ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

October 3, 2003

Honorable Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813-2437

Dear Mr. Salmonson:

Re: Final Environmental Impact Statement for Maui Ocean Club Sequel Project

At its meeting of August 28, 2003, the Maui Planning Commission voted to accept the Final EIS prepared for the Maui Ocean Club Sequel Project. The Maui Planning Commission respectfully request publication of the Final Environmental Impact Statement (FEIS) in the October 23, 2003, OEQC Environmental Notice.

Attached please find the following items:

Four copies of the FEIS
Completed Publication Form
Completed FEIS Distribution Cover Letter to the participants
Completed FEIS Distribution List

Should you require further clarification, please contact Mr. Joseph W. Alueta, Staff Planner, of this office at (808) 270-7735

Sincerely,

Mike Foley

Michael W. Foley
Planning Director

MWF:JWA:sle
Enclosures
c: General File
Clayton I. Yoshida, AICP, Planning Administrator
Joseph W. Alueta, Staff Planner
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2003 FEIS MAUI
MAUI OCEAN CLUB SEQUEL PROJECT
1 OF 2

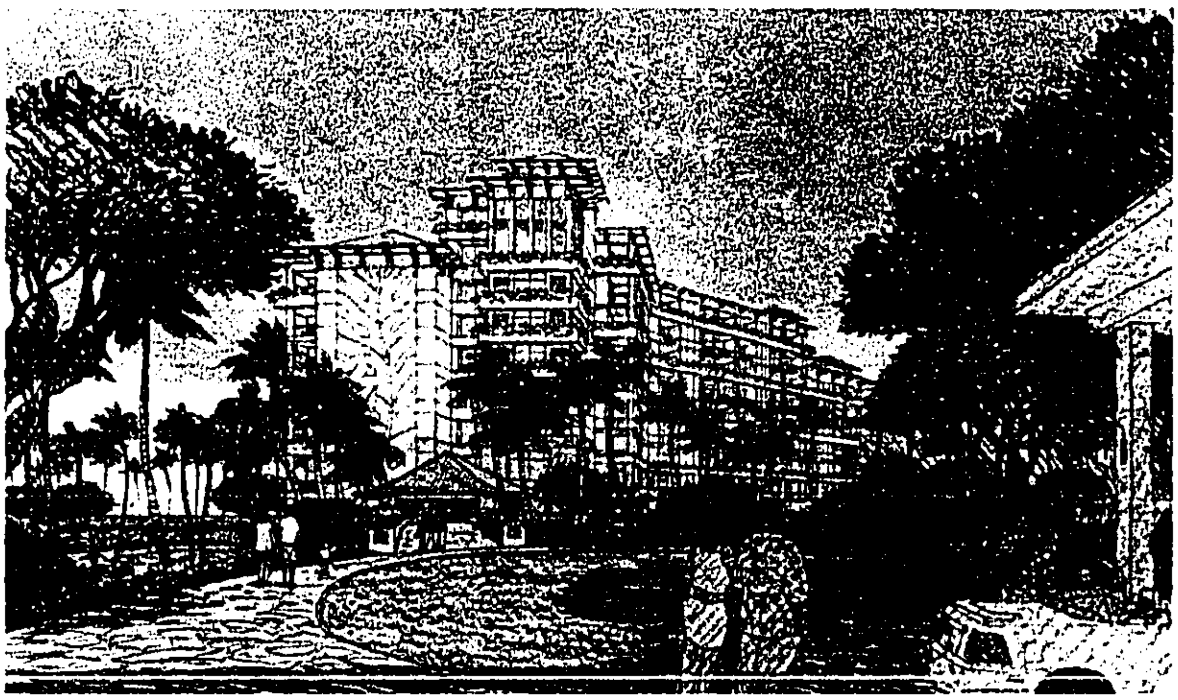
FINAL ENVIRONMENTAL IMPACT STATEMENT

In support of a
Special Management Area Permit

Maui Ocean Club Sequel Project

Part 1 of 2

MARRIOTT RESORT • KAANAPALI • MAUI • HAWAII



CHRIS HART
& PARTNERS, INC.

JULY 08 2003

CHRIS HART & PARTNERS, INC.

Dear Reader:

Attached for your review is a Final Environmental Impact Statement (FEIS) for the Maui Ocean Club Sequel Project. This document has been prepared pursuant to the EIS law (Hawaii Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200).

The title of the project is: Maui Ocean Club Sequel Project

Location:	Island	Maui	Type of Action:	Agency Action
	District	Lahaina		Applicant Action X

Tax Map Key Numbers: (2) 4-4-013:001

Applicant

MVCI, care of
Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, HI, 96793
Att: Mr. Chris Hart
Phone: (808) 242-1955/Fax: (808) 242-1956

Accepting Agency

Maui Planning Department/ Maui Planning Commission
250 South High Street
Wailuku, HI, 96793
Phone: (808) 270-7735
Contact: Mr. Joe Alueta, Staff Planner

In order to compare this document to the Draft EIS, significant additions and corrections made to the text of the Draft EIS are underlined. Where previous text is to be replaced or omitted, it will be ~~striked out~~.

(Cover art provided by Group 70 International, Inc.)

If you no longer need this EIS, please recycle it.
Thank you for your participation in the EIS process!

FINAL ENVIRONMENTAL IMPACT STATEMENT

Maui Ocean Club Sequel

MARRIOTT RESORT • KAANAPALI • MAUI • HAWAII

Prepared for:

Maui County Planning Department/ Maui Planning Commission
(Accepting Agency)

and

Marriott Vacation Club International
(Owner)

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

This Document has been prepared under my direction pursuant to the requirements of Chapter 343, Hawaii Revised Statutes.

Applicant ______________________ 7/8/03
Steve Busch, Regional Vice President Date
Construction and Development
Marriott Vacation Club International

JULY 08 2003

SUMMARY

Applicant	Marriott Vacation Club International (MVCI)
Accepting Agency	Maui County Planning Department /Maui Planning Commission
Property	(TMK (2) 4-4-13:01) A 15.9 acre oceanfront parcel located at 100 Nohea Kai Drive, Ka`anapali Beach Resort, Lahaina, Maui, Hawaii.
Action:	Marriott Vacation Club International (MVCI) is proposing the expansion of the existing Maui Ocean Club (MOC) Resort. The proposed project consists of the addition of two new 12-story villa unit buildings for vacation ownership, parking structures, site amenities, and landscaping. Work will also entail demolition of the existing on grade parking, tennis courts, ballroom, luau facility, and parking garage. The project will dramatically increase the amount of landscape planted open space along the shoreline.

In 2000, MVCI began converting the units of the 720-room (720 key) Maui Marriott Hotel into a 312-unit (441-key) timeshare facility known as the "Maui Ocean Club". The proposed "Sequel" addition will add ~~146~~ 143 units (276 keys).

The visitor population of the project has been decreasing with the conversion of the Hotel to a Timeshare (the Maui Ocean Club Project), and is projected to increase back to previous levels (about 1450 guests) with the addition of new units (the Sequel Project). Fluctuations in guest count under the timeshare model are in the range of +/- 50 persons, while historical seasonal fluctuations of the Hotel period were around +/- 200 guests.

~~Maui Ocean Club Maximum Use 1970-2008~~	~~"Maui Marriott" Hotel Period~~	~~"Maui Ocean Club" Hotel->Timeshare Conversion~~		~~"Sequel" Timeshare Addition~~	~~Total Combined Timeshare~~
		~~Now~~	~~Completion~~		
	~~*1970-2000*~~	~~*2002*~~	~~*2005*~~	~~*as of 2008*~~	~~*2008-[illegible]*~~
~~*Total Units*~~	~~720~~	~~545~~	~~312~~	~~146~~	~~458~~
~~*Total Keys*~~	~~720~~	~~584~~	~~446~~	~~292~~	~~738~~
~~*Max Guest Parties*~~	~~720~~	~~553~~	~~339~~	~~175~~	~~514~~
~~*Max Guests*~~	~~1800~~	~~1444~~	~~1017~~	~~604~~	~~1621~~

(The table above has been replaced with Table 1)

Impacts

The project will result in both beneficial and adverse impacts.

Construction of the project will cause short-term adverse ~~nuisance~~ impacts regarding noise, vibration, air quality, and traffic inconveniences. Construction will be phased over a 34-month period. Noise impacts will be greatest during construction of the project foundations, which are estimated to take 6-8 weeks per building.

Short-term benefits include benefits to the economy in terms of construction expenditures (~$92M), construction wages (~$51M) and marketing jobs (~120) associated State revenues (~$14.9M).

Long-term adverse impacts include a marginal increase in demand for public services and housing.

Long-term effects include changes to the visual character of the project site, which will have different, and subjective impacts to the public and adjacent landowners.

Long-term beneficial impacts include new onsite jobs (~88), increased County revenues (~$.5M/yr) and improved open space resources along the shoreline area of the project site.

Mitigation Measures

Proposed Mitigation measures aimed at reducing potential short-term impacts due to construction include:

- Installation and maintenance of dust/silt containment fences around project work areas (air/water quality)
- Watering and/or re-vegetating bared areas (air/water quality)
- Covering truck loads (air/water quality)

- Using non-potable water for dust control and irrigation (water conservation)
- Siting the project away from natural hazards (water quality, coastal processes, flood)
- Siting the project away from sensitive receptors (noise)
- Limiting hours of work (noise)
- Using mufflers on construction equipment (noise)
- Using quieter pile-driving methodologies, including hydraulic pile drivers and pre-drilling
- Coordinating construction with seasonal drop-offs (economics)

~~Potential mitigation measures under consideration include:~~
- ~~Utilizing alternative foundation construction methods (noise)~~

Proposed Mitigation measures aimed at reducing potential long-term impacts include:
- Siting the project away from natural hazards (water quality, coastal processes, flood)
- Retaining additional drainage flows on site (water quality)
- Siting the project improvements away from the shoreline (Public visual resources)
- Designing the building to be compatible with the existing Resort skyline (Public visual resources)
- Project massing considerations, strategic building placement, and architectural detailing (Public/Private visual resources)

Alternatives

Significant effort was expended in developing different design alternatives that obtain nearly the same objectives but change degree of (Private) view impacts to the adjacent landowners (the Ka`anapali Ali`i residential condominium in particular). Changes to the site design are documented in ~~Figure 16~~ Section II-C and Appendices O &P.

Other types of options considered including postponing the action, no action, locating the project elsewhere, and developing different types of improvements. These options were rejected in part because they did not offer the applicant the desired outcome, and also because the existing property is particularly suited for the proposed development in terms of zoning entitlements, resort master planning, and existing infrastructure.

Unresolved Issues

Unresolved issues are invariably associated with projects in the planning and design stages. Consequentially, the planning process, which includes this Environmental Impact Statement, attempts to identify these issues and to develop appropriate mitigative measures.

- The conceptual plan and detailed design features of the project remain to be finalized and may undergo revision based on responses to public input and to conform to applicable permits and other requirements.
- A number of permits and approvals will be required prior to construction of the project.
- Although recent test trenching of the project sites has discovered no cultural materials or layers, the potential for discovery of cultural materials exists during ground disrupting construction activities
- Confirmations of County utility service availability are not granted before the project submits for building permits.
- Appropriate or applicable Best Management Practices (BMP) to reduce and control the discharge of dust and sediment from the construction activities will be determined during the National Pollutant Discharge Elimination System (NPDES) permit application process
- The extent of indirect construction impacts cannot be fully predicted

Required Permits

The project requires the following permits and approvals:

- Special Management Area Use Permit (State)
- NPDES (State)
- Noise Permit (State)
- Building Permits (County)
- Grading Permit (County)
- Resort Design Approval (private)

Applicable Controls

The project has the following Land Use designations:

Urban	State Land Use District
H2-Hotel	County Zoning
Hotel	West Maui Community Plan Designation

The project is compatible with the following restrictions established for the H-2 (High Density) Hotel Zoning

Category	Zoning Restriction	Proposed
Height	12-story	~~10~~ 12-story
Lot Coverage	35%	28%
FAR	150%	130%

The project is also subject the review under Hawaii's Coastal Zone Management Act (Chapter 205A HRS). The project is generally consistent with the goals, objectives, and policies of established for development in the Coastal Zone.

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I. INTRODUCTION

A. PURPOSE AND NEED FOR THE REQUEST

Marriott Vacation Club International (MVCI) is proposing construction of 143 purpose-built timeshare suites, a upgrade the quality and amenities of its Maui Ocean Club Resort located in Ka`anapali Maui. The project entails a redesign of the project site, including the construction of two new guestroom buildings, new parking facilities, and pool amenities. *The purpose of the project is to provide a new form of accommodations* in response to the demand of the existing vacation club market and the evolving worldwide visitor industry. The existing resort was designed for a different type of visitor market over 25 years ago, and does not reflect the preferences of the modern visitor who chooses to stay for longer periods and in larger parties.

The subject property is identified as TMK (2) 4-4-013: parcel 001 and is located at 100 Nohea Kai Drive, Ka`anapali Maui. Existing development includes a 10 story building that contains the guestrooms, lobby, ballrooms and restaurants, and associated features including: parking lots, a parking garage, tennis courts, and recently redeveloped pool and luau facilities. The primary structures were constructed in 1979 as a 720-room Hotel and are currently undergoing conversion to 312-room timeshare resort as part of a renovation initiated in 2000 as the "Maui Ocean Club".

B. REGULATORY CONTEXT

Trigger. This Environmental Impact Statement (EIS) has been prepared to describe and analyze the impacts associated with this project and will be submitted in conjunction with the application for a Special Management Area (SMA) Permit. The preparation and processing of the EIS has been in accordance with the Hawaii's Environmental Assessment Law, Chapter 343, Hawaii Revised Statutes (HRS), and Chapter 200, Hawaii Administrative Rules, the Environmental Impact Statement Rules. "Use of the shoreline area" is the regulatory trigger, which makes the project subject to the Environmental Assessment Law.

Funding. The project will be funded privately. No State or County lands or funds are designated for the action.

Objectives. The project is an applicant action rather than a project proposed by a government agency. The objectives of the project are:

- To develop a high-quality residential (timeshare) asset on the subject property
- To enhance the overall quality of the project site
- To enhance the more natural features in the shoreline area
- To design and develop the project in a manner which minimizes adverse social, economic, and environmental impacts to the degree practical

C. IDENTIFICATION OF THE APPLICANT

Owner/Applicant:

Marriott Vacation Club International
Construction and Development
Hawaii Regional Office
1001 Kamokila Blvd, Suite 202
Kapolei, HI 96707
Phone (808) 742-8850/ Fax (808) 742-6368
Contact: Mr. Steve Busch

D. PROJECT DEVELOPMENT TEAM

Architecture:

Group 70 International Inc.
925 Bethel Street, 5th Floor
Honolulu HI 96813
Phone (808) 523-5866/ Fax (808) 523-5874
Contact: Mr. Norman Hong

Civil Engineering:

Warren S. Unemori Engineering Inc.
Wells Street Professional Center
2145 Wells Street, Suite 403
Wailuku, Maui, Hawaii 96793
Phone (808) 871-2653/ Fax (808) 871-4348
Contact: Mr. Warren S. Unemori

Land Use:

Chris Hart & Partners, Inc.
Landscape Architecture and Planning
1955 Main Street
Wailuku, Maui, Hawaii 96793
Phone: (808) 242-1955/ Fax (808) 242-1956
Contact: Mr. Christopher L. Hart

E. ACCEPTING AGENCY

Accepting Agency:

The Maui Planning Commission /
Maui Planning Department
County of Maui
250 South High Street
Wailuku HI 96793
Phone (808) 270-7735
Contact: Mr. Joe Alueta, Senior Staff Planner

II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. HISTORICAL BACKGROUND OF THE PROJECT

The Ka`anapali Beach Resort is located on the west coast of the island of Maui, about three miles north of Lahaina. The resort is a 1,200-acre planned resort community that was conceived in the early 1950's and commenced in 1958 with the construction of a water system, sewage treatment plant, drainage system and a network of roadways.

