with DWS Rules and Regulations for Subdivisions.

Pollution Prevention

The project area is served by the Honokowai aquifer which has a sustainable yield of 8 MGD of potable water. In order to protect surface and groundwater resources, we encourage the applicant to adopt Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction and vehicle operations. Additional mitigation measures are enumerated below, and should be implemented during construction:

1. Prevent cement products, oil, fuel, and other toxic substances from falling or leaching into the water.
2. Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
3. Retain ground cover until the last possible date.

"By Water All Things Find Life"

Printed on recycled paper



Page 2
Mr. Michael W. Foley
Kaanapali 10-H Residences
March 29, 2004

Page 2

4. Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil amendments, fertilizers and temporary irrigation. Use high seeding rates to ensure rapid stand establishment.
5. Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical runoff.
6. Maintain drainage structures, detention, silting and debris basins.
7. Control dust by proper stockpiling and use non-potable water for dust control.
8. Cover open vehicles carrying soils, gravel or other particulate matter.

Conservation

We encourage the applicant to integrate the following conservation measures and techniques in the project design and construction as well as convey them to future homeowners, where applicable:

Use brackish and /or reclaimed water sources for dust control during construction, if such alternatives are available.

Eliminate Single-Pass Cooling: Single-pass, water-cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air conditioners, freezers, and commercial refrigerators.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets, and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip".

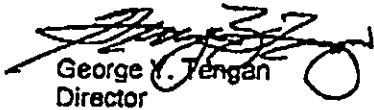
Use Climate -adapted Plants: The project is located in the Maui County Planting Plan - Plant Zones 3 & 5. We encourage the applicant to utilize appropriate native and non invasive species and avoid the use of potentially invasive plants. Native plants adapted to the area, conserve water and protect the watershed from degradation due to invasive alien species. Attached is a list of appropriate plants for the zones as well as potentially invasive plants to avoid.

Limit Irrigated Turf: Limit irrigated turf to 25% or less of total landscaped area. Low-water use shrubs and ground covers can be equally attractive and require substantially less water than turf.

Look for Opportunities to Conserve Water: A few examples of these are as follows: When clearing driveways, etc. of debris, use a broom instead of a hose. When washing cars, use a hand-operated spray nozzle instead of an open hose. Additionally, check for leaks in faucets and toilet tanks.

Should you have questions, please contact our Water Resources and Planning Division at (808) 270-7199.

Sincerely,


George K. Tengan
Director

oam
cc: engineering division
applicant, with attachments:
The Costly Drip
Maui County Planting Plan - Plant Zones 3 & 5 - Saving Water in the Yard - What and How to Plant in your Area
Ordinance No. 2108 - A Bill for an Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code
Selected BMPs from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA
A Checklist of Water Conservation Ideas for the Home and Yard



May 18, 2004

Mr. George Y. Tengan, Director
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793
Attention: Edna Manano

Dear Mr. Tengan:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 29, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project and providing information relative to water availability and consumption, system infrastructure, pollution prevention, and conservation.

The applicant will consider your recommendations related to pollution prevention and conservation during the design development stages of the project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

cc: Raymond

LINDA LINGLE
GOVERNOR OF HAWAIIGENEVIEVE SALMONSON
DIRECTORSTATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.usRECEIVED
MAR 31 2004CHRIS HART & PARTNERS
Landscape Architecture & Planning

March 31, 2004

Michael Foley
Maui Planning Department
250 South High St.
Wailuku, HI 96793

Attn: Kivette Caigoy

Dear Mr. Foley:

Subject: Draft environmental assessment (EA), Kaanapali Residences

We have the following comments:

Sustainable building techniques: Please consider applying sustainable building techniques presented in the "Guidelines for Sustainable Building Design in Hawaii." In the final EA include a description of any of the techniques you will implement. Contact our office for a paper copy of the guidelines or go to our website at <http://www.state.hi.us/health/oeqc/guidance/sustainable.htm>.

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

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".
GENEVIEVE SALMONSON
Directorc: Rory Frampton, CH&P
G. Robert Johnston, Landtec



May 19, 2004

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

Dear Ms. Salmonson:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment (EA) and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 31, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

Although the building plans for the proposed residences are very conceptual at this early stage, the project architect has been directed to review and utilize the "Guidelines for Sustainable Building Design in Hawaii" adopted by the State Environmental Council. Design considerations will include but not be limited the use of solar water heating; incorporating an exercise circuit linking the project's two (2) private parks on both ends of the project site; use of lamps and ballasts with the highest efficiency; maximizing day lighting through the use of vertical fenestration and sky lights; use of quality, energy efficient appliances and fan systems; and the installation of a non-potable water irrigation line for common landscaped areas. The Final EA will contain these considerations.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department



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

HRD04/1308

March 31, 2004

Kivette A. Caigoy, Staff Planner
Maui Planning Commission
c/o Department of Planning
County of Maui
250 High Street
Wailuku, HI 96793

RECEIVED
APR 05 2004
CHRIS HART & PARTNERS
Landscape Architecture & Planning

RE: Request for Comment and Recommendation on KaaNapali 10-H Residences Draft Environmental Assessment and Community Plan Amendment Application, Ka'anapali, Maui, TMK: (2) 4-4-006: 056

Dear Kivette A. Caigoy,

The Office of Hawaiian Affairs is in receipt of your March 3, 2004, request for comments on the above project. OHA offers the following comments and recommendations.

The document is unclear on the ultimate number of planned residences to be built on the subject property. The potential number of residences seem to range from 18 to 52, including the anticipated `ohana dwellings on each lot. These numbers are integral to determining the impact on Maui's already overwhelmed infrastructure.

Throughout the document, the authors reiterate the demand for housing in Maui. Demand should not replace planning, does not equate to the capacity of people which the environment, existing infrastructure and public services can handle. Residential subdivisions, no matter the size, substantially increase the need for water, traffic management and public services. These items too often are not only not mandated before development, but are not even considered or anticipated in a thorough, proactive manner.

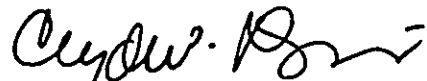
Furthermore, decisions on developments should not be based solely on economics – such as short-term benefits to the construction industry, and long-term property tax revenue increases –

but should be based on planning required for necessary support services; infrastructure capacity, requirements and limitations; water and land use impacts; and conservation, preservation and constitutionally mandated public trust rights.

OHA also requests assurances from the developer that should this project go forward, and should *iwi* or Native Hawaiian cultural or traditional deposits be found during ground disturbance or excavation, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions, please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,



Clyde W. Namu'o
Administrator

Cc: Office of Environmental Quality Control
Landtec, Inc.
Chris Hart & Partners, Inc.



May 18, 2004

Mr. Clyde W. Namu'o
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813
Attention: Heidi Guth

Dear Mr. Namu'o:

RE: KaaNapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your March 31, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project. We offer the following responses to your comments:

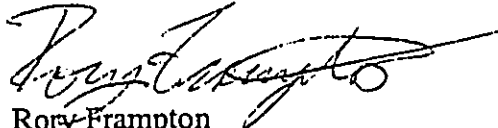
Regarding your comments on infrastructure and public services planning, we would respond by noting that the area has been planned and zoned for urban use for over forty years. The applicant is seeking an amendment to the West Maui Community Plan from Light Industrial to Single Family. The project's supporting rationale is based on the appropriateness of the area for residential use verses light industrial. If granted, the request would result in the Community Plan being consistent with the R-3 residential zoning which has been in place for over forty years. The requested Community Plan Amendment would also result in a less intense land use than the Community Plan's existing Light Industrial designation or the previous Multi-Family designation.

As stated in the Draft EA, in the event that any historic sites or remains are discovered during construction activities, all work will cease in the area. The area will be protected and the State Historic Preservation Division will be contacted immediately.