The Resort is more than forty years old and currently includes six hotels with over 3,700 rooms, six residential condominium developments, a shopping center/whaling museum, and two 18-hole golf courses. Ka`anapali Beach Resort is Maui County's first and perhaps most successful resort destination area. For the past fifteen years, many of the Resort owners have sought to upgrade and enhance the image of their properties in response to competition from on-island resort destination areas including Wailea, Makena, and Kapalua, as well as an evolving worldwide visitor industry. Projects within the Ka`anapali resort that have undergone renovations and additions include the Whalers Village Shopping Center, the Ka`anapali Beach Hotel, the Sheraton Maui Hotel, and the Westin Hotel.

The subject property is a 15.9 acre oceanfront parcel (TMK 4-4-13:01) within the Ka`anapali Beach Resort. The property abuts Ka`anapali Beach at Hanaka`ō`ō Point. The adjacent property to the south is the site of the Hyatt Regency Hotel and abutting the north boundary is the Ka`anapali Ali`i residential condominium. These shoreline parcels are approximately 1500 feet seaward of Honoapi`ilani Highway and are separated from the roadway by a golf course and parking facilities. Automobile access to these Resort properties from the Honoapi`ilani Highway is via roads owned and maintained by the resort, Ka`anapali Parkway, and Nohea Kai Drive. *(See Figures 1-5 for the location of the project and existing conditions)*

The subject property is the current site of the "Maui Ocean Club", a (timeshare) vacation resort operated by Marriott Vacation Club International (MVCI). MVCI obtained permits and began converting the original (1979) 720-unit Maui Marriott Hotel into a

312-unit resort in 2000. Approximately half of the hotel units have been converted as of the date of this report.

A breakdown of historical and proposed unit counts is included in Table 1. Construction details on the ongoing conversion are included in Appendix A.

B. LAND USE DESIGNATIONS

The project area has the following land use designations:

State Land Use Classifications:	Urban
West Maui Community Plan:	Hotel
County Zoning:	H-2 (High-Density) Hotel
Flood Zone Designations:	C, A4, V12
Special Designations:	Special Management Area
	Shoreline Setback Area (132' Setback)

Pursuant to Chapter 19.37, Time Sharing Plans, Maui County Code: "Time Share Units, Time Share Plans, and transient vacation rentals are allowed in the Hotel district".

State, County, and Community Land Use maps are included in Figure 6.

C. DESCRIPTION OF PROPOSED ACTION

Project Description and Program

Marriott Vacation Club is proposing the expansion of the existing Maui Ocean Club (MOC) Resort. The proposed project consists of the addition of two new villa unit buildings for vacation ownership, parking structures, site amenities, landscaping and demolition of some existing facilities. The project will dramatically increase the amount of landscaped green area along the shoreline of the project site.

Specifically, the project will involve the demolition of the existing ballroom, parking structure (located along the south end of the property), the luau area, the tennis courts, the exercise facility (located along the north end of the property), and most of the on-grade parking lot (located between the tennis courts and existing hotel structure) *(See Figures 7)*. Nearly an acre of impervious surface will be removed from the project site's shoreline setback area. The area will be replaced with grass lawns and landscape planting, creating a desirable park-like experience along the coastal walkway *(See Figures*

8). The amount of impervious surfaces at the project site will decrease about 13%, from 62% of the project site to 53% *(See Figures 9).*

The project entails construction of two freestanding buildings, one on each side of the existing hotel / timeshare complex.

On the north (Napili) side, a new timeshare building, identified as the Napili Building, will be located in the area of the existing tennis courts and surface parking area. It will consist of ~~96~~ 87 timeshare units in a twelve/ten-story stepped building mass. 12 of the units will be three-bedroom suites with a bedroom that "locks-off". The remaining 75 units will be two-bedroom units, 65 with lock-offs, and 10 without. Units that contain a "lock-off" bedroom allow up to two separate parties to isolate and occupy the two components of the unit (usually distinguished from one another to as the master-side and the lock-off-side). When a lockout is utilized, a doorway between the master and lockoff side of the unit is closed and secured, and access to each component is via separate doors and keys. The Napili building described in units and keys is 87units/164 keys. The ground floor will include support mechanical/electrical spaces, pool restrooms, and storage. A new one and a half story parking structure accommodating 147 stalls will be added mauka of the new timeshare building. The top floor of the parking structure will be screened with the use of landscape planted trellises. A new swimming pool, spas, and decks will be added immediately makai of the new building. A small pool bar will be located at a corner of the pool deck between the new building and the existing hotel. The area makai of the new shoreline setback (132 feet) will be landscaped with primarily open lawn and coconut trees.

On the south (Lahaina) side, a new timeshare building, identified as the Lahaina Building, will be located in the area of the existing parking structure. It will consist of ~~50~~ 56 timeshare units in a twelve/ten-story stepped building mass. The building will contain 12 three-bedroom units and 44 two-bedroom units. All units will contain a "lock-off" guestroom, thus there will be 112 "keys". The ground floor will include support mechanical/electrical spaces. A new five story parking structure accommodating 416 stalls will be added mauka of the new timeshare building. The top floor of this parking structure will also be screened with landscape planted trellises. A new swimming pool, spa, and deck will be added between the new building and the existing hotel. In addition, two new on-grade tennis courts will be added in the former location of the ballroom. Similar to the Napili side, the makai (seaward) area, which includes the 132' shoreline setback area will be landscape planted with open lawn and coconut trees.

Standard services and amenities for the recreational pool areas will include lounge chairs and cabanas, food/bar service, and other services associated with pool use (towels, etc). The new pools are specifically designed without "children's features" to discourage noisier activities at these pools. Features designed for more "active" pool use such as slides, sandboxes, and thematic elements designed for children (a pirate ship) are located at the central pool located between the wings of the existing Maui Ocean Club. Pool and pool bar hours will be during primary daylight hours, typically 7AM to 7PM.

Elevations, sections, floor plans, and unit plans for the proposed towers and parking facilities are included in Figures 10 through 12.

Access

The existing entries and overall traffic flow will be maintained with the proposed additions. The main entry to the project will be at its current location along Nohea Kai Drive. The entry to the Lahaina parking structure will be at the same location as the entry to the existing parking structure, thereby requiring no modifications to the Nohea Kai Drive island breaks.

Upon completion of the existing conversion and the addition of the two new timeshare buildings, the actual number of required parking spaces will be generally equal to that required under Hotel use. The parking requirement under hotel use was 660 stalls (per County calculations based on 720 hotel rooms and accessory commercial areas). With the completion of the conversion phase of the existing hotel and the addition of the two new timeshare buildings, the total number of parking required will be ~~640~~ 633 stalls. This revised parking requirement accounts for the reduction in the number of units and a doubling of the base (Hotel) per-unit parking stall requirement to 1 stall per unit, with an additional stall per 3 units that contain a "lockoff". The proposed plan provides for a total of ~~661~~ 656 parking stalls. ~~25~~ 30 beach right-of-way designated spaces will be provided.

Functional Relationships

The proposed additions are consistent with the current and projected timeshare use of the project. The traffic, pedestrian, and service patterns of the existing facilities are well established and the proposed additional buildings will function within these established patterns.

Traffic flow and parking patterns have been previously discussed. The service/loading functions and locations will not change from their current locations.

Schematic Landscape Planting Plan

The Landscape Architectural Planting concept for the Marriott Maui Ocean Club expansion is designed to maintain a shaded canopy throughout the resort's indoor/outdoor transition spaces and in the recreation, pedestrian circulation and parking areas in order to reinforce the traditional atmosphere of a tropical Hawaiian Resort. This will be primarily accomplished by transplanting as many of the existing specimen trees as possible; to include: Monkey Pod, Coconut Palms, Plumerias, Travelers Palms and other existing mature trees. (A temporary nursery/holding area will be established either on or off site to maintain the trees until they can be relocated after construction of the new timeshare buildings and parking structures.)

The Landscape Planting palette of trees, shrubs, vines and groundcovers has been carefully designed to blend with and enhance the overall visual and living environment of the Marriott Maui Ocean Club Resort, and to incorporate the practical use of Native plants. Additional trees such as MacArthur, Areca and Joannis Palms and specimen shade trees will be incorporated as necessary to visually soften the new towers and parking structures from off-site and within the resort property. Smaller ornamental shrubs, vines and groundcovers will be used around the pool areas and building entries to reinforce human scale and a tropical Hawai'i atmosphere.

Phasing

The project includes a demolition phase, followed by two separate phases that will construct the guestroom buildings, parking decks, and pools on the Lahaina and Napili sides of the property respectively. A detailed construction schedule is included in Appendix B, although it, and the following descriptions are estimates, and could be affected or delayed by permitting, or unforeseen conditions that arise before or during construction.

Demolition of the ballroom, fitness center, tennis courts, parking lots, and parking structure is estimated to take place over a four-month period starting in April ~~2004~~ 2006. During this phase a replacement fitness center will be established. The north parking lot will be expanded over the former tennis courts to create additional parking while the existing parking structure on the south end of the property is demolished and the Lahaina Sequel and new parking structure is constructed in its place. This interim parking area will be used for a period of approximately 12 months. During this period the interim parking area will include a landscape hedge around its outer perimeter to help screen it from the adjoining ground floor units of the condominium to the north. The expanded parking area will utilize the drainage systems in currently in place for parking and tennis facilities.

Construction of the Lahaina guestroom building is planned between September 2006 and December 2007. The adjoining multi-story parking garage is planned to be completed by July 2007. Landscape planting and construction of the pool will occur between July and December 2007.

Construction of the Napili guestroom building is planned between June ~~2005~~ 2007 and December ~~2006~~ 2008. The adjoining parking garage will be under construction between June and December ~~2006~~ 2008. Landscape planting and construction of the pool will occur between July and October ~~2007~~ 2008.

Cost Estimate

The proposed investment by Marriott Vacation Club for the "hard cost" of construction is $92 million dollars. This amount includes the cost for the discussed demolition, construction of the parking garages, unit buildings, site amenities, furniture, and landscaping.

D. ALTERNATIVES

Alternatives to the proposed action include:

No-Action Alternative. The no-action alternative will maintain the current development envelope of the resort. The guestrooms in the existing 10-story Hotel structure constructed in 1979 would continue to be converted to timeshare suites as outlined by the Maui Ocean Club SMA permit granted in 2000. In lieu of the following build alternatives, the configuration of existing site amenities would be maintained, including parking structures and lots, tennis courts, a ballroom, and a luau facility.

Primary benefits of the no action alternative include:

- Physical construction-related impacts would be limited to the ongoing conversion of existing Hotel guestrooms
- The adverse socio-economic construction-related impacts to neighboring properties related to building new structures would not occur
- Existing view corridors would remain

- The continued conversion of the 720-room Maui Marriott Hotel to the 312-unit Maui Ocean Club would lower guest counts; which would reduce demands on public facilities such as roadways, police & fire services, and utilities.

Primary costs and risks of the no action alternative include:

- Elimination of public benefits, including:
  - Improvements to the immediate "Shoreline Area" such as enhanced landscaping, greater open space, and the elimination of several hardened structures
  - A more stable visitor occupancy
  - Economic benefits due to construction, sale, and operation of the timeshare units.
  - Economic benefits to the local economy related to the expenditures from additional timeshare visitors. Upon completion and stabilization of the Maui Ocean Club, the typical guest count will be reduced to an amount roughly equivalent to previous Hotel operations at 49% occupancy. Accordingly, this alternative will lead to a underutilization of the commercial property. Build-action alternatives would allow the guest density to return to previous levels.
  - Economic benefits due to increased State and County revenues and taxes
  - Additional long-term and short-term employment opportunities
- Undesirable impacts to the owner/operator
  - No-action alternatives do not allow the applicant to significantly update the property to meet current visitor market preferences. The existing resort was designed for a different type of visitor market over 25 years ago.
  - While the conversion of hotel units has allowed the owner to expand into the timeshare market, converted units are less desirable to the longer-staying timeshare visitor. Factors that make converted units less desirable include awkward unit footprints, inefficient and cramped room configurations, lack of adequate kitchen facilities, and incompatibility with Federal Housing Authority (FHA) standards. By limiting development to the existing structure, the owner's ability to create and offer the "purpose built" upscale multi-bedroom product that is desired by the visitor marketplace is eliminated. This places the owner at a competitive disadvantage with more modern resorts. It also places the operator at a competitive disadvantage with respect to meeting market expansion, and maintaining market share.

- It underutilizes extremely valuable property by locating amenities such as parking lots and tennis courts in prime shorefront areas, which is not the highest and best use of the property.
- It underutilizes the property by lowering the guest density below levels that were comfortably sustained during the Hotel period.
- The applicant experience shows that lower guest density results in lower staff efficiency

The No-action alternative was rejected for the following reasons

- It is important to the applicant to respond and adapt to the visitor market, expand its services, maintain market share, and make efficient use of its assets
- It is believed that construction-related impacts and socio-economic impacts can be mitigated to acceptable levels
- The applicant finds that proper siting and design of the build options can minimize visual impacts to neighboring properties and retain view corridors in a manner consistent with other sections of the resort

~~The no-action alternative would continue to allow underutilization of highly valuable, residentially-desirable shoreline land resulting in the loss of potential economic benefits to the landowner, businesses in the area, and tax revenue for the State and County governments.~~

~~The no-action alternative would preclude all short and long-term beneficial and adverse impacts described in this EIS. Construction related environmental impacts, including those related to traffic, noise, and air quality, would be avoided. Additionally, the costs associated with constructing the project would be avoided. The benefits of the project would not be realized, including the development of 146 high-quality visitor accommodations, improvements to the character of the Ka`anapali shoreline area, and secondary fiscal impacts from the construction, sale, and operation of the timeshare units, and expenditures from timeshare visitors to the local economy.~~

Different Actions Alternatives. Alternative actions having a significantly different nature include the development of commercial or restaurant facilities, expanded visitor activities, and lower /higher density modes of residential development. The nature of environmental impacts would vary among the types of development.

The benefits of commercial or restaurant development in lieu of the proposed action would include:

- Greater view corridors through the property
- Less change to the visual characteristic of existing development

The cost, risks, and impacts of commercial or restaurant development in lieu of the proposed action would include:

- The potential for more traffic,
- The potential for increased ~~ambient~~ operational noise levels, especially during evening hours. This would include activity related noises (dining, talking, etc) and back-of-house service operations (deliveries, traffic, kitchen)
- The potential for point source for emissions such as commercial kitchen exhaust

The benefits of lower-rise hotel development in lieu of the proposed action would include:

- Greater view corridors through the property
- Less change to the visual characteristic of existing development
- The lower guest count would have marginally fewer impacts to public facilities such as roadway traffic, police & fire services, and utilities.

The cost, risks, and impacts of lower-rise hotel development in lieu of the proposed action would include:

- Higher construction costs per unit than high-rise development
- Less economic benefits due to construction, sale, and operation of the timeshare units, and expenditures from timeshare visitors to the local economy
- Less economic benefits that would result from increased State and County revenues and taxes
- Less sales revenue from units and less inventory to offer in the MVCI vacation system
- Less efficient use of valuable shorefront property.

The proposed alternative was selected as it best met visitor demand, is consistent with H-2 Hotel district zoning, and provided the most attractive benefits to the applicant given the costs of design, permitting, construction, and marketing. Particular attention was paid to the considerable costs of foundation work necessary at the site, which encourages the development of multi-story buildings. The interaction of new and existing uses was also considered; given the reduced guest density due to the Maui Ocean Club conversion, the addition of guest accommodations would most benefit the existing mix of amenities, with particular attention to the (underutilized) on-site commercial and restaurant facilities.