Mr. Clyde W. Namu'o
Office of Hawaiian Affairs
Re: Ka'anapali 10-H Residences
May 18, 2004
Page 2

Thank you again for your insightful comments. If you have any further questions, please do not hesitate to contact me.

Sincerely,



Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

ALAN M. ARAKAWA
Mayor



1-808-270-7230

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

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

DEPARTMENT OF PARKS & RECREATION

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

April 1, 2004

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

04 APR 5 9:10

MEMO TO: Michael W. Foley, Planning Director

FROM: 
GLENN T. CORREA, Director

SUBJECT: KAA NAPALI 10-H RESIDENCES
Draft Environmental Assessment and Community Plan Amendment
T.M.K. (2) 4-4-006:056
EA 2003/0009 and CPA 2003/0002

We have reviewed the subject project and have no comments or objections to the proposed action.

Thank you for the opportunity to review and comment. Please contact me or Mr. Patrick Matsui, Chief of Planning and Development, at extension 7387 if there are any questions.

c: Patrick Matsui, Chief-Planning and Development



May 18, 2004

Mr. Glenn T. Correa, Director
Department of Parks & Recreation
700 Hali'a Nakoia Street, Unit 2
Wailuku, Hawaii 96793


Dear Mr. Correa:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your April 1, 2004 "no comments or objections" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Brampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809
April 6, 2004

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

CPA 2003-0002.RCM
LD-NAV

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

Dear Mr. Foley:

Subject: I.D. Nos.: CPA 2003/0002 and EA 2003-0009
Applicant: Landtec, Inc, c/o Chris Hart Partners
Authority: County of Maui Department of Planning
Project: Kaanapali 10-H Residences Draft Environmental
Assessment Community Plan Amendment Application
TMK: (2) 4-4-006: 056

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division made available or distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Aquatic Resources
- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Commission on Water Resource Management and Engineering Division comment.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer on the subject matter.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII



2004 MAR 29 P 3:18
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 9, 2004

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 CONVEYANCE
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENGINEERING
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD/NAV

Ref.: CPA2003-0002.CMT

Suspense Date: 3/22/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources (DD)
*XXX Division of Forestry & Wildlife
*XXX Engineering Division (DD)
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management (DD)
*XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office (DD)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: I.D. Nos.: CPA 2003/0002 and EA 2003/0009
TMK: (2)4-4-006: 056
Applicant: Landtec, Inc. c/o Chris Hart & Partners
Project: Kaanapali 10-H Residences and Community Plan
Amendment Application
Authority: County of Maui Department of Planning

Please review the document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date. If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

() Comments attached.

Division: Engineering

Signed: _____

Date: MAR 29 2004

Name: ERIC T. HIRANO, CHIEF ENGINEER

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LA/NAV

Ref.: CPA2003-0002.CMT

COMMENTS

- (X) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone C.
- 0 Please take note that the project sites, according to the Flood Insurance Rate Map (FIRM), are located in Zone ____.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
- () Additional Comments: _____
- (X) Other: Please correct information on page 10, Item 3. Flood and Tsunami Zone, Existing Conditions. The correct Panel Number is 15003 0153C, Flood Insurance Rate Map, Federal Emergency Management Agency.

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

Signed: _____

for ERIC T. HIRANO, CHIEF ENGINEER

Date: _____

3/29/04

6-13-04:12:52PM;

6 / 7

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 9, 2004

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

LD/NAV
Ref.: CPA2003-0002.CMT

Suspense Date: 3/22/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources (DD)
*XXX Division of Forestry & Wildlife
XXX Engineering Division (DD)
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office (DD)

COMMISSION ON WATER
RESOURCE MANAGEMENT

04 MAR 10 08:49

RECEIVED

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: I.D. Nos.: CPA 2003/0002 and EA 2003/0009
TMK: (2)4-4-006: 056
Applicant: Landtec, Inc. c/o Chris Hart & Partners
Project: Kaanapali 10-H Residences and Community Plan
Amendment Application
Authority: County of Maui Department of Planning

Please review the document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date. If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

~~Yes~~ We have no comments.

(X) Comments attached.

Division: CWRM

Signed: _____

Date: 19 March 04

Name: _____

LINDA LINBLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSONMEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHiyOME L. FUKINO, M.D.
STEPHANIE A. WHALENERNEST Y.W. LAU
DEPUTY DIRECTOR

March 22, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Kaanapali Parcel 10-H 18-lot subdivision CP Amendment/EA

FILE NO.: CPA2003-0002.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- OTHER:

If there are any questions, please contact Charley Ice at 587-0251.

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT

2004 MAR 10 PM 12:48



2004 MAR 15 A 9:55
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 9, 2004

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

LD/NAV

Ref.: CPA2003-0002.CMT

Suspense Date: 3/22/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources (DD)
*XXX Division of Forestry & Wildlife
XXX Engineering Division (DD)
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management (DD)
*XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office (DD)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: I.D. Nos.: CPA 2003/0002 and EA 2003/0009
TMK: (2)4-4-006: 056
Applicant: Landtec, Inc. c/o Chris Hart & Partners
Project: Kaanapali 10-H Residences and Community Plan
Amendment Application
Authority: County of Maui Department of Planning

Please review the document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date. If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division: MDLO

Signed: Jason K. Koga

Date: 3-11-04

Name: Jason K. Koga



May 18, 2004

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your April 6, 2004 "no other comment to offer" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

The erroneous Flood Insurance Rate Map panel number, as noted by Mr. Eric Hirano, will be corrected in the Final Environmental Assessment.

In response to Mr. Ernest Lau's recommendation: The Department of Water Supply (DWS) has been apprised of the project via the agency review process. The DWS projects that the average daily demand would be in the range of 23,000 to 28,000 gallons per day. If the DWS determines that the proposed community plan amendment for the subject project will impact its Water Use and Development Plan (WUDP), the DWS director is obligated to initiate an amendment to the said WUDP.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Erampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Kivette Caigoy, Planning Department

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



04 APR 16 11:54

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

STATE OF HAWAII

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

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

HAWAII HISTORIC PRESERVATION
DIVISION REVIEW

Log #: 2004.1145
Doc #: 0404CD26
Received: 5 March 2004

Applicant/Agency: Mr. Michael Foley, Planning Director
Address: County of Maui
Department of Planning
250 south High Street
Wailuku, Hawaii 96793

SUBJECT: Chapter 6E-42 Historic Preservation Review - Application for Community Plan
Amendment and HRS Chapter 343 Environmental Assessment for the Proposed
Kaanapali Parcel 10-H Residences
(Subject I.D.: EA 2003/0009 and CPA 2003/002) [County/Planning]

Ahupua'a: Ka'anapali and Hanaka'o'o
District, Island: Lahaina, Maui
TMK: (2) 4-4-006:056

1. We believe there are no historic properties present, because:

- a) intensive cultivation has altered the land
- b) residential development/urbanization has altered the land
- c) previous grubbing/grading has altered the land
- d) an acceptable archaeological assessment or inventory survey found no historic properties
(Morawski and Dega 2003) (SHPD DOC NO.: 0310MK03/LOG NO.: 2004.1977)
- e) other:

2. This project has already gone through the historic preservation review process, and mitigation has been completed ____.

Thus, we believe that "no historic properties will be affected" by this undertaking

In the event that historic sites (human skeletal remains, etc.) are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Office needs to be contacted immediately at 243-5169, on Maui, or at (808) 692-8023, on O'ahu.

Staff: Cathleen A. Dagher Date: 13 April 2004
Cathleen A. Dagher, Assistant Maui/Lana'i Island Archaeologist (808) 692-8023



May 18, 2004

Ms. Cathleen A. Dagher, Assistant Maui/Lanai Island Archaeologist
Department of Land and Natural Resources
Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Ms. Dagher:

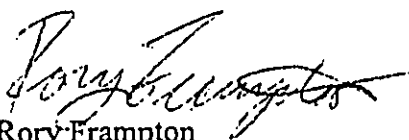
RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your April 13, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project in which you state that "no historic properties will be affected". This conclusion is based on an acceptable archaeological inventory survey that found no historic properties.

As stated in your letter and in the Draft EA, in the event that any historic sites or remains are discovered during construction activities, all work will cease in the area. The area will be protected and your office will be contacted immediately.

Thank you again for providing comments. If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Kivette Caigoy, Planning Department

LINDA LINGLE
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

'04 APR 27 P1:17

MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION
BEN HENDERSON
DEPUTY TO THE CHAIRMAN
KAULANA H. PARK
EXECUTIVE ASSISTANT

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

April 23, 2004

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

Attn: Kivette Caigoy

Dear Mr. Foley:

Subject: Kaanapali 10-H Residences, Draft Environmental
Assessment and Community Plan Amendment Application,
EA 2003/0009 and CPA 2003/0002, TMK 4-4-6:56,
Kaanapali, Maui

Thank you for the opportunity to review the subject
application. The Department of Hawaiian Home Lands has no
comment to offer.

If you have any questions, please call Daniel Ornellas of
our Planning Office at 586-3836.

Aloha and mahalo,

fr

Daniel Ornellas
Micah A. Kane, Chairman
Hawaiian Homes Commission

1-663 P.02/03 F-900

808-242818

Apr-27-04 04:12pm From-DEPT OF PLANNING COUNTY OF MAUI



May 18, 2004

Mr. Micah Kane, Chairman
Hawaiian Homes Commission
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

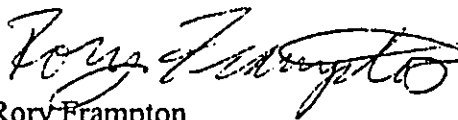
Dear Mr. Kane:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your April 23, 2004 "no comment" letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

LINDA LINGOLE
GOVERNOR OF HAWAII



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

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

LORRON W. FANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

'04 MAY -7 AB 37

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

May 6, 2004

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawai'i 96793

Attention: Kivette A. Caigoy

Dear Mr. Foley:

Subject: **Kaanapali 10-H Residences Draft Environmental Assessment
and Community Plan Amendment Application**
TMK: (2) 4-4-006: 056
EA 2003/0009 and CPA 2003/0002

Thank you for the opportunity to comment on the Environmental Assessment and Community Plan Amendment Application for the Kaanapali 10-H project. The following comments are offered:

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

Mr. Michael W. Foley

May 6, 2004

Page 2

4. The property may be harboring rodents that will be dispersed to the surrounding areas when any buildings are demolished or the site is cleared. The applicant is required by HAR, Chapter 11-26, "Vector Control" to eradicate any rodents prior to demolition or site clearing activities and to notify the Department of Health by submitting Form VC-12 to the Maui Vector Control program when such action is taken. Rodent traps and/or rodenticides should be set out on the project site for at least a week or until the rodent activity ceases. The Maui Vector Control program phone number is 873-3560.
5. The project is in close proximity to the County sewer system. Wastewater from this project shall be disposed into the County sewer system.
6. There are debris mounds of solid waste identified at the site. These materials should be managed and disposed of in accordance with federal, state, and local regulations. Prior to disposal, we recommend that the material be segregated, if possible, so that green waste materials may be composted on site, and/or recyclable materials (such as metal, rebar, unpainted concrete, tires, white goods) be taken to Department of Health permitted recycling or composting facilities. Non recyclable materials shall be disposed of at a Department of Health permitted solid waste landfill.
7. Chapter 11-501, "Asbestos Requirements" requires owners or operators of a demolition or renovation activity to thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos using a certified inspector pursuant to HAR, Chapter 504. The Applicant is required to file with the Noise, Radiation and Indoor Air Quality Branch, Asbestos Demolition/Renovation Notification at least ten (10) working days prior to the demolition of each building (regardless of the presence of asbestos) or the disturbance of regulated asbestos containing materials during renovation activities. All regulated quantities and types of asbestos containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill by a licensed asbestos contractor using certified persons. Questions concerning asbestos requirements should be directed to Mr. Thomas Lilleikis of the Noise, Radiation and Indoor Air Quality Branch at (808) 586-5800.
8. The wastes identified by the consultant are consistent with what may be found in a vacant property. Specifically, all the identified containers (55 gallon drums and 5 gallon containers) found during the reconnaissance should be identified and either reused or disposed of according to all federal, state and local requirements. If the wastes are intended for disposal, a hazardous waste determination must be made on the petroleum-like substances, solvents and paints. Likewise, old pesticides and fertilizers and unidentified substance containers must also be identified.

Mr. Michael W. Foley
May 6, 2004
Page 3

The Department of Health concurs with the recommended management procedures found on Page 16 of the Phase I investigation. Proper secondary containment to avoid spills and leaks of the drums and containers should be implemented. Some form of identification and labeling must also be written on the drums or containers. Questions regarding this matter should be directed to Ms. Grace Simmons at 808 586-4226.

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

Sincerely,



Herbert S. Matsubayashi
District Environmental Health Program Chief

c: Grace Simmons



May 18, 2004

Mr. Herbert S. Matsubayashi
Department of Health
Maui District Health Office
54 High Street
Wailuku, Hawaii 96793

Dear Mr. Matsubayashi:

RE: KaaNapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your May 6, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project. We offer the following responses to your comments:

1. The applicant will apply for a NPDES permit from the Clean Water Branch.
2. If it is expected that maximum allowable noise levels will be exceeded, a noise permit will be obtained.
3. Prior to finalizing planning and design of the proposed project, sound levels will be taken into consideration when determining placement of stationary equipment such as compressors and HVAC equipment in order to attenuate noise to acceptable levels.
4. At least a week prior to any demolition or site clearing activities, rodent traps and/or rodenticide will be set out on the project site and Form VC-12 will be submitted to the Maui Vector Control program.
5. As noted in the Draft EA, onsite improvements will be constructed and sewer mains will be connected to the existing pump station adjacent to the project site.
6. Solid waste debris will be disposed of in accordance with federal, state, and local regulations. Green waste will be composted and recyclable materials will be disposed of at certified sites when practicable.
7. Prior to demolition of existing structures, an inspection of the structures will be conducted by a certified inspector for presence of asbestos, lead and arsenic containing materials. Such materials will be removed and disposed of in accordance with all county, state and federal codes and guidelines.

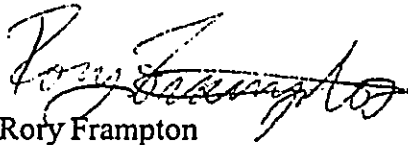
Mr. Herbert S. Matsubayashi
Department of Health
Re: Kaanapali 10-H Residences
May 18, 2004
Page 2

8. Any waste identified as hazardous , such as 55 gallon drums & 5 gallon containers, will be reused or disposed of according to all federal, state, and local requirements.

In addition, recommended management procedures outlined in the Phase I Investigation (Appendix "K") will be implemented, in particular, containment, identification and labeling measures.

If you have any further questions, please do not hesitate to contact me.

Sincerely,



Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

ALAN M. ARAKAWA
MAYOR



CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

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

May 10, 2004

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
04 MAY 10 P2:29

Kivette A. Caigoy, Staff Planner
Department of Planning, County of Maui
250 South High Street
Wailuku, HI 96793

Subject: EA 2003/0009 and CPA 2003/0002 Kaanapali 10-H Residences

Dear Kivette A. Caigoy,

I have reviewed the subject application and would like to remind the applicant of the following:

1. Due to the ohana structures and the access being a cul-de-sac for some units, we will be requiring wide road widths during the review process.
2. The apparatus turn around will be required to meet the minimum of the 100ft aerial ladder truck that is in service at the Lahaina Fire Station.
3. The water for fire protection and distances from structures will be reviewed at a later date.