Design Alteration and Siting Alternatives. Five different conceptual design and siting options of the proposed alternative have been developed in the planning of the project. Primary influences in the creation of design Options included design input from the

Ka`anapali Operations Association Design Review Committee, consultation with ~~primarily due to consideration given to views of~~ unit owners and AOAO Board members from the adjacent Ka`anapali Ali`i Residential Condominium, and the specific site constraints listed below.

In addition to input form these parties, other constraints regarding the design and siting of the proposed build alternatives includes:

- A shoreline setback of 132-feet. Siting improvements within the setback could be accomplished if a shoreline setback variance were approved. Given current community opposition to development in the setback area, and that the issuance of such a variance is conditioned upon the demonstration of hardship by the applicant, it decided that although possible, it was not practical to develop in the shoreline area. All build options site the proposed residential structures behind the shoreline setback. In addition, build options 4 and 5 site all pool hardscape behind the shoreline setback.

- The condominium property regime in effect pursuant to the Maui Ocean Club timeshare conversion delineates the areas of the project into the following categories:
    - Commercial Apartments – Applicant controlled space, which can be utilized for any purpose permissible by law, including development of additional units.
    - Commercial Apartments Limited Common Elements – Limited Common Elements (LCE) appurtenant to specified Commercial Apartments.
    - Timeshare Apartments - Apartments operated under a timeshare or vacation ownership plan.
    - Timeshare Apartment Limited Common Elements – LCE appurtenant to Timeshare Apartments.
    - General Common Elements (GCE) – Common area not otherwise designated as Limited Common elements, and controlled by the Condominium Owners Association (COA). These areas are available for use by all members of the COA, including the Applicant, who is a member of the COA by virtue of its ownership and control of the Commercial Apartments.

  In essence, MVCI is limited to developing additional units within the bounds of the existing Commercial Apartments that it controls. MVCI's research on this issue indicates that should MVCI attempt to effect a "swap" of Commercial Apartment for GCE area and subsequently develop additional units on the former GCE area, MVCI would be unable to procure Title Insurance on those units for a period of six years following the effective date of the "swap". Accordingly, siting options for additional development are limited to existing Commercial Apartment areas controlled by MVCI. These areas include:

- South section of the site (near the Hyatt): MVCI owns the area within the footprint of the existing parking structure. Build Options 1-5 include a "Lahaina" tower that makes use of the width of this footprint and most of the depth. It was identified early in the siting/design process that additional depth of the Lahaina building would increase the room count on the south side of the property, however would also reduce the size of the planned parking garage, necessitating further development of parking on the north side of the site, which was a concern for the Ka`anapali Ali`i Condominium, both in terms of operational noise and mauka view blockage (see parking discussion below).
- North section (near the Ka`anapali Ali`i Condominium): MVCI owns the land occupied by the tennis courts and on-grade parking lots. Given that this area is much larger, greater flexibility in building design and siting was possible.

- Side yard setbacks up to 30 feet (determined by building height)
- Fire-related building codes that specify separation between structures
- Requirement to maintain fire access along the north of the existing Resort building
- Operational need to maintain a service access to the basement, receiving area, and "back of house" located at the north end of the existing Resort building
- Requirements to provide parking, which necessitates the allocation of developable area for parking facilities. Operational function also dictates that the parking be sensibly distributed between the north and south sections of the project. While the build options predict a greater number of units on the north side of the property, the significant parking facilities have been planned on the south of the property in order to preserve views from the neighboring Ka`anapali Ali`i Condominium.
- Zoning requirements, which establish a 12-story maximum height and specific maximums for lot coverage and total floor area.

The five design Options are described below. ~~illustrated in Figure 16, and described in Section II, Visual Resources~~ The plans and elevations developed in the conceptual planning process are included in Appendix P)

The following Five primary design and siting Options were developed between May 2002 and May 2003. Options 1-3 were presented in the Draft EIS. Options 4 and 5 were developed during the review of the Draft EIS, and incorporate the latest input from Ka`anapali Ali`i Condominium owners, and the Ka`anapali Operations Association.

Option 1. Option 1 was the first concept developed for the development. The plan included two high-rise towers that were maximized for shoreline exposure. Each tower was set abutting the side yard setback and shoreline setback.

Although Option 1 was completely within allowable building setbacks and zoning controls, it was dismissed by the project team because it was felt that it would "wall off" view corridors and create negative sentiment with the KA condominium owners to the north, whose views were primarily across the Marriott property. In addition, the width of the Lahaina building extended into areas not exclusively owned by the applicant.

Option 2. The Option 2 plan included two 8-story towers with a total of 131 units. The two buildings were sited north and south of the existing Hotel structure, and were referred to as the Napili and Lahaina buildings respectively. The Lahaina building was narrowed to fit into the area owned exclusively by the applicant and currently occupied by the resort's parking garage. A small swimming pool area was included next to the Lahaina building and a 4-5 story parking structure was sited landward. A reconfigured Napili building was sited to preserve the coastal view corridor from all units in Building 3 of the KA Condominium and the mountain view corridor from units in Building 4. Other features aimed at reducing the impact on the KAC included limiting the height of an adjacent parking structure to 1.5 levels and designing the pool adjacent to the Napili Building for "adult use".

This was the first option presented to the Ka`anapali Ali`i Condominium AOAO and owners representatives. Initial feedback from the KAC expressed owners' sensitivity to the proximity of the proposed Napili Tower and concerns regarding the view of the Napili Building's roof. Suggestions included removing the end bays closest to the KAC and building a taller structure. The KAC AOAO stated that it would form a committee to facilitate further communication of owner concerns and design feedback.

Option 3. The Option 3 plan eliminated the two end stacks (bays) nearest the KAC and increased the building height to 10 stories. This option increased building separation from the KAC from 75 feet to approximately 110 feet. The side-yard setback for the Napili Building under this option was ~56 feet, (by comparison, the KAC building 3 is set back ~33 feet. Option 3 was included in the Draft EIS as the preferred alternative and was also presented to KAC owners during their annual meeting, in November 2002.

During and subsequent to that meeting, feedback from the KAC still included general sensitivity to the proximity of the proposed Napili Building and concerns regarding the view of building's roof. Other design related concerns included:

- KAC Building 4 owners were concerned about blockage of ocean views from their units. Eight corner units on building 4 are designated as "ocean view" or "partial ocean view" by the Condominium's rental operator. The remaining 25 units are designated "garden view" or "mountain view", although views of the ocean can be seen from the balconies of some of these units if the viewer positions him/her self at the landward extent of the balcony.
- Concerns were expressed at the proximity of the pool and pool bar to the KAC.
- There were general concerns that the landscaping planned for the MOC site could block views from the lower level KAC units.

Suggestions made by KAC owners included reducing the number of units on the Napili Tower. A major shared concern, voiced by a number of Kaanapali Ali'i owners, was the location and orientation of the Napili Sequel with respect to preserving the existing ocean views from their units. Suggestions included shifting the Napili Sequel closer to the existing Molokai wing and further away from KAC, eliminating a stack of units, rotating the building, reducing its size by locating more units in the Lahaina Sequel, eliminating the Napili Sequel by locating all units to the Lahaina Sequel, and reconfiguring and/or re-orienting the building.

Feedback from the KOA Design Review committee focused on the form of the new structures, specifically encouraging a less "rectilinear" shape.

Option 4. In response to this design feedback, Option 4 entailed a clockwise rotation of the Napili Building. The prime advantage of this option was that it improved the ocean view corridor from KAC Building 4. The disadvantages of the rotation included a reduced building separation from ~110 to 100 feet, a necessary reduction of parking in the north parking structure (due to Code required building separation), and a less favorable orientation of the Napili Building views towards the KAC rather than towards the ocean.

Option 4 also increased the shoreline setback of the Napili Pool amenities. In this option, sections of the proposed Napili pool deck that were in the shoreline setback area were relocated landward of the setback line. While current rules and practice may allow sensitively designed pool deck within the shoreline setback area, the design team felt it appropriate to design to evolving rules and practices that discourage any significant hardened surface in the setback area.

Option 4 also addressed the request from the KOA Design Review Committee regarding the rectilinear shape of the building. The Option 4 design incorporated a stepped building configuration, creating a ten-story building stepping down to eight stories at either end.

At this stage of the planning & design process, many concerned KAC owners were bypassing communications through the KAC AOAO and were contacting the applicant's design team directly in person, via phone, and through email. In order to communicate progress on the common KAC owner concerns, the applicant hosted two meetings (Ka`anapali on 4/28/2003 & Northern California on 5/14/2003), which were coordinated with assistance of several KAC unit owners. Design Option 4 was presented to several KAC owners at these meetings, along with view-corridor simulations from the several KAC unit balconies (see Appendix O). In addition, the restrictions on the Lahaina Building footprint were explained in detail, conveying that any additional units (shifted to the Lahaina side) would require extension of the Lahaina building's height.

KAC owners present at those meetings generally approved of the changes made in Option 4, however, they voiced a preference for additional building separation by eliminating the two end bays nearest the KAC, even if it meant increasing the height of the Napili & Lahaina Buildings to make up the lost units. Additionally, it was requested that the side lot setback of the Napili pool deck be increased from the ~25 feet shown on the option 4 plan.

Option 5. Following the recommendations made in response to the Option 4 presentations, the Option 5 design increased the proposed building heights to a 12/10 story stepped structure and reduced the width of the Napili building by eliminating the two end stacks closest to the KAC. Building separation increased from ~100 to ~130 feet with option 5. Option 5 also increased the side-yard setback of the Napili pool deck from ~25 to ~40 feet, resulting in a separation from the KAC Building 3 of ~80 feet.

Option 5 results in a unit count of 143 units, of which, 133 will have a lock-off unit. Option 5 is the preferred option represented in the Final EIS.

Differences in impacts between the options.

- Unit Count: The highest unit count was in option 3 (146 units) and the lowest in option 2 (131 units). No significant differences in impacts were anticipated within these variations
- Building Height: Heights ranged from 8 stories (Option 2) to the 12/10-story stepped height in option 5. Options 3-5 (10-story and above) will extend higher than the existing Marriott and KAC structures, eliminating the (potentially unsightly) view of a flat roof from both locations.
- View Corridors: The options preserving the most public view corridor were options 1 and 5 with respect to the north corridor and option 2-5 with respect to the south corridor. Option 5 preserved the most landward/seaward view corridor overall.
- Private Views from the KAC: Ocean views enjoyed by KAC owners across the Marriott property would be most obstructed under option 1 and least obstructed under option 5.
- Construction Impacts: Primary construction impacts will include noise from pile driving and dust impacts. Pile driving impacts are proportionate to distance between the source and the observer, as well as to the duration of pile driving operations, i.e., the number of piles driven. Construction impacts would be highest under option 1 and lowest under option 5, due to the increased building separation and reduced footprint size.
- Operational Impacts: Guestroom and pool noise from the proposed Napili structure are anticipated to be lower where building separation is greatest. Option 5 therefore would minimize operational noise impacts

Design Option 5 has been selected by the applicant as the preferred option for the following reasons:

- The Option will least impact adjoining properties regarding construction noise, operational noise, and view impacts
- The Option preserves the greatest amount of view corridor through the subject property. Although Option 5 proposes a greater building height over other options, discussions with interested parties has demonstrated a consistent preference for wider view corridors over lower building heights when the two constraints are at odds with another.
- The configuration of the option is attractive with respect to unit count and configuration, and is efficient regarding the size of the foundation footprint compared to the unit yield.

Alternative Locations. The alternate location analysis entails review of building a similar development at a location different from the subject property located in the Ka`anapali Resort.

Primary benefits of the alternative location alternative include:

- If the project was developed in a non-urban environment, it would avoid certain construction-related impacts to neighboring property owners.
- Existing view corridors at the project site would remain

Primary costs and risks of the alternative location alternative include:

- Construction of the project in another urban area would simply shift the construction-related impacts to another group.
- Construction of the project in a non-urban area is contrary to current public opinion and planning intent. Opening of a new area to resort development would likely have more significant impacts to recreational resources and the natural environment
- Construction in alternative area would likely require large investments in regional infrastructure. Similarly, a new project would not be able to share the diversity of on-site infrastructure (i.e. heating/cooling systems), which leads to a less efficient physical plant.
- Elimination of the proposed build-alternative benefits, including improvements to the immediate "Shoreline Area" such as enhanced landscaping, greater open space, and the elimination of several hardened structures

Specific alternative (off-site) locations for the project were not considered.

The on-site option was selected because the applicant felt that the project site was well suited for the proposed development as for the following reasons:

- It is underutilized as per the development allocation set by zoning standards
- On-site development will return the property to the previous (higher) guest density of the resort (during the Hotel period)
- It is in close proximity to recreational resources desired by visitors
- It is built within a master planned resort with infrastructure designed for the higher use.
- The feasibility of developing the project site is inherently related to the applicant owning the subject property
- Locating the project on the subject property avoids expanding (off-site) resort development to undeveloped areas, or re-zoning lower density urban zones

Postponing the Action. Current evaluation and assessment of the project has yielded no information, or lack of, that indicates that the project would be best postponed until further study of costs, benefits, or impacts.

Costs and risks of postponing the project include:

- Costs of developing the project will increase (estimated at 3%/year)
- Timely development of the Sequel project will seamlessly extend the employment of the sales staff. Delaying the project may result in inventory gaps that would create undesirable fluctuations of the sales program and undesirable employment transitions for the sales employees and managers.

E. REQUIRED PERMITS

The following permits and approvals are required for the proposed action:

State of Hawaii

The following permits are administered by the Department of Health. Application for these permits will be initiated after the applicant obtains the required Special Management Area Permit.

- National Pollution Distribution Elimination System (NPDES) General Permit
- Noise Permit

County of Maui

The following permits are administered by the Department of Planning and acted upon by the Maui Planning Commission. The application for SMA permit will be made in conjunction with the publication of the Draft EIS.

- Special Management Area (SMA) Permit

The following permits are administered by the Department of Public Works and Waste Management, Land Use and Codes Administration. Application for these permits will be initiated after the applicant obtains the required Special Management Area Permit.

- Building permits
- Grading permit

Ka`anapali Resort

The Ka`anapali Operations Association (KOA) administers the CC&Rs for the properties within the Ka`anapali Resort. Pursuant to requirements of the CC&R's, the project is required to obtain Design Review Approval by the KOA.

- Project Design Review & Approval

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

A. PHYSICAL ENVIRONMENT

1. Land Use

Known Conditions. The Ka`anapali Beach Resort is located on the west coast of the island of Maui, about three miles north of Lahaina. The resort is a 1,200-acre planned resort community that was conceived in the early 1950's and commenced in 1958 with the construction of a water system, sewage treatment plant, drainage system and a network of roadways. Lands within the resort are primarily zoned for residential, resort-commercial, and hotel development. The majority of land fronting Ka`anapali Beach is zoned for high-density hotel development.

Today, the Ka`anapali Beach Resort includes six hotels with over 3,700 rooms, six residential condominium developments, a shopping center/whaling museum, and two 18-hole golf courses.

The Maui Ocean Club Sequel Project site is a 15.9 acre oceanfront parcel (TMK 4-4-13:01) within the Ka`anapali Beach Resort. The property abuts Ka`anapali Beach at Hanaka`ō`ō Point. The adjacent property to the south is operated as the Hyatt Regency Hotel. Abutting the north boundary is the Ka`anapali Ali`i Condominium. These parcels are separated approximately 1800 feet from Hono`api`ilani Highway by a golf course and parking facilities. Access to the properties is via two roads owned and maintained by the resort, Ka`anapali Parkway, and Nohea Kai Drive.

Public parking and access ways to Ka`anapali Beach are available at several points along the coastline. 25 beach access parking stalls are provided at the project site, and two right-of-way corridors have been developed; one along the property's north boundary, and one along the south boundary.

Ka`anapali Beach is a popular recreational area for visitors and residents. Common activities associated with the beach and ocean include sunning, swimming, snorkeling, outrigger canoe paddling and sailing and other ocean related activities. A surf break responding to southwest swells is located off Hanaka`ō`ō Point fronting the subject property and Ka`anapali Ali`i Condominium. Hanaka`ō`ō Point is a dynamic sandy outcrop, and is often one of the widest portions of the beach.

Potential Impacts. The development of additional transient residential units is considered appropriate in terms of planning and zoning. It is likely that the proposed project will preclude further residential development of the project.

The project will result in short-term construction ~~nuisance~~ impacts including those associated with traffic, air quality, vibration, and noise generation. Long-term impacts include beneficial and adverse impact to the socio-economic environment and visual character of the site. These types of physical environmental impacts, and potential mitigation measures are detailed in the following sections.

Public beach parking and public right-of-way corridors will be maintained as part of the Sequel Project.

2. Topography, Geology, and Soils

Known Conditions. The topography within the project site is relatively flat, consisting primarily of parking decks, roads, and tennis courts. The entrance driveway located north of the existing hotel building, on the east side of the resort, has the most dramatic slope (sloping down toward Nohea Kai Dr.) with an approximate average grade of 3 percent.

According to the Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, prepared by the United States Department of Agriculture, Soil Conservation Service, there are three (3) soil classifications found on the project site. The dominant soil type is the Jaucas Sand, 0 to 15 percent slopes (JaC). The remaining soil types are the Kealia Silt Loam (KMW) and Beaches (BS). A copy of the appropriate section of the map is included in the Preliminary Engineering & Drainage Report (Appendix K).

Jaucas Sand is classified as having very slow runoff and a severe wind erosion hazard. The Kealia Silt Loam is characterized as having slow to very slow runoff, and severe wind erosion. The Beaches is characterized as areas consisting mainly of light colored sand derived from coral and seashells.

Affected Environment. Due to the favorable flat site conditions, the proposed development will require minimal changes to the existing topography. Underlying soils are composed of ~~sandy soils~~ loose to dense sand and gravel strata overlaying a hard basalt formation at approximately 140 to 180 feet below the surface. These soil conditions, coupled with local seismic considerations, dictate the use of a deep foundation system (i.e., driven piles or poured caissons) to adequately support the buildings. ~~therefore an appropriate foundation will be composed of driven piles or poured caissons.~~ Based on the soils test findings, the depth of the foundations will be 140 to 180 feet below the surface. ~~Due to the salt water table, the foundations will be of concrete construction.~~ No substantial alterations to existing grade levels are required and thus no substantial impacts are anticipated.

Concerns were raised by the neighboring Ka`anapali Ali`i Condominium regarding the potential of pile driving operations to damage structures on the condominium's property. At the time of query, the type of foundation was unknown to the management of the KAC and the applicant. Subsequent investigation revealed that the KAC residential apartments are constructed atop a pile foundation that bears on the solid basalt formation described above. By design, such deep foundation systems effectively insulate the supported structures from settlement of underlying soils strata. Accordingly, any affect on subsurface soil strata resulting from vibration from a pile driving operation on the Maui sequel project would not result in settlement of the KAC unit towers.

Pile driving operations do have the potential to cause temporary (vibration) impacts during the construction period.

Mitigation measures suggested by the KAC included:

- Pre-drilling pile locations
- Monitoring seismic vibration to ensure vibration levels fall within governmental guidelines

Other potential measures that reduce seismic vibration include:

- Increasing the distance between the proposed developments and sensitive receptors
- Constructing a foundation that does not require pile driving, such as poured caissons

Mitigation measures that the applicant will incorporate include:

- Pre-drilling pile locations

- Increasing the distance between the proposed developments and sensitive receptors (which was accomplished by the successive design of siting options)

In the applicant's research of alternative foundation constructions, it was determined that due to the underlying soil conditions (depth, water table, sand), it would not be feasible to implement a poured caisson foundation. In researching of the monitoring option, the applicant was unable to identify any Federal, State, or County requirements or guidelines related to allowable seismic disturbances. Therefore, the applicant has not selected monitoring as a mitigation measure.

3. Climate and Air Quality

Known Conditions. The climate in the West Maui coastal region is influenced by persistent north-northeasterly trade winds. Lahaina is located in the dry leeward portion of West Maui. Average annual temperature is 75 F. Average monthly temperatures vary by about 9 degrees between the coolest and warmest months. Rainfall at the project site averages approximately 15 inches per year.

Affected Environment- Shadows. Figure 13 in the EIS shows the results of a computerized sun/shade study prepared by Group 70 International. The study analyzed the impact of the shadows of the proposed two sequel buildings to the existing hotel and to the Ka`anapali Ali`i Condominium in the mornings and afternoons during the winter and summer solstices (December 21 and June 21 respectively). The results of the study indicate that the proposed sequel buildings will not have an impact on the existing hotel or on the Ka`anapali Ali`i Condominium buildings during the two study periods. Since both periods are at the extreme ranges of sun angles, with the most extreme during the winter, it can be concluded that there will be no impact throughout the year. ~~A simulation of the shadows created by the new buildings was generated to estimate the potential for shadows to impact microclimate conditions at the nearby Ka`anapali Ali`i residential condominium *(See Figures 13)*. According to the analysis, sun shadows will be nearest in the winter season but will not affect the adjacent building.~~

Affected Environment - Wind. A study was conducted by West Wind Laboratory Inc. at their laboratory located in Marina, California, to determine the impact of the proposed sequel buildings to the existing Maui Ocean Club building and to the neighboring Ka`anapali Ali`i Condominium building to the north. The study was conducted in December 2002 and March 2003 by Dr. Jon D. Raggett, PhD, SE, a leading national authority in the analysis of wind velocity impact on built structures and the environment. The study involved wind tunnel testing of three-dimensional models at prevailing wind directions at the ground level and along the vertical faces of the structures. The study was based initially on the proposed sequel configuration as described in the DEIS (Option 3) and was subsequently expanded to include the configurations of Options 1 & 2 as described in the DEIS. The studies are included in Appendix N.

The studies were undertaken to identify potential (undesirable) wind speed acceleration in the gap between the proposed Napili Sequel and the Ka`anapali Ali`i Condominium and similar acceleration along the face of either building. The findings of the studies are summarized below:

- All three optional layouts described in the DEIS will increase winds along the south face of Ka`anapali Ali`i Building 3. The impact on Building 4 is negligible.
- None of the wind speeds, at the ground level and up the faces of the KA condominiums, exceed the ambient wind speed that one would experience in one's face at a nearby open field location.
- The wind speeds up the face of the KA condominiums Bldg 3 increase least with Option 1, most with Option 2, and slightly less for Option 3 (the currently proposed scheme).
- Balconies up the face of Bldg 3, which are protected now, may experience higher wind speeds across the faces of the balconies with the addition of any of Options 1, 2, or 3. It should be noted that the balconies along the south face of Bldg 3 are recessed, and not projecting, from the face of the building. In addition, these balconies have planters along their outer faces. These factors will diminish the impact of the higher winds across the faces of these balconies.
- The proposed sequel buildings will have no negative impact on the movement of the shoreline. Given the prevailing wind direction, the proposed sequel buildings will shield and minimize any impact of wind on the beach and shoreline.

Due to further development of design options in the Draft EIS review period, the studies were updated via a letter (included in Appendix N) to address potential change in wind impacts regarding design options 4 & 5 (which appear in the Final EIS). Additionally, the addendum addressed the issue of non-prevailing "Kona winds". The additional analysis is summarized as follows:

- The stepped (10/12 story) building design in Options 4 & 5 will reduce vortex winds at the corner of the proposed building and thus reduce wind acceleration between the proposed building and the KA Condominium.
- The wind speeds between the proposed building and the KA Condominium should be least for Option 5, then Option 4, then Option 3.

- It is reasonable to assume that wind speeds in the between the proposed building and the KA Condominium due to "Kona winds" will be similar to the effect of similar strength prevailing winds, but obviously in opposite directions. Again too, for Kona winds, wind speeds in the gap will probably be least for Option 5, then Option 4, then Option 3.

Potential Mitigation Measures - Wind. Mitigation measures that would reduce wind acceleration impacts include:

- Reducing the height of the proposed towers
- Reducing the width of the proposed towers
- Stepping the buildings to reduce corner vortexes
- Increasing the separation between adjacent projects

Through the process of design alternative planning, the applicant has incorporated all mitigation measures listed above save decreasing building height. Building height was increased during design alternative planning to increase building separation and increase ocean view corridors from a neighboring property while holding the number of units relatively constant.

Affected Environment- Air Quality. Construction of the project will entail demolition, earth moving activities, construction, and landscape planting. These activities could impact air quality due to the release fugitive dust, particulate matter, and equipment exhaust.

Long-term impacts to air-quality are not anticipated as the project site will be landscape planted, preventing wind erosion of the native and introduced soils. Secondly, with exception of small cooking facilities, the action does not entail the construction of point sources for air emissions.

Mitigation Measures - Air Quality. The applicant will utilize mitigation measures to contain dust and project runoff during the construction period. The anticipated method of containment will be to enclose the project area with a combination dust/silt fence. Additional measures will include periodic project watering for dust control, promptly vegetating bared areas where practical, and controlling dust from equipment by covering truckloads.

The applicant will incorporate the following mitigation measures:

- A best-management-practices (BMP) plan will be developed in conjunction with the project's grading plans, which will detail the physical protective measures used at the project site, the locations of such measures, and other intermittent requirements such as project watering. Prior to construction the BMP plan will be reviewed by the County engineering division of the Land Use and Codes Division of the Department of Public Works and Environmental Protection, and the State Clean Water Branch (as part of the NPDES general permit)

- The construction contract will specify that it is the responsibility of the contractor to provide for the cleaning of any construction related dust impacts.

4. Noise Characteristics

Known Conditions. Noise sources in the vicinity reflect the urban resort development of a coastal area. Urban sources of noise include mechanical sources generated by automobile and aircraft traffic, and human generated noise from the use of recreational or commercial facilities. Wind and surf are the primary natural background sources of noise for the region.

The most sensitive receptors (due to their proximity) include the guests of the Maui Ocean Club, the Ka`anapali Ali`i Condominium, the Hyatt Regency, and users of Ka`anapali Beach and surrounding waters.

Affected Environment- Construction. The project entails demolition, grading, temporary relocation of services, new construction, and landscaping activities. A detailed schedule of the construction activities is included as Appendix B. Below are examples of (the loudest) equipment typical for the various construction phases:

- Demolition: tractors, backhoes, loaders, and jackhammers. Following demolition and preceding construction of the Napili building, the area used for tennis courts and the fitness club will be used for temporary automobile parking.
- Foundation Work: tractors, graders, cement mixers and pumps, drills and pile drivers
- Construction of the pools, parking facilities, and towers will include cranes, concrete equipment, saws, and pneumatic equipment. Construction noise impacts will decrease once the superstructure and building exterior are completed.
- Various types of trucks will operate throughout all phases.

Applicable Studies. An Environmental Noise Assessment Study was prepared for the project by D.L. Adams and Associates; it is included in Appendix C. The study measured existing sound levels in the project area and anticipated noise levels during construction and upon project completion. No long-term acoustical impacts were anticipated with the completion of construction, however it was noted that construction activities would likely generate noises above standard levels established in the State's laws on Community Noise Control. The applicant would need to obtain a noise permit for construction activities that typically exceed the standard levels (jackhammers, pile drivers, saws, etc). Noise impacts from the typical types of equipment used in the project construction are included in Figure 7 of Appendix C.

Mitigation Measures- Construction. General acoustic mitigation measures could include the following:

- Moving the project further from adjacent noise receptors
- Restricting hours of construction
- Siting the construction preparation areas behind the superstructures of the proposed buildings to better shield adjacent developments

Mitigation measures related to the greatest noise generator (pile driving) could include alternative construction methods, including:

1. Pre-drilling pile locations. This would minimize bearing noise due to the coral shelf and other blockages. Piles placed in pre-drilled holes tend to "fall in" to the drilled depth and thus drilling reduce the amount of driving required. Pre-drilling would have the noise equivalent of a large truck or backhoe. Previous drilling related to soil core sampling has been quiet enough to go unnoticed by adjacent neighbors.
2. Using a hydraulic pile driver would lessen the extent of impact noises. Use of plywood driving cushions would further reduce the noise generation. Further noise reduction could be achieved by the use of noise attenuating shrouds over the impact point, although safety considerations often prevent the use of such a procedure. This could be done in conjunction with pre-drilling. ~~Estimated costs for mitigation measures 1&2 would be in the range of $1.2 to $1.4 million per tower location.~~ Sound measurements of such a driving operation are included as a supplement to Appendix C. The measurements show that a significant reduction in noise levels can be attained via use of a hydraulic hammer versus traditional diesel hammers.
3. Poured caissons in lieu of piles. There would be no piles and no pile driving. ~~Cement~~ Concrete caissons would be poured after pre-drilling and "casing" the holes. Noise impacts would be primarily be from drilling operations. This option is not particularly suited to the sandy soils below the water table, as the holes would naturally fill themselves in after drilling, requiring that the steel casing be left in place permanently. In addition, preliminary soils tests indicate that boulder fields overlaying the load bearing basalt formations may preclude the use of caisson foundations. This option would significantly extend the

duration of foundation work ~~by a factor of 5~~ and be much more costly ~~most costly~~ than a pile driving operation. Preliminary estimates place the additional cost of such an operation in the range of $2 to $3 Million.

The applicant has selected to use the following mitigation measures:

- Moving the project further from adjacent noise receptors. (The proposed ~~alternative~~ design option (#5) sites the proposed Napili building further away from the property line (~~45~~ 75') than the minimum setback (25') and establishes a building separation from Ka`anapali Ali`i of about ~~100~~ 130'.)
- Restricting Hours of Construction to between 8:00 AM to 4:30 PM (including all other restrictions and conditions prescribed by a Department of Health noise permit)
- Locate the concrete staging area for the proposed Napili Building towards the Lahaina side of the superstructure on the mauka side, to better shield the noise from the adjacent condominium.

The applicant determined that a poured caisson foundation would be technically challenging given the soil conditions, and not practical because the required equipment is not available within the State of Hawaii. The applicant determined that a pile foundation was most appropriate for the construction type. Mitigation measures that will be used by the applicant regarding the Pile Driving construction phase include:

- Use multiple pile drivers where possible to reduce the duration of activity
- Use of quieter hydraulic pile drivers
- Use of impact-noise reducing hammer-cushions ("pills")
- Use of pile driver shrouds when safety considerations allow their use
- Pre-drilling pile locations to approximately 80 feet in order to speed operations and reduce driving operations
- Increase the physical separation between the new Napili building and the adjacent condominium property.
- Schedule pile driving to occur during the lower occupancy periods of the neighboring condominium.

Affected Environment- Operations. Overall changes from the Sequel project will result in a quieter resort. In the southern section of the property, the luau activity and ballroom facility will be eliminated and replaced by a guest building, pool, tennis courts, and enlarged parking structure. Elimination of the luau in particular reduces the amount of operational noise at the resort. An event area and parking facilities operated by the Hyatt Regency abut the south boundary of the project site.

Changes in acoustic character will be less pronounced along the northern part of the property. The tennis courts and parking facilities nearest the shoreline will be replaced with open space and pool facilities. The pool facilities will be located further from the nearest neighbor (the Ka`anapali Ali`i Condominium) than the existing tennis courts, and will be designed to be open only during daylight hours, where the courts are open at night. The proposed Napili guest building will be constructed over areas that are currently used for parking and tennis. A 2-story parking garage will be constructed near where a fitness facility is currently located.