If you have any questions, please contact Lt. Scott English at 270-7122.

Sincerely,

Valeriano F. Martin
Captain
Fire Prevention Bureau



May 18, 2004

Capt. Valeriano F. Martin
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaii 96732

Dear Captain Martin:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your May 10, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

The project designers will consult with your department during the design development stage to address road width and turn radius requirements.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

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

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



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

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

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

May 17, 2004

MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM: *for* GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT *Gilbert Coloma-Agaran*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT AND COMMUNITY PLAN
AMENDMENT APPLICATIONS
KAANAPALI PARCEL 10-H RESIDENCES
TMK: (2) 4-4-006:056
EA 2003/0009
CPA 2003/0002

We reviewed the subject application and have the following preliminary comments:

1. Although wastewater system capacity is currently available as of March 18, 2004, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
2. Wastewater contribution calculations are required before building permit is issued.
3. Developer is not required to pay assessment fees for this area at the current time.
4. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

Memo to Michael W. Foley, Planning Director
May 17, 2004
Page 2

5. This project is adjacent to a County of Maui sewage pump station. Developer shall disclose to buyers that odors can be a problem in this vicinity.
6. Plans should show the installation of a single service lateral and advanced riser for each lot.
7. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.
8. Non-contact cooling water and condensate should not drain to the wastewater system.
9. Hold-Harmless Agreement should be executed. Signed agreement required before Wastewater Reclamation Division will give recommendations for final subdivisions approval.
10. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with the building and housing codes. We will review the project for building and housing code requirements during the building permit application process.
11. Maui County Code, Title 18 (Subdivision Ordinance) requirements will be established during the subdivision review/approval process.

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

GSCA:MA:sw
S:\LUCAVALL\PERMITS\SMW\Comments\Kaanapali_Parcel_10H_cg_cp0_sw.wpd



May 18, 2004

Mr. Gilbert S. Coloma-Agaran, Director
Department of Public Works and Environmental Management
200 South High Street
Wailuku, Hawaii 96793
Attention: Milton Arakawa

Dear Mr. Coloma-Agaran:

RE: Kaanapali 10-H Residences
Draft Environmental Assessment and Community Plan Amendment
TMK: (2) 4-4-006:056 Lahaina, Maui, Hawaii.

Thank you for your May 17, 2004 letter in response to the Draft Environmental Assessment and Community Plan Amendment application for the subject project.

The applicant will comply with DPWEM comments during the subdivision review and building permit processes.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Principal Planner

c: Mr. Bob Johnston, Landtec, Inc.
Ms. Kivette Caigoy, Planning Department

APPENDIX N
Meetings with Vintage and Kaanapali Royal Homeowners

LANDTEC, INC.

2530 Kekaa Drive, Suite C-1
Kaanapali, Maui, Hawaii 96761
Phone: (808) 661-3232
Facsimile: (808) 661-1921

March 19, 2004

Dear Kaanapali Royal Neighbor:

Re: Proposed 18-lot residential subdivision on a 7.65 acre site, TMK (2) 4-4-006: 056,
at Kaanapali, Lahaina, Maui, Hawaii.

Landtec, Inc., in partnership with Kaanapali Development Corporation, would like to take this opportunity to invite you to an informational meeting regarding our proposed 18-lot residential subdivision on a 7.65 acre parcel in Kaanapali.

The current property zoning is R-3 Residential District (10,000 square foot minimum lot size), and the current West Maui Community Plan **designation** for the parcel is "Light Industrial" use. The County of Maui requires that the zoning and the Community Plan designations shall be consistent. Therefore, an amendment to the West Maui Community Plan is required. Landtec, Inc. is in the process of submitting an application to amend the current West Maui Community Plan to change the **designation** to "Single Family" residential use. The County process will involve a review by the Maui Planning Commission and final approval by the Maui County Council.

Our informational meeting is scheduled for Thursday, April 8, 2004 at 5:00 p.m. in the Landtec office located at 2530 Kekaa Drive, Suite C-1. Please RSVP by April 5, 2004 to Ms. Darlene Kim or Ms. Charmaine Molina at the office of our planning consultant, Chris Hart & Partners at (808) 242-1955.

Enclosed for your reference is a location map of the project site and our office location. I look forward to seeing you at the meeting.

Sincerely,



Howard S. Kihune, Sr.
President

Encl.