The applicant will incorporate the following measures related to reduce operational noise:

- Use broom-swept finishes on the concrete ramps of the parking garage to reduce tire squeal
- New pools will be designed for quieter "adult" use
- Pool hours will be limited to "daylight" hours (approximately 7AM to 7PM)
- (In addition) operation of the pool area will be subject to noise restrictions associated with the (County) liquor license for the pool bar.

5. Coastal Processes and Marine Resources

Known Conditions. The subject property is located on Ka`anapali (Hanaka`ō`ō) Beach, and adjacent to Hanaka`ō`ō Point, which is on Maui's west shore.

Nearshore waters are classified as open coastal "A", according to the Water Quality Standards Map prepared by the State Office of Environmental Planning and Hawaii Department of Health.

Applicable Studies. A Shoreline Evaluation of the project site was prepared by Sea Engineering, Inc. as part of the 2000 application for Maui Ocean Club project; a copy of the report is attached as Appendix D. The evaluation describes the subject property as a shoreline parcel located near the center of Hanaka`ō`ō Beach, and adjoining Hanaka`ō`ō Point. The north and middle sectors of Hanaka`ō`ō Beach are dynamic, responding to the seasonally varying wave climate. In the summer, the sand moves from Hanaka`ō`ō Point to the north due to the influence of the prevailing south swell. The pattern reverses in the winter when the north pacific swell is present. While the seasonal changes at Hanaka`ō`ō Point are pronounced, the vegetation line is relatively stable. The study included an analysis of historical vegetation lines, showing a range of fluctuation of 25 feet over the 50 years of data.

The University of Hawaii's School of Earth Science and Ocean & Earth Science and Technology (SOEST) has prepared a series of coastal erosion studies for the Maui Planning Department. In the study for the Ka`anapali region, the project area was calculated to have an "annual erosion hazard rate" (AEHR) between .5 and 1.5 ft/year. A copy of the UH map is included as Appendix E.

Affected Environment: Impacts to coastal resources are typically classified as actions that impede natural coastal processes (including to wave or wind action), actions that affect the beach and near shore area, or locating structures where they would be affected by coastal processes. Such impacts to coastal processes are not anticipated for the following reasons:

- The action entails removing existing structure and impermeable surfaces from the nearshore area, creating a more desirable park-like environment, and
- The proposed improvements that could be of concern due to coastal erosion will be located landward of qualified "hazard areas" including:
    a) The FEMA tsunami hazard area
    b) The 30-year erosion hazard area included in the SOEST study
    c) The (proposed) County [shoreline history-based] Shoreline Setback using 50-year +20-foot distance based on the SOEST AEHR (from the shoreline to approximately 45-95' inland)
    d) The existing County [lot-depth-based] Shoreline Setback Area (from the shoreline to 132' inland)
- The proposed improvements are located considerably landward of the previous shoreline retreats identified in the Shoreline Evaluation.

Potential concerns for marine resources would include short-term construction-related pollution impacts coming from soil, construction materials, and petroleum products entering nearshore waters from runoff, wind, or erosion.

Typical concerns for long-term impacts include potential contamination of nearshore waters from project drainage. Since the project will be generally decreasing impervious surfaces and will be containing new drainage flows on-site, long-term impacts are not anticipated.

Potential Impacts and Mitigation Measures. The applicant has planned to minimize the possibility of impacts to coastal processes through planning the location of the proposed development adequately landward of the dynamic portions of the beach and shoreline.

Mitigation measures aimed at protecting marine resources focus on containing dust and project runoff during the construction period. The anticipated method of containment will be to enclose the project area with a combination dust/silt fence. Additional measures could include project watering for dust control, promptly vegetating bared areas, and controlling dust from equipment by covering truckloads. (These measures will be detailed in the project's BMP plan as described in the previous section on air quality)

6. Natural Hazards

Known Conditions. According to community-panel number 150003 0153 C of the Flood Insurance Rate Map, dated September 17, 1997, the majority of the Maui Marriott resort site is located in zone C, which is an area exposed to minimal flooding. The remaining portion of the project site is situated within zones A4 and V12. Zone A4 is an area of 100-year flood where base flood elevation has been determined. Zone V12 is an area where 100-year coastal flooding occurs. A copy of the FEMA flood map is included in Appendix K.

Potential Impacts and Mitigation Measures. Potential flood and tsunami-related impacts are avoided by locating the proposed improvements away from the nearshore area (where the V and A zones are present).

The project will be designed in accordance with current structural requirements of the Uniform Building Code to mitigate against seismic damage.

7. Terrestrial Biota

Known Conditions. The project area is heavily landscaped with introduced flora. Animal life in this urban coastal setting includes avifauna including the common myna, several species of dove, cardinal, house finch, and house sparrow. Mammals common to this area include cats, dogs, rodents, and mongoose. No endangered species of flora or fauna are known on the project site, and the project site is not known to be the habitat of any endangered species.

Endangered species that inhabit coastal waters include several species of whale, porpoise, seal, and turtle. Seals and turtles can use the shoreline area for resting, sunning and reproductive activities, although the frequency of such visits to Ka`anapali Beach is low.

Applicable Studies. A botanical assessment was conducted for the project by Char and Associates, Biological - Environmental Consultants; a copy of the summary report is included as Appendix F. According to the assessment, the vegetation of the areas proposed for the sequel project are landscaped and maintained. A few native species such as beach morning glory, hau, beach naupaka, and hala are found on the property, but these all have been planted there. All of these native species are indigenous, that is, they are native to Hawaii and elsewhere. None of the plants observed on the property is a threatened and endangered species, or a species of concern. The assessment concludes that the proposed project is not expected to have a significant negative impact on the vegetation on the site, or in the general region. It was recommended that the smaller materials (shrubs, ground covers) be transplanted and reused in the new landscaping.

Potential Mitigation Measures. Where practical, trees, shrubs, and ground covers will be retained and incorporated into the landscaping of the sequel project.

The project's construction contract will specify that if any marine-based endangered species come to occupy the shoreline area during construction activities, construction in that area will halt, and the Aquatic Resources Division of the Department of Land and Natural Resources will be contacted for proper treatment of the area.

8. Visual Resources

Known Conditions. The publicly accessible vantages that overlook the project include the ocean, the shoreline (including Hanaka`ō`ō Beach and Beach Park), and Hono`api`ilani Highway. Semi-public vantages include private roadways within the Ka`anapali Resort including Nohea Kai Drive, Ka`anapali Parkway. Neighboring private developments include the Hyatt Regency Hotel to the south, the Ka`anapali Ali`i residential condominium to the north. The Ka`anapali Vista subdivision is located approximately ½ mile east (landward) of the property, across the Resort's golf course and Honoapi`ilani Highway.

Affected Environment Shoreline Area. The project entails removing a parking garage, on-grade parking, a paved luau function area, and tennis courts from the shoreline setback area. In their place, the shoreline area will be planted with open lawns and landscape planting. The applicant feels that these planned withdrawal of resort structures from the shoreline area is consistent with public's desires for more open space along the Ka`anapali shoreline. The applicant feels that the proposed improvements to the shoreline area will enhance seaward and lateral views and create a desirable park-like environment by incorporating greater open space mauka of the walkway.

Affected Environment View Corridors. Mauka view corridors from the beach and shoreline area will be reduced due to the construction of the two proposed twelve/ten-story (stepped) buildings. The nature of the impact is similar to the obstructions from the existing developments, including the (11-story) Ka`anapali Ali`i Condominium, the existing (10-story) Marriott building, and the (8 to 12-story) structures of the Hyatt Regency Hotel. While the proposed buildings are 1 to 2 stories taller than their immediate counterparts, they will be set back further from the shoreline, which will tend to de-emphasize the size of the structures, and provide a larger buffer of open space, which decreases the feeling of enclosure from the beach and shoreline area. A simulated view from the beach at Hanaka`ō`ō Point is included in Figure 14C.

The widths of the structures as measured parallel to the shoreline are ~150-feet for the Lahaina building and ~210-feet for the Napili building. With the addition of these structures the amount of visual corridor through the applicant's property will be ~38%. Some owners of the adjacent Ka`anapali Ali`i Condominium expressed concern that the project will "wall-off" the coastline. By comparison, the high-rise sections of the Ka`anapali Ali`i development preserve ~26% of view corridor through its property. Unlike County restrictions related to floor area or lot coverage, there are no minimum standards or restrictions related to preserving view corridor.

The quality of view corridors from coastal vantages along Honoapi`ilani Highway are marginal along the south portion of the Ka`anapali Resort (where the Marriott property is located). The poor quality of views along this section of coastal highway is due to the low elevation of the highway, the large distance from the shoreline (approximately 2000 feet), and the screening of the shoreline by existing Resort development enhanced by mature resort landscape planting. Therefore, any obstructions due to the project are primarily obstructions of existing development and the sky, rather than the coastline or ocean.

Aesthetic perception of the proposed buildings within the Ka`anapali skyline is a subjective judgment. The applicant feels that the two proposed 12/10-story buildings will harmoniously complement the Ka`anapali Resort skyline due to compatible building heights and similar building spacing. Representatives of the Ka`anapali Ali`i Condominium have expressed via letter that they feel that the additional buildings will contribute to the perception of crowding within the Ka`anapali Resort, and consequently, decrease its desirability as a resort destination. Simulated and existing views from the Highway are included in figures 14A and 14B.

Similar to the coastal views along Honoapi`ilani Highway, ~~and minimal impacts have been noted from~~ vantages along the private roadways within the resort are obstructed from ocean views by existing development and landscape planting. Simulated views from Ka`anapali Parkway and KeKa`a Drive (as recommended by the Ka`anapali Operations Association (KOA)) are included in figures 15A, 15B and 15C.

It should be noted that the Hyatt Regency is considering additional development of the site adjacent to the applicant's property. The likely location would be adjacent to the proposed Lahaina building of the Sequel project. Like the sequel, the Hyatt project would be subject to the 12-story height limit and yard setbacks established by County (H-2) Hotel zoning, which limit the potential building envelope. Development by the Hyatt would further reduce mauka/makai view corridors through the south Ka`anapali region and potentially add to the perception of "crowding".

(Impacts to private views are discussed in section III-B and represented in Appendices O and Q.)

Applicable Studies. Scenic resources in the project area are described in the Maui Coastal Scenic Resources Study. Discussion of the study is included in Section IV-F of this assessment. Selections from the Study are included in Appendix G.

The study inventories valuable mauka/makai *view corridors in the* Ka`anapali region in sections 4.4 & 8.1.6. In the Ka`anapali region, important visual corridors from the Highway are identified as occurring over Hanaka`o`o Beach Park and over the Ka`anapali Resort north of KeKa`a Point. No important corridors are noted over the southern region of the Ka`anapali Resort where the project is located. A reasonable justification for this distinction is that the views over Hanaka`o`o Beach Park and northern Ka`anapali Region include views of the coast, ocean, and outer islands, while the views over the southern section are currently obscured by development and landscape planting

The study also identifies valuable coastal views and landforms along the shoreline. The shoreline between Hanaka`o`o Point and Wahikuli Park/Flemming Road is identified as a noteworthy coastal landform. A distinctive coastal view is identified from Wahikuli Park to Hanaka`o`o Point (shown in Figure 5B). The majority of the subject property is obstructed by the various 8 to 12-story structures of the Hyatt Regency from the Wahikuli Park vantage.

The West Maui Community Plan also provides guidance on visual resources. While the plan does not identify specific view corridors, it does recognize specific areas that should be protected as "open space". The action will not affect open space areas specifically identified in WCMP, including:

- Agricultural lands and gulches
- The open spaces and stretches of shoreline between the south boundary of the district and Puamana and from Kapalua to Nakalele Point
- The expansive landscape of agricultural and natural open space areas against the backdrop of the West Maui Mountains

- Any gulches listed on page 23 of the plan to be "integrated into the open space system"
- Natural coastal areas along major roadways

Applicable Guidance and Regulation. Hawaii's Environmental Review Law (Chapter 343 Hawaii Revised Statutes [HRS]) and the associated rules (Chapter 11-200 Hawaii Administrative Rules [HAR]) provide little discussion regarding the evaluation of visual resources. Section §11-200-12 of the rules, however, establishes criteria for determining if an impact is "significant"; criteria #12 regards views:

> §11-200-12 Significance criteria. (a) In considering the significance of potential environmental effects, agencies shall consider the sum of effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action.
>
> (b) *In determining whether an action may have a significant effect* on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action. In most instances, an action shall be determined to have a significant effect on the environment if it:
>
> (12) Substantially affects scenic vistas and viewplanes identified in county or state plans or studies; or,...

As evaluated above, the action will generally not affect or significantly impact any valuable scenic resources specifically identified in either the Maui Coastal Scenic Resources Study or the West Maui Community Plan.

~~Proposed~~ Potential Mitigation Measures. Mitigation measures that could reduce the visual impacts of the project by de-emphasizing the mass of the proposed improvements include:

- Provide increased building setbacks
- Provide increased building separation
- Reduce building height
- Reduce building width
- Stepping building height
- Incorporating landscape planting around structures to break up the lower visual mass

The applicant has incorporated several of these measures into the design options of the project. Option 1-5 de-emphasize the mass of the proposed buildings from the shoreline, by locating them further from the shoreline than existing developments in the project area, and utilizing landscape planting to break up the visual mass. Likewise, the design options 2 ~~and 3~~ through 5 will provide an additional buffer from the shoreline than the existing 132-foot shoreline setback for the proposed Napili Building ~~(See Figure 16).~~ Options 3 through 5 also show a progressive narrowing of the Napili building, which increases view corridors around the structure. Options 4 and 5 de-emphasize height by incorporating a stepped building height, which was recommended by the Ka`anapali Operations Association Design Review Committee and is recommended in the Maui Scenic Coastal Resources Study. Building height was increased between design options 1 and 5 to accommodate greater view corridors around the Napili building, while retaining the same number of units. Additionally, several owners of the adjacent Ka`anapali Ali`i Condominium suggested an increased building height to allow for greater building separation from the Napili building and eliminate the possibility of seeing the building's roof.

The project has been designed to respect to mass and spacing similar to that seen in the resort, ~~the proposed development will~~ in order to compliment the Ka`anapali Resort sky line in a compatible fashion.

9. Archaeological and Historic Resources

Known Conditions. Prior to disturbances by agricultural and resort development, the Ka`anapali Beach sand dunes were utilized for human burials. A discovery of burials was documented during the construction of the Ka`anapali Ali`i residential condominium just north of the Marriott. The site contained a maximum of 6 individuals and was found approximately 100 meters inland from the shoreline. The record concluded that the burials were of commoners dated from between 1700 and 1800 (Dobyns & Allen-Wheeler, 1982). Recent work in the Marriott Resort's courtyard in July 2000 revealed skeletal fragments of one and possibly more individuals that were disturbed during prior development. Otherwise, there are no known historic resources on the subject property.

Applicable Studies. Scientific Consultant Services (SCS) conducted an Archaeological Inventory Survey at the project site in November 2002. With input from the State Historic Preservation Division (SHPD) of the State Department of Land and Natural Resources (DLNR), SCS selected four backhoe trenches, which were excavated in the proposed construction areas. The excavations consisted of mainly imported fill; no cultural remains were identified. However, according to the study, the presence of at least one burial, recently reported in the middle portion of the lot, suggests pockets of cultural material may still exist. In view of the information, and after consultation with the Maui Island State Historic Preservation Division representative, the consultants have recommended monitoring for all below surface excavation during the proposed development.

Potential Impacts and Mitigation Measures. While recent subsurface investigation has yielded no cultural findings, there is potential for sub-surface discovery during construction activities. Prior to construction, a construction-monitoring plan will be submitted to the SHPD for review and approval. The plan will specify that if cultural materials are discovered during construction, work in that area will stop, and SHPD and the Maui Island Burial Council will be informed and consulted for proper treatment.