Cc: Chris Hart, Planning Consultant

44008023 0001
GRACE, RAYMOND
2706 SPRECKELS LN
REDONDO BEACH CA 90278

44008023 0002
OKAMOTO, LYNN MASAKO
2560 KEKAA DR #A102
LAHAINA HI 96761

44008023 0003
MONAGHAN, D & E FAMILY TR
MONAGHAN, DONALD H TRS
2560 KEKAA DR, #A-201
LAHAINA HI 96761

44008023 0004
FEDAK, CHARLES ZOLTAN
FEDAK, CHARLES Z/MERI L
8061 DEVRIES LN
LA PALMA CA 90623

44008023 0005
DAIDO KOSAN COMPANY LIMITED
ATTN: YOSHIYUKI MORIGUCHI
1-23-101 ESAKA SUITA
OSAKA 564-0063 JAPAN

44008023 0006
TAYLOR, BOYD TRS
611 METALS BANK BLDG
BUTTE MT 59701

44008023 0007
KARIYA, MASARU
C/O ISLANDS + PLUS #402
3830-6 SAKURADA-CHO
OMACHI-SHI, NAGANO-KEN 398 JAPAN

44008023 0008
KOLONA, DAVID JR
2560 KEKAA DR, #B-101
LAHAINA HI 96761

44008023 0009
O'BRIEN, JAMES A/MARGARET TR
2560 KEKAA DR, #B-102
LAHAINA HI 96761

44008023 0010
MORAGA-KAANAPALI ASSOC
ATTN: GERALD MEYERS
23 KENT CT
MORAGA CA 94556

44008023 0011
CHARLES, WILLIAM THOMAS
838 E CENTRAL AVE
JERSEY SHORE PA 17740

44008023 0012
GYSBERS, HARRIET A Q/P/R TR
GYSBERS, ROBERT G TRS
BOX 226
WAUPUN WI 53963

44008023 0013
VON HELMS, GRETCHEN CHRISTINE
1100 GLORIETTA BLVD
CORONADO CA 92118

44008023 0014
SAMOULIDES, S/J TRUST
C/O STEVE SAMOULIDES
718 SPRING DR
WALNUT CREEK CA 94598

44008023 0014
STERN, RONALD LOUIS
20 WARMWOOD WY
BURLINGAME CA 94010

44008023 0015
CORLEY, WILLIAM GORDON
2560 KEKAA DR, #C-101
LAHAINA HI 96761

44008023 0016
CHAN, ANTHONY/ELLEN
1388 SUTTER ST #730
SAN FRANCISCO CA 94109

44008023 0017
HARRIS FRED J/PAMELA L B
189 WEXFORD RD
VALPARAISO IN 46383

44008023 0018
PATRUCCO, ROBERT J TRUST
PATRUCCO, ROBERT TRS
4200 LONGKNIFE RD
RENO NV 89509

44008023 0019
ASPHALT PAVING CO
14802 W 44TH AVE
GOLDEN CO 80403

44008023 0020
DELZER, CHARLES E ETAL
5809 SEASHORE DR
NEWPORT BEACH CA 92663

44008023 0021
PURE, ROBERT JOEL
PURE, ROBERT J/DIANE
2560 KEKAA DR, #C-303
LAHAINA HI 96761

44008023 0022
SHIBAMOTO HISATAKE
3-11 MIYANOMORI 4-JO
13-CHOME CHUO-KU SAPPO 064 JAPAN

44008023 0023
LEWIS, DAVID/MARGARET TRS
LEWIS, DAVID CO-TTEE ETAL
7328 PARKWOODS DR
STOCKTON CA 95207

14008023 0023
 LEWIS,NATALIE J SURVIVOR'S TR
 LEWIS,NATALIE J TRS
 3452 HAMILTON WAY
 STOCKTON CA 95209

44008023 0024
 COOK,FAMILY TRUST
 COOK,ALLEN R/MARJORIE A TRS
 6028 HEDGECREST CIR
 SAN RAMON CA 94583

44008023 0025
 ESTIN,NORMAN M TR
 200 NOHEA KAI,STE 100
 LAHAINA HI 96761

14008023 0026
 JONES,DONALD S
 JONES,DONALD S/KATHLEEN A
 1110 CHATEAU CT
 ODI CA 95242

44008023 0027
 NELSEN-CUDEIRO,JEFFREY CHARLES
 NELSEN-CUDEIRO,JEFFREY C ETAL
 82 POKANOKET LN
 MARSHFIELD MA 02050

44008023 0028
 TOPPANO, ANGELO S/JUNE A
 7429 SOUTH 128TH STREET
 SEATTLE WA 98178

14008023 0029
 KERR,JAMES/SHELLEY FAMILY TR
 2560 KEKAA DR,#E-101
 AHAINA HI 96761

44008023 0030
 TOHKAI ZISHO INC
 MAUI RESORT MANAGEMENT
 3600-C L HONOAPIILANI RD
 LAHAINA HI 96761

44008023 0031
 HYMAN,HAROLD AARON
 HYMAN,HAROLD AVIVIAN R
 2846 WILLAMETTE ST
 EUGENE OR 97405

14008023 0032
 VAHRENKAMP, JURGEN
 P O BOX 12063
 AHAINA HI 96761

44008023 0033
 RICCITELLI,A.T./MARIE
 69764 CAMINO PACIFICO
 RANCHO MIRAGE CA 92270

44008023 0034
 BARNESON,JOHN L JR/VICKILEE
 4971 LAKERIDGE TERRACE W
 RENO NV 89509

14008023 0035
 KUBOTA,KOZO
 KIMIKO SEKINE
 P O BOX 2026
 KIHEI HI 96753

44008023 0036
 BAGLEY,LAWRENCE MILES
 1315 CRESTRIDGE DRIVE
 OCEANSIDE CA 92054

44008023 0036
 KARLIN,JOEL M
 KARLIN,JOEL M/CAROLINE M
 4905 S ELIZABETH CIR
 ENGLEWOOD CO 80110

14008023 0037
 TERREBONNE, ROBERT A/NANCY
 225 SURFBIRD ISLE
 SAN MATEO CA 94404

44008023 0038
 AMON SOLOMON ETAL
 6729-82ND S E
 MERCER ISLAND WA 98040

44008023 0039
 DELANY,JUNE JACQUELINE TR
 P O BOX 11856
 LAHAINA HI 96761

44008023 0040
 DAIDO KOSAN COMPANY LIMITED
 ATTN: YOSHIYUKI MORIGUCHI
 1-23-101 ESAKA SUITA
 OSAKA 564-0063 JAPAN

44008023 0041
 VIGLIONE,DAVID LAWRENCE
 2560 KEKAA DR,#F-302
 LAHAINA HI 96761

44008023 0042
 GILLOGLY,JAMES
 GILLOGLY,JAMES/MARRIETTA
 10933 WELLWORTH AVE,#5
 LOS ANGELES CA 90024

44008023 0043
 MILLAN, GEORGE B
 645 REDONDO AVE,#302
 LONG BEACH CA 90814

44008023 0044
 SHERWOOD,GREGG EARL
 SHERWOOD,GREGG E/CAROLE E
 11504 KEY WEST N E
 ALBUQUERQUE NM 87111

44008023 0045
 RIST,MARGARET R
 23442 DORIELLE COURT
 LAGUNA NIGUEL CA 92677

44008023 0046
 HAPPY JACK N ETAL
 4500 ROCKHILL TERRACE
 KANSAS CITY MO 64110

44008023 0047
 CAPITOL RESOURCE FUNDING
 510 KING ST STE #501
 ALEXANDRIA VA 22314

44008023 0047
 T G EXCHANGE INC
 C/O FORD, DARLENE
 2560 KEKAA DR G301
 LAHAINA HI 96761

44008023 0048
 VISHANOFF, THOMAS HOWE
 2560 KEKAA DR, #G-302
 LAHAINA HI 96761

44008023 0049
 BECKER, HANS-JUERGEN GERHARD
 11010 SANTA CLARA DR
 FAIRFAX VA 22030

44008023 0050
 COLLEY, GORDON TOWNSEND
 M/M ALEXANDER KLAIB
 1000 BRIGITTE'S PL
 RESCUE CA 95672

44008023 0051
 ARMSTRONG, LUTHER KRISTIAN
 JACKSON, LARRY D ET AL
 8084 BEACON LN
 NORTHVILLE MI 48167

44008023 0052
 MIKLETHUN, RENEE JANELL
 2560 KEKAA DR #H201
 LAHAINA HI 96761

44008023 0053
 STATE & "A" PROPERTIES
 C/O MR. KENNETH GREEMAN, JR.
 P O BOX 299
 OCEANSIDE CA 92049

44008023 0054
 GREENE, FAMILY 1988 TRUST
 19321 WILDFLOWER DR
 PENN VALLEY CA 95946

44008023 0055
 MAPES, FAMILY TRUST-1997
 MAPES, WILLIAM F/LESLIE C TRS
 6860 CALLE TENIA
 CAMARILLO CA 93612

44008023 0056
 OLSSON, SCOTT EDWARD ETAL
 14 WOODSIDE DR
 DANVILLE CA 94506

44008023 0057
 GALLAGHER, JUNE JOY
 C/O BUZICK, JOHN D/SHANNON L
 661 - 207TH AVE NE
 EAST BETHEL MN 55011

44008023 0058
 BECKER, KIMBERLY SUE
 2560 KEKAA DR #J102
 LAHAINA HI 96761

44008023 0059
 CURRIER, RANDOLPH GOODWIN
 1722 MONTANE DR E
 GOLDEN CO 80401

44008023 0060
 KNAACK, GERALDINE I TRUSTEE
 110 BRIARGATE RD
 CARY IL 60013

44008023 0061
 BAINBRIDGE, TRUST
 BECK, RON/JENNIFER ET AL
 1671 HYDE DR
 LOS GATOS CA 95032

44008023 0062
 JASS, MICHAEL BRADLEY
 JASS, MICHAEL B/ANN M
 2560 KEKAA DR, #J-302
 LAHAINA HI 96761

44008023 0063
 HERMAN, ROBERT MARTIN
 HERMAN, ROBERT M/KAYE A
 2560 KEKAA DR, #J-303
 LAHAINA HI 96761

44008023 0064
 BOYD TAYLOR P C P/S TR
 611 METAL BANK BLDG
 BUTTE MT 59701

44008023 0064
 BUTTE ORTHOPEDIC & FRACTURE
 C/O BECKNER, HELEN
 PMB 112, 3350 L HONOAPIILANI
 RD #215
 LAHAINA HI 96761

44008023 0065
CONKLIN,RODNEY/DEBORAH TR
CONKLIN,RODNEY/DEBORAH TRS ETAL
245 HILLSDALE WAY
REDWOOD CITY CA 94062

44008023 0066
MCSWEENEY,TRUST
MCSWEENEY,WILLIAM V TRS ETAL
2560 KEKAA DR K-201
LAHAINA HI 96761

44008023 0067
GOLDFLAM SHELDON L ETAL
718 N WALDEN DR
BEVERLY HILLS CA 90210

44008023 0068
616716 ALBERTA LTD
BOX 1478-513 BANFF
ALBERTA,TOLOCO CANADA

44008023 0069
KRELL,FAMILY LIVING TRUST
599 PROSPECT BLVD
PASADENA CA 91103

44008023 0070
DUCKWORTH,DOUGLAS ROBERT
DUCKWORTH,DOUGLAS/PRISCILLA
15833 FETLOCK LN
CHINO HILLS CA 91709

44008023 0071
PROKUSKI,LEON MARTIN
PROKUSKI,LEON M/ELNORA
2560 KEKAA DR,#L-101
LAHAINA HI 96761

44008023 0072
ANDERSON,PEPPER
FULFER,BRENDA M ET AL
11650 NEW HOPE
STAR ID 83669

44008023 0073
CARLSON,FAMILY TRUST
4052 HWY 97A
CHELAN WA 98816

44008023 0074
THORP,DONALD KEVIN
4773 TRENTON COURT
LONG GROVE IL 60047

44008023 0075
ONISHI,FUMITAKA
1230 N HORN AVE 620
WEST HOLLYWOOD CA 90069

44008023 0076
MADDIGAN,ARTHUR G II TR
MADDIGAN,ARTHUR G II TRS
436 CRATER RD
KULA HI 96790

44008023 0077
LONDYNSKY,PAUL A
LONDYNSKY,PAUL A/BETHANN K
30 SHAWN CT
ALAMO CA 94507

44008023 0078
BURGEMEISTER WILLIAM/PAT
9401 WORDSWORTH WAY APT
205
OWINGS MILLS MD 21117

44008023 0079
WADDELL WALLACE R/FRANCIS C
2560 KEKAA DR M102
LAHAINA HI 96761

44008023 0080
LOERS LLOYD D TRUSTEE
1709 SO SHORE DRIVE
CLEAR LAKE IA 50428

44008023 0081
CHAN,ANTHONY YIU WING
CHAN,ANTHONY Y W/ELLEN D
1388 SUTTER ST #730
SAN FRANCISCO CA 94109

44008023 0082
EBERT,MICHAEL LAVRENCE
4-26-1-709 KAMISHINDEN
TOYONAKO-SHI,OSAKA JAPAN

44008023 0083
NATIONAL DOLLAR STORES LTD
929 MARKET ST
SAN FRANCISCO CA 94101

44008023 0084
MOREHOUSE,JAMES E TRUST
680 DUNBARTON
BARRINGTON IL 60010

44008023 0085
LAMBERT,WILLIAM DAVID
24 LIVE OAK WY
DANVILLE CA 94506

44008023 0086
HESS,CONSTANCE M TR
P O BOX 905
MC PHERSON KS 67460

44008023 0087
MOSKOWITZ,FAMILY TRUST
MOSKOWITZ, ALAN/HELENE
3918 ARCH DALE RD
ENCINO CA 91436

44008023 0088
GRAYBILL,JAMES LLOYD
2560 KEKAA DR #N202
LAHAINA HI 96761

44008023 0089
O T B TIME HOLDINGS INC
C/O BUTLER & COMPANY
923 WEST 8TH AVE
VANCOUVER BC V5Z 1E4 CANADA

44008023 0090
MATTSON DALE W
2560 KEKAA DR N302
LAHAINA HI 96761

44008023 0091
FLINT,WILLIAM D/ANN C TR
187 RIVIERA DR
SAN RAFAEL CA 94901

44008023 0092
MARTIN PETER K ETAL
590 A OLD STABLE RD
PAIA HI 96779

44008023 0093
APPLEGATE,HARVEY JON
APPLEGATE,HARVEY J/CORNELIA L
2560 KEKAA DR,#P-102
LAHAINA HI 96761

44008023 0094
MCKENZIE, E W/GENEVIEVE
P O BOX 1209
RENO NV 89504

44008023 0095
TRUJILLO,WILLIAM PATRICK
TRUJILLO,WILLIAM P ETAL
3078 MIDDLETON ST
OAKLAND CA 94605

44008023 0096
BOUNDS,SHARON LAVER
C/O HELEN BOUNDS
P.O. BOX 1547
TORRANCE CA 90505

44008023 0097
ISLAND INVESTMENTS LTD TR
1059 ALAMEDA, #113
BELMONT CA 94002

44008023 0098
WISNIEWSKI, KENNETH J SR/L F
40424 N DEEP LAKE RD
ANTIOCH IL 60002

44008023 0099
SARIBAY,VICTOR SUNIO
2560 KEKAA DR,#Q-101
LAHAINA HI 96761

44008023 0100
LUM,LEANN KAPILIALOHA
VANGHAGEN,KJELL M
BOX 5091
SNOWMASS VILLAGE CO 81615

44008023 0101
YANG,PAUL PO-TSANG
10008 RALEIGH ST
WESTMINSTER CO 80031

44008023 0102
BROWN,WILLIAM FREDERICK
P O BOX 11539
LAHAINA HI 96761

44008023 0103
O'BRIEN,JANET LEE
P O BOX 481
HOLLISTER CA 95024

44008023 0104
SMITH,MICHAEL ALLAN
301 SHIROGANA II
3-39-7-301 EBISU
SHIBUYA-KU, TOKYO 150-0013 JAPAN

44008023 0105
VALLEJO,DEBORAH ROSE
VALLEJO,DEBORAH R ETAL
6669 EMBARCADARO DR,#20
STOCKTON CA 95219

LANDTEC, INC.

2530 Kekaa Drive, Suite C-1
Kaanapali, Maui, Hawaii 96761
Phone: (808) 661-3232
Facsimile: (808) 661-1921

March 19, 2004

Dear Vintage Homeowner:

Re: Proposed 18-lot residential subdivision on a 7.65 acre site, TMK (2) 4-4-006: 056,
at Kaanapali, Lahaina, Maui, Hawaii.

Landtec, Inc., in partnership with Kaanapali Development Corporation, would like to take this opportunity to invite you to an informational meeting regarding our proposed 18-lot residential subdivision on a 7.65 acre parcel in Kaanapali.

The current property zoning is R-3 Residential District (10,000 square foot minimum lot size), and the current West Maui Community Plan designation for the parcel is "Light Industrial" use. The County of Maui requires that the zoning and the Community Plan designations shall be consistent. Therefore, an amendment to the West Maui Community Plan is required. Landtec, Inc. is in the process of submitting an application to amend the current West Maui Community Plan to change the designation to "Single Family" residential use. The County process will involve a review by the Maui Planning Commission and final approval by the Maui County Council.

Our informational meeting is scheduled for Wednesday, April 7, 2004 at 5:00 p.m. in the Landtec office located at 2530 Kekaa Drive, Suite C-1. Please RSVP by April 2, 2004 to Ms. Darlene Kim or Ms. Charmaine Molina at the office of our planning consultant, Chris Hart & Partners at (808) 242-1955.

Enclosed for your reference is a location map of the project site and our office location. I look forward to seeing you at the meeting.

Sincerely,



Howard S. Kihune, Sr.
President

Encl.