10. Hawaiian-Cultural Resources

Existing Conditions. The subject parcel is completely developed and there are no known natural or cultural resources present onsite. Public pedestrian corridors on the property include a hardscape pathway generally parallel to the beach that provides facilitated lateral access along the shoreline, and a 15-foot-wide hardscape path provided in conjunction with the Ka`anapali Ali`i residential condominium along the Marriott's northern property line. Ten parking stalls are provided onsite near the north access, and an additional eleven are available offsite next to the Ka`anapali Ali`i. As part of the development of the original hotel, a similar access and ten-stall parking area was provided on the south boundary of the property. The south access was subdivided into a separate lot and conveyed to the County of Maui.

Applicable Studies. Scientific Consultant Services (SCS) conducted a Cultural Impact Assessment for the project in November 2002; it is included as Appendix J. The assessment's findings stated that based upon community response, archival research, and the findings of previous archaeological investigation and construction/development along the Ka`anapali coast, it is reasonable to conclude that the exercise of native Hawaiian rights related to gathering, access, or other customary activities will not be affected and there will be no adverse effect upon any ethnic practices of beliefs.

Affected Environment. Based upon the Cultural Impact Assessment's finding that there are no cultural activities occurring on the project site, there is no affected environment. Modern accesses to and along the shoreline will be maintained.

B. SOCIO-ECONOMIC ENVIRONMENT

SMS Research prepared a Socio-Economic Impact Assessment for the proposed sequel project; it is included as Appendix I. The following descriptions of socio-economic impacts ~~are based on the~~ include summarized sections, calculations, and discussions from the Assessment.

1. Employment and Incomes

Construction. Construction of the Marriott Sequel project is expected to begin in ~~2005~~ 2006 and end in ~~January~~ December 2008. The construction period is estimated as 34 months. The direct workforce will include some 629 person-years of employment, i.e., some 222 full-time jobs per year, on average. On-site jobs will average about 175.

Additionally, the project will support 912 person-years of indirect and induced workers. The total direct, indirect, and induced employment associated with project construction comes to 1,541 person-years of employment over the entire construction period. Approximately 1,300 person-years would be located on Maui (i.e., all the direct construction work, and 75% of indirect and induced work.)

Workforce income associated with the project's construction will amount to $26.2 million in direct wages (on average, $9.2 million per year), and $24.8 million in indirect and induced wages. The total direct, indirect, and induced income associated with construction will exceed $50 million.

Operations. Direct operations employment associated with a time share property can be estimated in three ways:

- Jobs involved in maintaining the property itself (front desk, room service, housekeeping, landscaping, pool services, administration);
- Other jobs - either at the resort or elsewhere on Maui – supported by spending by visitors staying at the property; and
- Marketing jobs associated with selling the time-share units.

Marketing jobs exist for a few years. New marketing jobs will largely be filled by persons already working for Marriott's marketing operations at the Maui Ocean Club, rather than new hires, when sales of the units in the two new towers begin.

The amount of direct employment jobs are anticipated to range from ~~116~~ 115 in ~~2006~~ 2007 to ~~350~~ 365 in the peak year ~~2010~~ 2011. It is estimated that 120 of the jobs up to the peak period will be marketing related. About ~~88~~ 86 new on-site jobs are included in this figure. Once the marketing activity ends, direct jobs will stabilize at about ~~230~~ 241 full-time jobs, supporting an additional 181 indirect and induced jobs. SMS estimates the total Maui workforce in these direct, indirect and induced jobs as approximately ~~410~~ 428 jobs.

While the increased on-site employment attributable to the Sequel Project can be viewed as a return to historical levels, the conversion to a time share is expected to increase the off-resort share of direct jobs supported by visitor spending, and hence to constitute an overall increase in visitor-supported jobs.

2. Population and Housing

Visitor Population. The visitor population of the project has been decreasing with the conversion of the Hotel to a Timeshare (the Maui Ocean Club Project), and is projected to increase back to previous levels with the addition of new units (the Sequel Project).

The ongoing Maui Ocean Club Project is in process of physically converting the 720 hotel "rooms" into 312 larger timeshare "suites". When completed with construction and the sales of units, the MOC conversion will lower the guest density from that of the Hotel (which averaged ~575 parties, ~1440 people) to about ~320 parties and ~890 guests. The MOC conversion project received a SMA permit in 2000, and is approximately halfway completed.

The Sequel Project entails building 143 new timeshare suites. The greater number of units will increase the average guest load of the entire project to ~1460, which is essentially the same average load during the hotel period. The configuration of the visitor population will be fewer (but larger) parties (~475).

An important note of comparison is that during Hotel use, the occupancy would fluctuate seasonally from above 90% to below 70% and guest load would fluctuate from near 1700 guests and then drop to or below 1200 guests. Timeshare resorts experience a much more consistent occupancy. The fluctuations for the completed project are expected to be closer to +/- 3% (~50 guests).

During the sales period of the timeshare units (about 4 years), the number of parties and visitor population will be higher due larger component of "preview" customers and traditional "transient" hotel-style occupants. As owners buy the units, the number of parties will decrease and the average party sizes will increase. This is referred to as the stabilization of the resort. Projections for the sales period indicate that the visitor profile will be higher by about 50 parties (~528 total) and 40 persons (~1500 total). This projection assumed that sales of the MOC and Sequel would occur simultaneously, however, since the projects will overlap, the actual increase is expected to be less.

The 143 new units in the project are likely to have an occupancy of 582 guests during the sales period, which will drop after the sales period to around 572.

Calculations regarding the guest parties and guest load are included in Table 1 and Charts 1A and 1B.

~~The 146 new units in the project are likely to have, at maximum occupancy, about 4 persons per unit. The visitor population of the project could reach a maximum of 604 persons after the second building opens in 2008. An assumed average 95% occupancy would result in a population of 574 visitors.~~

The new visitor population is small in relation to the anticipated growth of visitors on Maui. If visitor arrivals and the average visitor census continue to grow by about 1.6% annually, the result will be an increase of about 700 new visitors on Maui daily each year. The new visitors staying in the two Maui Sequel towers will amount to about ~~35%~~ 42%of the anticipated growth in Average Visitor Census over the two years in which the buildings will open.

Resident Population. With new jobs created on Maui, workers can support their families. When the operations workforce stabilizes, the total population on Maui supported by operations-related jobs associated with the project will number about ~~700~~ 820 (including project-related workers) in about ~~240~~ 280 households.

Housing Demand. New jobs translate into new housing demand over time. Not all the direct, indirect, and induced workers associated with the project in ~~2010~~ 2011 stay on Maui over the long term. It is estimated that long-term demand for ~~39~~ 41 to ~~78~~ 81 new households on in the Maui housing market due to the project. This demand is likely to include some early demand from in-migrants in the period ~~2006~~ 2007-2010, but the larger share of demand would spread over the period 2010-2020.

Housing demand can also be seen in historical perspective. As noted earlier, the on-resort jobs associated with the Sequel Project will return the MOC workforce to the level found in early 1999, when the property was run solely as a hotel.

The estimated return of the MOC workforce to historical levels deserves note in light of the fact that the initial Special Management Area Permit for the hotel included a condition, whereby the developers made a commitment to provided affordable housing for employees of the property. That condition was met as part of a 1984 agreement, by which the County received contributions of land and money for development of public housing in Kelawea Mauka. Arguably, since the MOC workforce will be the same with the Sequel Project as it was as a hotel, and the number of units of the entire project will note exceed the amount during Hotel use, the employee housing impact of the new project is within the parameters covered by the 1984 agreement.

Housing Supply. Housing impacts of West Maui employment are spread over the entire island. This fact reflects an ongoing housing problem to which long-planned housing projects in West Maui may respond in the coming years.

Based on historical permitted construction of residential units and assumption detailed in the Socio-Economic Study, the average annual new resident construction could be about 723 units per year.

The housing demand estimates suggest that some ~~39~~ 41 to ~~78~~ 81 new project-related households would need homes. Even if as many as half of these needed homes in the same year, the new demand - 20 to 40 households - would be small in relation to new construction and to ongoing housing sales and rentals.

3. Fiscal Impacts

Fiscal impacts consist of the new revenues accruing to local government due to a project, offset by new costs also associated with the project. The applicant finds that no major new commitment of County and State funds is needed to support the project. Accordingly, the following deals only with new revenues associated with construction, marketing, and increased property values.

State of Hawaii. Development of the project involves investment in construction and in marketing the new units in the Sequel Project. Spending from these activities is anticipated to create new revenues amounting to $14.9 million for the State of Hawaii through ~~2010~~ 2011 (2002 dollars). Revenues are derived from excise taxes, corporate taxes, and personal income taxes.

County of Maui. The County would gain revenues from increased property values at the site. Estimates based on a factored County valuation of the existing Maui Ocean Club property show annual new taxes of about $0.5 million, and a cumulative impact of ~~$6.5~~ $6.0 million through 2020.

4. Police Protection

Existing Conditions. The Maui Police Department has a station at the Lahaina Civic Center, about a mile from the MOC. It is currently under renovation, and officers are operating from temporary quarters. On a given watch, five officers are assigned to cover the entire West Maui area, with one covering a beat including Ka`anapali and part of Honokowai.

In the resort, hotels attempt to lessen the demand for police services by warning guests to lock cars and lanai doors, and provide security on their properties.

Potential Impact. West Maui has a population of about 18,000 residents and, on average, 23,000 visitors. The additional visitor population attributable to the Sequel project (about ~~575~~ 571 persons) and employees in direct contact with them – at most ~~200~~ 240 workers in West Maui – amount to a service population increase of 1.9%.

Hawaii's police departments face manpower shortages due to budget limits and the challenge of recruiting. If the Maui Police Department is to maintain or increase the ratio of officers to its service population, it will need to increase the number of policemen over the coming years. The share of that increase attributable to the Sequel Project would be about a quarter of an officer's time. (That estimate is calculated as follows: 15 officers/41,000 persons in West Maui x ~~774~~ 811 additional persons =0.~~283~~ .0297.)

While anticipated demand is quantified in terms of service populations and government staff, the project's share of such costs has not been expressed in monetary terms. It should be clear, however, that the additional government costs ascribable to the project are appreciably smaller than the government revenues estimated in the analysis if fiscal impacts.

5. Fire Protection

Existing Conditions. The Department of Fire Control, County of Maui maintains a station at the Lahaina Civic Center, about a mile from the project site. The Lahaina Station and Napili Station together serve the entire West Maui area, with two engines and a ladder truck.

Potential Impacts. The project will be built to current fire codes, and so will be less likely to involve fire hazards than older structures. Plans will need to be approved by the Prevention Bureau of the Fire Department. If the project is built to current codes it should not represent an added impact on the Fire Department's resources.

The ladder in West Maui is 85 feet long, so it would not reach the top stories of the proposed Sequel Project – nor existing structures this height.

6. Medical and Emergency Service

Existing Conditions. Maui is served by Maui Memorial Hospital in Wailuku. It has approximately 200 beds. West Maui is more immediately served by doctors and clinics located in the district. Emergency services are provided by American Medical Response, which operates out of the Lahaina Civic Center.

Many West Maui residents view the current situation as unacceptable, and are pressing for the creation of an acute care hospital in their region.

Potential Impacts. Medical services are provided on an islandwide basis, not just for the district. The increased population associated with the project amounts to less than 0.5% of the de facto population of Maui Island. While the ongoing growth in population in West Maui may, sooner or later, make creation of a new emergency clinic or hospital in the region necessary, the share of demand from the Sequel Project is very small.

7. Education

Existing and Anticipated Future Conditions. Schooling on Maui is provided by the Hawaii State Department of Education and private schools. In the Lahaina District, public schools are located in Lahaina: King Kamehameha III and Princess Nahienaena Elementary Schools (through grade five), Lahaina Intermediate (grades six through eight) and Lahainaluna School (grades nine through twelve). Lahainaluna is the only DOE high school that can take boarders. These DOE schools are, according to current School Status and Improvement Reports, slightly below capacity for classrooms. For other facilities such as libraries, they may be well below standards set by the DOE. In sum, while facilities improvements are probably desirable, they are not critical for the core work of instruction at these schools.

Private schools in the district consist of Sacred Hearts School in Lahaina (grades K through twelve) and preschools. The Kamehameha Schools' Maui Campus is located outside the district, in Upcountry Maui, but draws students from all parts of Maui.

No new school construction is anticipated soon in Lahaina District. School sites have been included in the plans for large proposed housing areas, and these schools would likely be built in response to new demand as the number of residents increases.

Potential Impacts. The Sequel Project will create lodgings for transients, not residents, and hence will not include students in local schools. No direct impact is expected.

New spending by visitors will create jobs and hence support the growth of population and households on Maui. A total of 764 persons (including workers) will in time be supported by operations and operations-related jobs associated with spending by visitors staying in the Sequel Project buildings.

Combining data from the DOE with 2000 Census figures for Maui County, we can estimate average school enrollment among residents. For every 100 residents in 2000, there were:

- 7.95 students in Kindergarten through grade five;
- 3.72 students in grades six through eight; and
- 4.76 students in grades nine through twelve.

For the ~~704~~ 797 persons supported by direct, indirect and induced operations jobs on Maui as of 2011, this suggests a total DOE school enrollment of ~~126~~ 131 students. Those students would be spread throughout Maui, since they are supported by jobs at locations throughout the island (and Maui workers, especially West Maui workers, need not live near their place of work).

While Maui County, following projections provided by DBEDT, anticipates continuing population growth, the State Department of Education has recently emphasized that the public school population is growing only in a few areas (DOE, 2002). Leeward Oahu and Maui Districts have seen major growth since 1990. On Maui, the DOE has responded with new school construction, in Upcountry, South Maui, and Central Maui.

The new school population associated with the project will increase over the next few years, as part of the overall continuing growth to be expected on Maui. It will be located in or near residential areas throughout the island, not one particular area. In light of these factors, the impact is expected to be small on any one school, and would not create significant new demand for services.

8. Recreation

Existing Conditions. Public recreation in West Maui is available in the ocean, reached through beach areas such as Ka`anapali and State and County beach parks. Also, Maui County provides recreational facilities at the Lahaina Civic Center (gymnasium, tennis courts) and sports fields in Lahaina. The County operates some 130 parks and recreational facilities on Maui, Molokai and Lanai. At Ka`anapali, beaches are accessible to the public. For resort guests, beaches, nearby open areas and pools are major recreation sites.

Potential Impacts. The project will increase the population staying at MOC by some ~~574~~ 571 persons (to a potential total of approximately ~~1,540~~ 1,500 visitors ~~[at 95% occupancy]~~) while adding to the on-site recreational resources. Two new pools are included in the plan. More open space near the shore will be available, especially on the northern side of the property. The net result of spreading pool areas, poolside areas and open space near the beach appears to be commensurate with the increased population. (Oceanfront space will not change. However, the critical resource that can be affected by increased demand at this and other Hawaii resorts is rarely the beach and ocean. Instead, space from which to enjoy views of, and occasional visits to, the beach and ocean is typically crowded. By increasing open space and poolside space, the project responds effectively to the increase in visitor demand.)

Visitors staying at the MOC and residents supported by jobs associated with the MOC will use State and County park facilities on Maui. The numbers involved are small relative to both the current user populations and available facilities.

9. Impacts to Adjacent Properties

The major likely impacts consist of construction-period irritants, largely felt in the immediate area around the Sequel Project site, and long-term economic growth for the resort and West Maui. The immediate neighborhood consists of the Maui Ocean Club and the adjacent properties – the Hyatt Regency and the Ka`anapali Ali`i.