Cc: Chris Hart, Planning Consultant

44006055 01
NORRIS,CLAIRE B & ANNE S-TTEES
101 KUALAPA PL
LAHAINA, HI 96761

44006055 02
WONG, HASTING S & JOSEPHINE N
25932 VINEDO LANE
LOS ALTOS HILLS, CA 94022

44006055 03
JOHNSTON, GEORGE R &
VAS-JOHNSTON, CHERYL A
103 KUALAPA PL
LAHAINA, HI 96761

44006055 04
BACHMAN, ROBERT C JR.
P O BOX 10513
LAHAINA, HI 96761

44006055 05
KOONTZ, CLYDE & SYDNA
7502 88TH AVE SW
LAKEWOOD, WA 98498

44006055 06
WALL, ROBERT M & SHIRLENE
10462 DIMPLE DELL RD
SANDY, UT 84092

44006055 07
READ, AARON L & KATHLEEN K
3390 HOLLY DR
SACRAMENTO, CA 95864

44006055 08
VINTAGE 8, LLC
C/O EJ FOERSTER
1299 OCEAN AVE #333
SANTA MONICA, CA 90401

44006055 09
PIPER, ROBERT & BARBARA-TTEES
25135 E PLYMOUTH CIRCLE
AURORA, CO 80016

44006055 10
OLD REPUBLIC EXCHANGE FAC CO
C/O MR RICHARD PEACOCK
499 WESTGATE DRIVE
NAPA, CA 94558

44006055 11
READ, AARON L & KATHLEEN K
3390 HOLLY DR
SACRAMENTO, CA 95864

44006055 12
SATTEWHITE, JOHN A & MARY C
SATTEWHITE, JAY A
800 ASH ST
PHILLIPS, WI 54555

44006055 13
WESTON, DONALD R & DIANE E
130 OLD STAGE ROAD
ESSEX JUNCTION, VERMONT 05452

44006055 14
TABOR, SUSAN
1107 1ST AVENUE, STE 903
SEATTLE, WA 98101

44006055 15
STRONG, STEVEN B & M MARGARET
1189 TWIN PEAKS CIRCLE
LONGMONT, CO 80503

44006055 16
BOONSTRA, JAMES
P O BOX 10355
LAHAINA, HI 96761

44006055 17
HALPIN, JEFFREY G & KATHLEEN A
117 KUALAPA PL
LAHAINA, HI 96761

44006055 18
SURREY INVESTMENT, LLC
650 S CHERRY CREEK #920
DENVER, CO 80246

44006055 19
KOVECSES, GEZA & PATRICIA M
529 N EDDINGTON DR
ORANGE, CA 92869

44006055 20
WHITMAN, CARLA M
120 KUALAPA PL
LAHAINA, HI 96761

44006055 21
BRACKETT, NORMAN E & CAROLYN A
13 PILLSBURY DRIVE
SCARBOROUGH, ME 04074

44006055 22
THOMPSON, ROBERT M-TTEE
122 KUALAPA PL
LAHAINA, HI 96761

44006055 23
EDWARDS, STEVEN A-TTEE
107 DIANA DRIVE
DICKSON, TN 32055

44006055 24
HOGAN, EDWARD J III-TTEE &
HOGAN, MARYANNE B-TTEE
124 KUALAPA PL
LAHAINA, HI 96761

44006055 25
VICKERS, GERALD E-TTEE
1950 MCCLEAN BLVD
EUGENE, OR 97405

44006055 26
ERK, KAYA-TTEE
139 HARDING AVE
LOS GATOS, CA 95030

44006055 27
DESILETS, JOHN
127 KUALAPA PL
LAHAINA, HI 96761

44006055 28
WINKLER, PAUL N
2862 VICTORIA RIDGE COURT
PLEASANTON, CA 94566

44006055 29
MOORE, WILLIAM E-TTEE
7415 S W FAIRWAY LOOP
WILSONVILLE, OR 97070

44006055 30
YORK, JOYCE M-TTEES
4950 E PALOMINO RD
PHOENIX, AZ 85018

44006055 31
LEHMAN, DONALD & PAMELA-TTEES
131 KUALAPA PL
LAHAINA, MAUI HI 96761

44006055 32
ROCKWELL, MELINDA A &
STEINMARK, SHAN W
132 KUALAPA PL
LAHAINA, HI 96761

44006055 33
STENNER, ROBERT DEAN
133 KUALAPA PL
KAANAPALI, HI 96761

44006055 34
WONG, BARBARA & RICHARD-TTEES
70 DRYDEN AVE
PAWTUCKET, RI 02860

44006055 35
BOYNTON, HERBERT & DONNA-TTEES
6266 CAMINO DE LA COSTA
LA JOLLA, CA 92037

44006055 36
ESCUADERO, MARK J
1242 MARLOW ROAD
SANTA ROSA, CA 95401

44006055 37
MOTELAWSKI, JOHN C & TRACY W
137 KUALAPA PL
LAHAINA, HI 96761

44006055 38
GRIEVE, PETER M & TRUDY M
138 KUALAPA PL
LAHAINA, HI 96761

44006055 39
QUINN, JEFFREY J & BARBARA R
P O BOX 484
APPLEGATE, CA 95703

44006055 40
ESTIN, NORMAN M-TTEE
200 NOHEA KAI, #100
LAHAINA, HI 96761

44006055 41
JOHNSON, LYMAN E JR-TTEE
P O BOX 6242
CARMEL, CA 93921

44006055 42
CROOKS, REBECCA A & TYANNA M
14592 PRAIRIEGRASS DR
PRIOR LAKE, MN 55372

44006055 43
BALOG, JOHN F & LOIS D
143 KUALAPA PL
LAHAINA, HI 96761

44006055 44
AVERCH, VERNER & LINDA
6201 CHARRINGTON DRIVE
ENGLEWOOD, CO 80111

44006055 45
BERNSTEIN, KENNETH & JENNIFER
1834 SMOKE BELLEW RD
LIVERMORE, CA 94550

44006055 46
MCLAUGHLIN, MICHAEL W & SALLY A
410 PINE ST
MILL VALLEY, CA 94941

44006055 47
MYERS, THOMAS O & PATRICIA E
P O BOX 997
PORT ORCHARD, WA 98366

44006055 48
VAN ERT, LARRY V & JANET M
7406-37TH AVE
MOLINE, IL 61265

44006055 49
BERGSON, RICHARD C & GAIL LINN
149 KUALAPA PLACE
LAHAINA, HI 96761

44006055 50
MERCHASIN, MARCUS & ELIZABETH
225 BUSH ST #16TH FLR
SAN FRANCISCO, CA 94104

44006055 51
ZIMMERMANN, HANS & EVA-TTEES
P O BOX 516