Planning phase. News of the project has occasioned concern and angry responses from some owners of Ka`anapali Ali`i property, who see the project as affecting their quality of life and cash flow in the future.

Construction phase. The major issue under discussion with Ka`anapali Ali`i owners, impacts of construction on residents and owners nearby, affects all three of the properties in the immediate area. Owners and other users of time share units within Maui Ocean Club will be nearest to the construction and hence will be most affected by noise, vibration, dust and traffic associated with construction activities. Owners and occupants of Ka`anapali Ali`i and the Hyatt Regency will be shielded from some of the construction irritants by the buildings of the Maui Ocean Club, as well as by dust screens and other standard precautions.

The extent of direct construction impacts cannot be fully predicted. ~~since details of timing and construction practices remain to be set.~~ Nor, based on available data, can indirect impacts such as loss of rental income be estimated with any certainty. However, there is ample evidence to conclude that the impacts will be much less than the worst- case scenario -that all revenues will be lost during the construction phase.

Construction impact will be strongest during pile driving, and will be less (or absent) for particular neighbors during parts of the construction period. Potential impacts on occupancy and rates would not occur throughout the construction period. Instead, times in which construction activity is most audible and visible from nearby units would be most likely to result in impacts.

An impact on occupancy could well affect some Ka`anapali Ali`i owners for part of the construction period, but the Condominium's main rental pool managing agent and the condominium workforce would be little affected. Taxes derived from rentals and wages would accordingly also be little affected. *(See Appendix I for additional discussion)*

Emphasis is placed here on Ka`anapali Ali`i, since concern has been strong among its owners. Impacts are expected to be limited to the sides of Buildings Three and Four facing the MOC property. Units at the seaward and inland extremes of these buildings will be less affected, as they are more distant from construction and have only partial views of the construction area. (Noise impacts may be more general, especially during foundation work. ~~The extent of those impacts is being studied, and different methods of foundation construction are being examined to see whether approaches that would limit noise impacts are feasible.~~)

Owners and visitors at the Maui Ocean Club will not only have to deal with irritants during the construction phase, but will also lose amenities - notably tennis courts - during the construction period. They will enjoy increased open space near the beach after initial work on project construction is complete. Owners and visitors at MOC are not expected to consider the construction as a loss of income or value, since they have no reason to expect long-term impacts on their units' value. As owners within MOC, they are likely to see the construction as part of the development of their project, rather than an intrusive activity by a neighbor.

As noted above, Marriott has already found it possible to operate the resort to the satisfaction of both guests and the corporation with major renovations being done in the existing buildings. Apart from the periods of foundation work, the impact of construction on quality of life should be similar to or less than that experienced by guests in the recent renovations.

Mitigation of Construction Related Impacts. <u>Mitigation measures suggested by the applicant, include:</u>

- <u>Construction related dust, vibration, noise, and traffic impact mitigation measures, as identified in Section III of this report</u>
- <u>Limiting hours of construction, consistent with Department of Health rules for noise permits</u>

- Siting of buildings to increase building separation, lessening direct construction impacts
- Scheduling construction to least impact peak occupancy seasons
- Participating in mutually beneficial partnerships that could boost occupancy at neighboring rental properties

Measures suggested by owners and operators of the KAC condominiums, include:

- General concerns by several owners who wish to confirm that the applicant will be responsible for cleaning due to construction related dirt and dust
- Inference that the applicant should directly compensate KAC stakeholders for (perceived) losses in rental income that would occur during construction of the project. Some stakeholders estimated losses only during pile driving; others went as far as saying that there would be a total loss of income during the entire construction period.

Mitigation measures selected by the applicant, include:

- All Measures suggested by the applicant (above)
- Measures aimed at reducing dust impacts, as well as ensuring that the construction contract ensures responsibility of the contractor to provide for the cleaning of any construction related dust impacts.

The applicant does not agree that direct compensation based on perceived damages is an appropriate mitigation measure for the following reasons:

- The applicant feels that KAC owners' point of view that no construction would or could ever occur is unrealistic and unreasonable. The applicant finds it most reasonable to consider that further development and redevelopment of the resort is likely, inevitable, and should be anticipated by all stakeholders. Factors contributing to this conclusion include:
    - Basic due diligence by property purchasers would reveal that much of the resort is under-developed with respect to zoning constraints, and that the allowable building envelopes include the areas adjacent to the existing developments. Information on the resort's zoning restrictions is readily available and was established over 40 years ago.
    - Many of the buildings in the resort are nearing 30 years in age. Redevelopment of aging buildings is inevitable.
    - Economic factors common to the visitor industry such as competition, increasing property taxes, and changing visitor preferences encourage the incremental optimization and redevelopment of resort properties

- There are common legal means to secure protections from adjacent development, however they have not been implemented (or purchased) by the KAC. Such measures could include:
    - CC&R restrictions that prohibit or limit redevelopment, require design approval by neighbors, or establish view corridors & restricted building envelopes
    - Viewshed Easements, which would protect a view corridors across a neighbor's property (i.e. the northern part of the Marriott property) from development. Such and agreement would compensate the party who foregoes the right to development.
- Perceived damages are highly subjective, and not measurable before the fact. After the fact measured damages would have to incorporate global economies & visitor trends, marketing, and competition.
- The applicant does not concur with the assumption that the KAC owners "rights" to an uninterrupted environment supercede the applicant's right to develop its property. The applicant does not feel it has to pay its neighbor for the right to develop its own property, as long as improvements are constructed within the constraint of all pertinent laws meant to protect health, safety and welfare. The applicant believes that supporting such an assumption would set a new precedent, which would lead to abuse. The applicant believes that such a precedent would be damaging to its company, and would discourage infill and redevelopment in the county of Maui.
- To the applicant's knowledge, no such compensations were offered or required to the Marriott or Westin resorts during the construction of the Ka`anapali Ali`i Condominium. To the applicants knowledge, there have been no such compensations as part of any development in the Ka`anapali Resort.

Operations phase. The Sequel Project transforms the Maui Ocean Club from a time-share resort with amenities characteristic of a more conventional hotel (ballroom; luau area) into one focusing on the needs of its specific clientele. For visitors and owners staying at the MOC, the result will be a quieter resort.

From some Ka`anapali Ali`i units, the project will affect views. Currently, units in Building Three, stacks two and four, and Building Four, stacks one, three and five enjoy partial ocean views largely over the Maui Ocean Club property. The Napili Tower will be located about ~~110~~ 150 feet away from Building Four, stack one, and will be visible from adjoining stacks. Most of the users of these apartments will enjoy less ocean view over the MOC property than they do at present.

A few Ka`anapali Ali`i residents thought that the project would lower the value of their units, either because it would lessen the amount of their ocean views or because time shares would increasingly compete with their condominium units on the rental market. SMS found no likely long-term value impact ascribable to the project, for the following reasons:

(a) The units in Ka`anapali Building Four that will see the Napili Tower only have partial ocean views at present. While those views will be reduced, the impact is one of degree, not kind.

(b) Both now and in the future, the views in question are over the Maui Ocean Club. They are not direct views of the ocean, but of the adjoining resort. Ka`anapali Ali`i owners do not have any easement or agreement that would grant them exceptional rights over their neighbor's rights to develop property.

(c) The distance between Ka`anapali Ali`i and the Napili Tower is large enough that prospective buyers can accept the new building as part of the view, not as an immediate intrusion. (This comment is based on studies in Waikiki, where differences in views did not correlate in a clearcut way with differences in valuation and sales prices [SMS 2001].)

(d) If the developing resort time share market will compete with Ka`anapali Ali`i for its clientele, that fact is not an impact of the project, but of the changing market. The Starwood time-share resort now being developed, the ongoing conversions at Maui Ocean Club, and other planned time-share developments also respond to that changing market.

<u>Simulations of the existing and resultant view corridors from the affected KAC stacks are included in Appendix O. Additional socio-economic analysis of the view corridor data is provided in Appendix I.</u>

Project Design in Consideration of Private Views from Adjacent Developments. Although impacts to private views have been carefully evaluated in the pre-consultation and design phases of the proposed action, inclusion of these impacts and the proposed mitigation measures described below are intended to be evaluated in the context of the following criteria:

- Impacts from private vantage points are not impacts to the public
- The potential for view obstructions from the proposed development has been a foreseeable impact during the development and purchase of neighboring residential projects. The proposed development is consistent with the Maui County zoning regulations relative to lot coverage, developable floor area, height and setbacks that have existed since planning and initial development of the Ka`anapali Resort more than forty years ago

- Ka`anapali is a master-planned resort; the section of shoreline area which includes the Marriott property has been designated for high-density hotel development

Developments that partially overlook the Maui Ocean Club (MOC) site include the adjacent Hyatt Regency Hotel, business/commercial offices at the top of KeKa`a Drive (approx. 3200 feet east of the project), the adjacent resort golf course, the Ka`anapali Vista residential subdivision (approx. 3200 feet north of the project), and to a lesser extent- other Ka`anapali Golf Estates residential subdivisions located north of the project and above Honoapi`ilani Highway.

As described above, the most affected private development is the adjacent eleven-story Ka`anapali Ali`i residential condominium (KA). The KA's south towers (2) have been oriented so that their primary views are across a substantial portion of the MOC site. The KA's southerly seaward tower is oriented so that its primary view is toward the ocean and across the northern portion of the MOC property, which is currently developed with parking lots and tennis courts. The KA's landward tower is oriented towards the mountains, so views are over the northeast corner of the MOC property, which is currently used for parking. The corner units in the landward tower also have a window facing the ocean. The residential condominium does *not* have a viewshed easement across the MOC property. A study of the KAC views is included as Appendix O.

Proposed Mitigation Measures- Private Views. As stated above, there are reasons to evaluate impacts to private views differently than those to public views. Because private view impacts are the foreseeable affects of planned development, they typically do not need to be mitigated. Nevertheless, the following design measures have been proposed by the applicant to create a more desirable visual environment for the KAC occupants and lessen the visual impacts of the proposed development:

- Aligning the narrow end of proposed Napili building towards the KA units, thereby decreasing the visual impact
- Incorporating horticultural relief as architectural articulation into the building façade, to enhance the aesthetic design and reduce the perceived scale
- Designing an off-street parking plan so that the majority of parking is on the south side of the Marriott property, thereby reducing the size of the parking garage nearest the KA
- The proposed 1.5 story Napili parking garage will be screened with landscape planted trellises, similar to the adjacent parking garage at the KA

- Replacing tennis courts and on-grade parking with landscape planting in the shoreline area, thereby improving views along the shoreline and towards the ocean
- Voluntarily siting the proposed Napili building landward, thereby preserving ocean views from KA south-facing units ~~(described in detail below)~~

KAC unit owners suggested the following measures during the Draft EIS review process, and informally to the project design team via phone conversations, email, and meetings held after the Draft EIS review period:

- Increasing building separation between the proposed Napili Building and KAC buildings 3 and 4 by:
  - Eliminating the bays of the proposed Napili Building closest to the KAC
  - Siting the Napili building further south
  - Designing the Napili building to be higher and narrower
  - Moving units from the Napili building to the Lahaina building
- Increasing resultant ocean view corridors from KAC building 4 by:
  - Rotating the Napili building
  - Providing greater building separation
  - Imposing a voluntary siting setback that preserved all ocean views from Building 4
- Eliminating views of the proposed Napili Building Roof by building a taller structure
- Swapping the locations of the Lahaina and Napili buildings

Mitigation measures selected by the applicant include:

- All design features originally suggested by the applicant (above)
- The majority of the design changes suggested by the KAC (above). In response to comments received on the design included in the Draft EIS (Design Option 3), the applicant revised the project design and presented it to self-organized KAC owners via meetings held in Ka`anapali and Northern California. Additional feedback during these meetings led to the design of Design Option 5, which is presented as the preferred option of the Final EIS. Detailed analysis of each option is included in Section II-D (Alternatives) of this report. Option 5 resulted in the following benefits to private views from neighboring properties.
  - Increased building separation from the KAC (130 feet from 110 feet)
  - Increased ocean view corridors from KAC building 4 (demonstrated in a view study included as Appendix O)
  - Increased view corridors from the (upland) Ka`anapali Vista neighborhood (a view simulation is depicted in Appendix Q)

The applicant was unable to swap the locations of the Napili and Lahaina buildings due to constraints of the building envelope on the South side of the property (additional information is included in Section II-D). The applicant was, however able to narrow the Napili building, making it more like the Lahaina building. Narrowing of the building also increased the view corridors from KAC building 4, however not to the full extent desired by some KAC owners. The additional design option alternatives did, however result in significantly more view corridor over the applicant's property as demonstrated in Appendix O.

~~The preferred alternative sites the proposed 10-story Napili building to preserve primary views from the Ka`anapali Ali`i towers. An extensive pre-consultation process has resulted in an evolution of siting options that is documented in Figure 16. The Figure depicts the following configurations:~~

- ~~*Option 1.* The location for the proposed Napili tower that respects all zoning and shoreline setbacks, and optimizes the potential views from the development.~~
- ~~*Option 2.* The location of the Napili tower showing a voluntary "site line" setback that preserves the entire ocean view of the KA southerly seaward tower. This option was developed and presented to the Ka`anapali Ali`i during the pre-consultation period.~~
- ~~*Option 3.* The location of the proposed Napili tower with a decreased building width. The benefits of this option include increased distance between the proposed building and the Ka`anapali Ali`i, and greater ocean views from the corner units of the KA landward tower. This option was developed at the suggestion of KA unit owners during the pre-consultation period. This option is the preferred alternative depicted in the EISPN and Draft EIS.~~

~~It should be noted that all options preserve the (primary) mountain view from the KA landward tower. From the perspective of the applicant, the voluntary setbacks depicted in siting options 2 and 3 will diminish the optimal views from the proposed Napili building units due to the increased distance from the shoreline and increased presence of the KA seaward tower. Views along the shoreline from the seaward KA tower will arguably improve under options 2 and 3 due to the replacement of hardened surfaces in the shoreline area with landscape planting.~~

10. Impacts to the Resort

Anticipated construction period impacts to the Ka`anapali Resort consist of (a) noise from pile driving and (b) traffic obstruction due to large vehicles and problems with parking. The first appears unavoidable, although it can be limited in hours and season.

The latter can be controlled through construction timing and provision of parking on-site for construction vehicles and workers, as planned.

An impact of the project is the encouragement it gives to renovation of the resort and to transformation of the resort to time-shares. Without the luxury properties that have given Wailea prominence, Ka`anapali risked becoming a less desirable resort. The move to hotel-backed time-shares brings high occupancies and draws on Ka`anapali's strength, i.e., the presence of major hotel brands which will assure quality of lodgings.

Marriott has already established the point that time-shares are an effective way to renovate and reposition a Ka`anapali hotel. (Others have tried other approaches. For example, Ka`anapali Beach Hotel emphasizes Hawaiian culture and cultivates loyalty among returning guests.) Hence the Sequel Project does not so much set a precedent as continue the trend begun at MOC and continued in the construction of the Starwood property at North Beach.

The project will bring greater density along the axis of the hotel, but open up more space along the shore. The result will be an increase in the experience of open space for visitors staying in this and the other beachfront resorts. The view impact of density is then more likely to be experienced from inland locations.

Time-share visitors stay longer than others, on average, yet spend comparable amounts per person per day. With longer stays, they will tend to visit other parts of the Ka`anapali resort and of Maui Island, so that the increased visitor count will affect attractions, restaurants and stores throughout Ka`anapali and West Maui. Again, the increased visitor count will result in increased demand for golf at the Ka`anapali courses and, to an extent, elsewhere.

11. Impacts to the Region

Neighbor Island time-share visitors are affluent and stay longer than other US Mainland visitors. They are likely to spend more time away from their lodgings, so their spending is spread over a larger area. The Sequel Project (along with time share conversion of the Maui Ocean Club and other time share projects) will contribute to the West Maui and Maui Island economies, supporting increasing numbers of visitor-related jobs.