LAHAINA, HI 96767

44006055 52
JACKSON, HERBERT D
152 KUALAPA PL
LAHAINA, HI 96761

44006055 53
KERRIGAN, TIMOTHY E & MARY J
153 KUALAPA PL
LAHAINA, HI 96761

44006055 54
PODESTA, EDWARD L
P O BOX 10910
LAHAINA, HI 96761

44006055 55
READ, AARON L & KATHLEEN K
3390 HOLLY DRIVE
SACRAMENTO, CA 95864

44006055 56
BEZANE, NORMAN G-TTEE
2609 N SOUTHPORT
CHICAGO, ILLINOIS 60614

44006055 57
BEATTIE, RALPH A
14160 DALLAS PKWY #300
DALLAS, TX 75254

44006055 58
LJUBISAVLJEVIC, LJUBODRAG
2511 E TIFFANY LN
SACRAMENTO, CA 95827

44006055 59
HILL, THOMAS M & LISA A-TTEES
159 KUALAPA PL
LAHAINA, HI 96761

44006055 60
FINNERTY, WILLIAM J & JUDITH M
18914 LAS VISTAS
SAN ANTONIO, TX 78258

44006055 61
CAUBET, JOSE A & CATHERINE E
161 KUALAPA PL
LAHAINA, HI 96761

44006055 62
VICKERS, GERALD E-TTEE
1950 MCLEAN BLVD
EUGENE, OR 97405

44006055 63
HARRIS, JAMES M &
MISCHELLE M LAWRENCE
163 KUALAPA PLACE
LAHAINA, HI 96761

44006055 64
REE, TERRY
107 BLUEGRASS CIR
HENDERSONVILLE, TN 37055

44006055 65
MILLAR-VANPOUCKE, LINDA J-TTEE
L MILLAR-VANPOUCKE TRUST
165 KUALAPA
LAHAINA, HI 96761

44006055 66
DUNNION, THOMAS & ELLEN
P O BOX 1279
PEBBLE BEACH, CA 93953

44006055 67
WEISS, GARY M & ELAINE P
167 KUALAPA PL
LAHAINA, HI 96761

44006055 68
JUREK, TIMOTHY & DEBORAH-TTEES
1345 E 29TH ST
TULSA, OK 74114

44006055 69
GRUBB, ALBANY D & TANYA D-TTEES
P O BOX 30065
WALNUT CREEK, CA 94598

44006055 70
ANDERSON, HELEN GEIS
212 E SCENIC DRIVE
MONROVIA, CA 91016

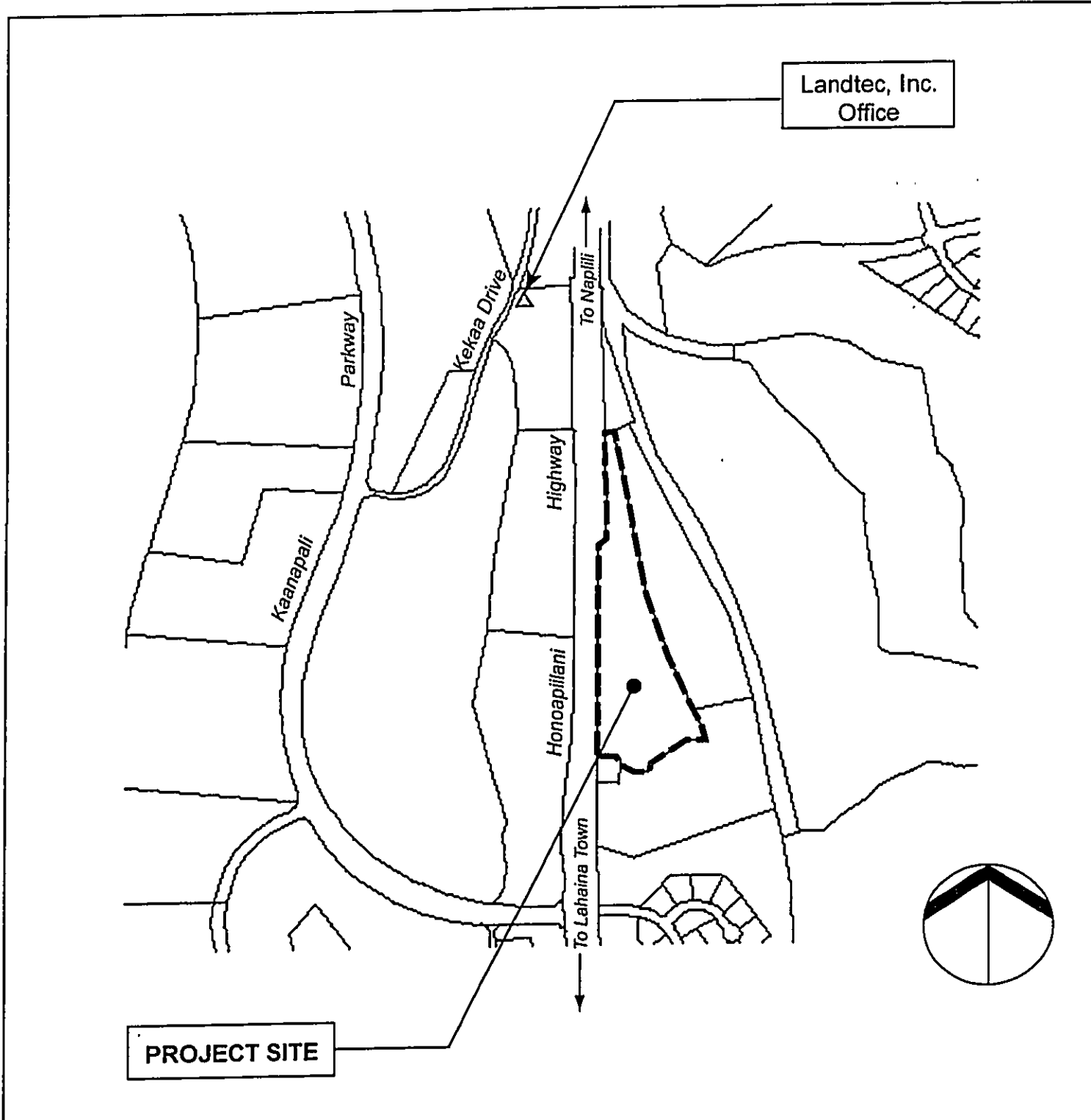
44006055 71
FREEDMAN, RICHARD J
PO BOX 21117
SEDONA, AZ 86341

44006055 72
DOUGLAS, GLEN H & SUZANNE K
172 KUALAPA PLACE
LAHAINA, HI 96761

VINTAGE200403

Page 4

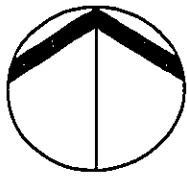
14006055 73
GEORGE, PETER M & PAMELA P
4471 L HONOAPIILANI ROAD
LAHAINA, HI 96761



PROJECT SITE

**Landtec, Inc.
Office**

LOCATION MAP
Tax Map Key: 4-4-006:056
& Landtec, Inc. Office



KAANAPALI PARCEL 10-H RESIDENCES



KAANAPALI 10-H PRESENTATION
The Vintage - April 7, 2004

SIGN-IN SHEET
Please fill in your name and mailing address

- | | | | |
|-----|--|-----|-------|
| 1) | <u>T. GRIEVE</u> | 14) | _____ |
| | <u>138 Kualapa Place</u> | | _____ |
| | <u>Lahaina, HI</u> | | _____ |
| 2) | <u>Tom Hill 661-1372</u> | 15) | _____ |
| | <u>159 Kualapa Place</u> | | _____ |
| 3) | <u>Jiff Harris 667-111</u> | 16) | _____ |
| | <u>117 Kua + Ala</u> | | _____ |
| 4) | <u>Robert Bachman 104 Vintage</u> | 17) | _____ |
| | _____ | | _____ |
| 5) | <u>Shen Suzanne Douglas</u> | 18) | _____ |
| | <u>172 Vintage</u> | | _____ |
| 6) | <u>Bill Moore</u> | 19) | _____ |
| | <u>129 Kualapa</u> | | _____ |
| 7) | <u>Joyce York, Elizabeth</u> | 20) | _____ |
| | <u>Coastal</u> | | _____ |
| | <u>130 Kualapa</u> | | _____ |
| 8) | <u>Aaron + Cathi Read</u> | 21) | _____ |
| | <u>102, 111, 155 Kualapa</u> | | _____ |
| 9) | <u>Linda + Don Varpivick</u> | 22) | _____ |
| | <u>165 Kualapa Pl.</u> | | _____ |
| 10) | <u>Juni Harris + Michelle Lawrence</u> | 23) | _____ |
| | <u>163 Kuelapua Pl.</u> | | _____ |
| 11) | <u>JAMES L. PATRICK.</u> | 24) | _____ |
| | <u>125 KUALAPA PL</u> | | _____ |
| 12) | <u>NORM GEORGE</u> | 25) | _____ |
| | <u>3024 GEORGE</u> | | _____ |
| | <u>156 KUAHAPA</u> | | _____ |
| 13) | _____ | 26) | _____ |
| | _____ | | _____ |

KAANAPALI 10-H PRESENTATION
Kaanapali Royal - April 8, 2004

SIGN-IN SHEET

Please fill in your name and mailing address

- | | | | |
|-----|--|-----|-------|
| 1) | <u>Laura McSwain</u>
2560 Kekae Dr
Lahaina, HI 96761 | 14) | _____ |
| 2) | <u>Scott Hull</u>
Mount with Mount Fitts | 15) | _____ |
| 3) | <u>Mount with</u>
Mount Fitts
288 Waikele Place, Waikele | 16) | _____ |
| 4) | _____ | 17) | _____ |
| 5) | _____ | 18) | _____ |
| 6) | _____ | 19) | _____ |
| 7) | _____ | 20) | _____ |
| 8) | _____ | 21) | _____ |
| 9) | _____ | 22) | _____ |
| 10) | _____ | 23) | _____ |
| 11) | _____ | 24) | _____ |
| 12) | _____ | 25) | _____ |
| 13) | _____ | 26) | _____ |