With continuing prosperity at Ka`anapali and growth in the local workforce, pressure for more resident housing in West Maui and for improved road access into and out of the region will also continue. The share of that pressure attributable to the project is, however, very small, since these are longstanding issues of concern to the region.

C. INFRASTRUCTURE

Warren Unemori Engineering has prepared a Preliminary Engineering and Drainage Report for the project. The report addresses the existing infrastructure, proposed modifications, and supporting calculations where applicable. The following descriptions of existing infrastructure and potential impacts are based on the summarized sections, calculations, and discussions from the Report. A copy of the Preliminary Engineering and Drainage Report is included in this document as Appendix K.

1. Domestic Water

Known Conditions. Ka`anapali Resort is served by a private water system owned and operated by Aqua Source Company. The source of potable water for the private water system is four wells with an aggregate design capacity of 3.7 MGD. The current pumping rate of the wells is around 2.9 MGD. The total water consumption for the existing 391 hotel rooms and 154 timeshare units in June 2002 was 4,904,000 gallons. Assuming 92% occupancy this translates to around 300 gals. per unit, per day.

Potential Impacts. Based on the consumption rate of 300 gallons per unit per day for the existing hotel and time-share complex, the average daily water demand for the 146 time-share addition is estimated to total 146 x 300 = 43,800 gal/day. This is comfortably within the surplus pumping capacity of the water supplier. Under Design Option 5 of the propose development, this method of calculation would be slightly less (143 x 300 = 42,900 gal/day).

Although the 300-gal/day rate incorporates some units that have lockouts, a more conservative figure of 350 gal/day has been suggested. A theoretical maximum use, assuming that every lockout unit of the Sequel addition would be utilized, and assuming that every unit was to be at the higher per unit use (350 gal/day) would result in a demand of 96,600 gpd (276 keys x 350 gal/day). It should be noted such a utilization of lockouts is considerably inconsistent with use patterns at similar timeshare facilities operated by MVCI, and therefore such a calculation may be helpful in determining the adequacy of capacity, but would not reflect typical use. A more consistent projection of the number of parties that will occupy the Sequel project is around ~159. Using the conservative rate, use would be approximately 55, 650-gal/day. Since the available surplus capacity of water supply is in the range of 800,000 gal/day, capacity is available to the Sequel project under any of these projections.

Fire flow for hotel-zoned districts is 2,000 gpm. The existing source, storage and transmission system can readily provide this fire flow rate. Moreover, since the timeshare units will be equipped with fire sprinklers and the building will be of Type 1 non-combustible construction, the fire flow demand is expected to be less than 2,000 gpm after all the appropriate credits (basis for reduction) are applied.

Potential Mitigation Measures: The County Department of Water Supply has provided the following potential mitigation measures aimed at water conservation:

- Use brackish and/or reclaimed water for non-potable water uses, such as dust control and irrigation during and after construction
- Utilize low-flow fixtures and devices, including faucets, showerheads, urinals, water closets and hose bibs, water conserving washing machines and ice-makers.
- Maintain fixtures to prevent leaks
- Prevent over-watering by automated systems: provide rain-sensors on all automated irrigation controllers.
- Look for opportunities to conserve water: use brooms instead of hoses, use hand operated spray nozzles, check for leaks

2. Wastewater System

Known Conditions. A 12-inch gravity sewer line on Nohea Kai Drive collects wastewater from hotels on the makai (west) side of this road and directs it into a pump station located approximately 200 feet south east of the MMS project site. This pump station conveys wastewater to the County's 21-inch gravity transmission line on Hono`api`ilani Highway.) A pump station near the intersection of Hono`api`ilani Highway and Ka`anapali Parkway and a series of force mains and gravity interceptors then transport wastewater from Ka`anapali Resort and Lahaina Town to the Lahaina Wastewater Reclamation Facility (LWRF) south of Honokowai Gulch for treatment and processing.

Using a peaking factor of 2, the County's Division of Wastewater Reclamation (CDWR) estimates that the pump station and transmission system in Ka`anapali is presently operating at roughly 67% of capacity. ~~They also indicated that in June this year, the average daily flow through the LWRF was around 6.38 MGD.~~ Daily flow through the LWRF for the first two quarters of 2003 has been 5 Mgd. *(This correction has also been made to the Preliminary Engineering Report in Appendix K)* The plant capacity was up sized in 1995 from 6.7 to 9.0 MGD. The average daily flow capacity of the facility is now 9.0 MGD, and the plant has a design peak flow capacity of 19.8 MGD to accommodate higher wet weather flows

Potential Impacts and Mitigation Measures. An estimate of wastewater generation was made by assuming that 80% of the potable water used ends up in the wastewater stream. The CDWR uses a value of 250 gpd for hotel rooms without laundry facilities. At the more conservative rate, the project is expected to generate around 36,500 gpd of wastewater.

Accounting for the projected number of parties due to occasional lockout use, the Sequel project would generate around 39,750 gpd of wastewater (159 parties x 250gpd). Under maximum lockout use (which is not typical, as mentioned in the previous section on domestic water), generation would be approximately 69,000 gpd (276 parties x 250gpd). Given current surplus capacity of the LWRF is 4 Mgd, adequate capacity is available.

Based on recent information obtained from the CDWR, the existing pump station and force main in Ka`anapali Resort as well as the County's transmission and Wastewater Reclamation Facility in Lahaina all have ample reserve capacity to handle the additional wastewater that will be generated by the proposed project.

3. Drainage

Known Conditions. The resort is located on a 15.9-acre parcel. Redevelopment will occur in area south of the existing hotel (Area 1) that encompasses approximately 3.2 acres, and an area north of the existing hotel (Area 2) that is approximately 4.3 acres.

Onsite surface runoff from Area 1 project site currently generates approximately 12.8 cfs for a 50-yr. recurrence interval 1-hour duration storm. The majority of the surface runoff volume being generated by the existing parking structure and parking lot is being intercepted by grated inlet type catch basins and an existing underground drainage system and directed into two (2) existing dry wells located in the landscape areas between the ocean and the existing concrete beach walkway. The remaining portion of the onsite runoff sheet flows either into the two (2) existing dry wells or landscaped areas.

Onsite surface runoff from Area 2 project site currently generates approximately 16.2 cfs for a 50-yr. recurrence interval 1-hour duration storm. The majority of the surface runoff volume being generated by the existing parking lot is intercepted by grated inlet type catch basins and an underground drainage system and conveyed to a drywell located in the landscape area between the ocean and concrete beach walkway. The majority of the surface runoff volume being generated by the existing tennis courts currently sheet flows into the adjacent landscape and lawn areas.

Potential Impacts and Mitigation Measures. According to preliminary engineering calculations, the post development onsite surface runoff volumes generated from Areas 1 and 2 are expected to be approximately 11.9 cfs and 16.4 cfs, respectively for a 50-yr. recurrence interval 1-hour duration storm. Therefore, these project sites will have a net decrease of approximately 0.7 cfs. The primary reason for the decrease in onsite surface runoff is due to a reduction in impervious areas and an increase in landscape area.

The proposed drainage plan for the subject project is to intercept portions of the surface runoff generated after development and convey the intercepted surface runoff to a new subsurface detention facility to be installed in both Areas 1 and 2 where space permits. The new subsurface detention facilities will be connected to the existing dry wells to provide additional retention capacity.

4. Solid Waste

Known Conditions. Non-recyclable solid waste is presently collected by contracted private firms and transported to the County's solid waste transfer station at Olowalu or directly to the County's landfill site in Puunene in Central Maui.

Potential Impacts and Mitigation Measures. Construction solid waste will be handled in accordance with the County's solid waste policy, recycling materials that may be reusable whenever feasible.

The proposed project will involve the demolition of the existing parking structure, ballroom, tennis courts, and on-grade parking areas. Preliminary discussions with the general contractor have indicated that certain materials from demolition, such as steel members and re-bars will be shipped to Oahu for re-cycling. Other construction materials such as concrete and asphalt may be crushed and re-used for fill material, where feasible.

5. Electrical and Telephone Systems

Known Conditions. Electrical and telephone distribution systems in Ka`anapali Resort have all been constructed underground. The MMS project will be served off the underground distribution system on Nohea Kai Drive.

Potential Impacts and Mitigation Measures. According to the system engineering staff at MECO, the utility has adequate capacity to handle the additional load that will be created by the proposed timeshare units.

D. TRANSPORTATION

Known Conditions. Access to and egress from the project is via three driveways along Nohea Kai Drive, a two-way divided roadway. The roadway is not striped for four lanes but there is sufficient width to do so in the future. Nohea Kai Drive intersects with the Resort's main thoroughfare, Ka`anapali Parkway. This roadway is also a two-way divided roadway that is not striped and has room for four lanes. Both roadways are privately owned. The intersection of Ka`anapali Parkway at Nohea Kai Drive is unsignalized. Ka`anapali Parkway intersects, with Hono`api`ilani Highway, a State Highway which provides primary access to the central isthmus of the island, where the primary airport is located.

Affected Environment: Since the existing project is undergoing a conversion that drastically reduces the number of guestrooms, traffic generated by the project is anticipated to decline. The conversion entails converting the original 720-unit hotel to a 312-unit (timeshare) facility by converting 2 to 3 hotel units into a timeshare suite. The Hotel is approximately half way through the conversion, which was originally approved for 340 units.

~~The proposed action will add an additional 146 timeshare suites. 280 of the suites will have a lockoff unit, a bedroom that can be closed off and utilized by a separate party. Approximately 20% of lockoff units in the lockoff outfitted suites are anticipated to be in use at any time.~~

Between 500 and 650 parties would be staying at the resort during typical hotel occupancy (70% and 90% occupancy respectively). At average occupancy (~80%), 576 parties would be staying at the Hotel.

The Maui Ocean Club conversion project reduced the number of guestrooms at the Hotel, which is anticipated to lower the party count to approximately 317 parties upon completion and sale of the units.

The Sequel Project entails building 143 new timeshare suites. The greater number of units will increase the average stabilized guest load of the entire project to ~1460, which is essentially the same average load during the hotel period. The configuration of the visitor population will be fewer (but larger) parties (~475).

Since the average party count under the project is anticipated to be approximately 100 less than during the Hotel period, it is reasonable to assume that traffic will be less than during hotel use.

Applicable Studies. Phillip Rowell and Associates has prepared a Traffic Impact Assessment for the project; it is included in Appendix L. The methodology of the analysis included measurement of existing traffic generated from the project, background traffic levels, and extrapolating of future traffic conditions with and without the project (with the future design year of 2007). Measurement of current traffic conditions shows that intersections in the study area were operating at acceptable levels of service, with the exception of the left turns movement from Nohea Kai Drive to Ka`anapali Parkway during the PM peak hour. Per vehicle delays for this movement were measured at 54 seconds resulting in a "level of service" grade "F". The level of service rating system categorizes traffic flow in a scale from A to F reflecting best to worst conditions respectively. Service levels A-D are typically considered acceptable peak hour conditions in urban areas.

At the design year (2007) most intersections in the project area will operate at acceptable service levels. Problem traffic movements include left and right turns onto Ka`anapali Parkway from Nohea Kai Drive. Left turns from this intersection will operate at a level of service "D" in the AM peak hour and "F" in the PM peak hour. Right turns from the intersection will operate at level of service "B" in the AM peak hour and "D" in the PM peak hour. 2007 traffic levels accounted for general 1.6% annual growth along the roadways, an (estimated) 100-unit expansion of the Hyatt Regency (also located on Nohea Kai Drive), and additional growth of traffic on Ka`anapali Parkway due to residential and commercial projects in the Resort that are under construction or have received developmental approval.

The study estimates that the project will add 20 trips to the AM peak hour traffic and 1 trip in the PM peak hour traffic on the adjacent street (Nohea Kai Drive). This amount of traffic is marginal, and below the threshold identified by the Institute of Transportation Engineers (100 trips) as the point where a traffic impact study should be prepared. Maui County has not established a threshold value. According to the modeling used in the analysis, the increase due to project related traffic will not affect the level of service of any traffic movement at the intersection of Nohea Kai and Ka`anapali Parkway. Even less traffic due to the project would be anticipated at the Ka`anapali Parkway/Honoapi`ilani Highway intersection.

Construction-Related Impacts. Construction of the project is anticipated to occur between 2005 and 2008. During this period, traffic in the general area will increase due to the arrival of construction personnel, the transportation of construction equipment and vehicles, the delivery of construction materials, and the off-site recycling or disposal of construction wastes. Construction vehicles and delivery vehicles in particular may be oversized and slow moving, providing an inconvenience to local traffic movement. Additional concerns may include damage to local roadways from construction vehicles and the occupation of available parking by construction workers.

Construction-Related Potential Mitigation Measures. Potential mitigation of traffic related impacts might include:

- Restricting the deliveries during peak traffic hours to limit the inconvenience to motorists
- Restricting on-street parking of construction vehicles
- Requiring the project contractor to repair any damage caused to local roadways
- Requiring the project contractor to locate part or all of the construction-related parking facilities off-site, and provide shuttle services from the parking area to the project site for construction workers
- Scheduling the arrival and departure of construction workers to avoid peak traffic periods where practical

Selected mitigation measures will include:

- The project contract will specify that the contractor is to repair any damage caused to local roadways
- The following measures will be incorporated into the project contract upon establishing their feasibility with the selected contractor:
  - Restricting the deliveries during peak traffic hours
  - Restricting on-street parking of construction vehicles
  - Requiring the project contractor to locate part or all of the construction-related parking facilities off-site, and provide shuttle services from the parking area to the project site for construction workers
  - Scheduling the arrival and departure of construction workers to avoid peak traffic periods where practical

E. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF HUMANITY'S ENVIRONMENT AND MAINTENANCE OF LONG-TERM PRODUCTIVITY

Short-Term Uses. The proposed project will involve short-term uses of the environment during the construction phase. These uses will have both positive and negative impacts. Construction activities associated with the proposed project will create some temporary adverse impacts, including disruptions of traffic patterns, increased noise, and fugitive dust ~~nuisances~~ impacts in the vicinity of the project site.

In the short-term, the project will also confer some positive benefits in the local area. Direct economic benefits will result from construction expenditures both through purchase of material from local suppliers and through the employment of local labor. Indirect economic impacts may include benefits to local retail businesses resulting from construction activities.

While there are no existing plans for alternative uses of the project site, development will preclude use of the existing tennis courts, on-grade parking, ballroom, and luau facilities. Potential uses of the land would not be curtailed, since the proposed transient residential facilities are considered appropriate uses in terms of planning and zoning.

Long-Term Productivity. Long-term productivity of the site should be enhanced by the proposed project. The development involves a long-term commitment of the land for the proposed uses. Once raised to a higher density use, it is unlikely that the land will revert to a lower intensity of usage in the foreseeable future. Similarly, this will likely preclude other alternative development options for the project area.

Primary long-term effects are increased availability of timeshare units for visitors from the evolving worldwide vacation club industry, increased open space along the shoreline of the subject property, and increased patronage of visitor related businesses such as restaurants, retail shops, and activities due to the additional visitor population.

In addition, secondary long-term benefits can be expected from the additional tax base created by the additional employment and services provided by the construction, sale, and operation of the project.

The action will entail a change in the "beneficial" uses of the environment. Greater open space along the coastal walkway is a positive effect, while the narrowing of view corridors through the property is a negative effect. No consequences of the action are anticipated to pose long-term risks to health and safety.

F. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

In the short-term construction of the proposed development will require an irreversible and irretrievable commitment of a number of resources, including land, capital, construction materials, manpower, energy, and water. Financial, material and manpower resources will also be irretrievably committed to the planning and design of the improvements.

Land committed to this project is already urbanized; therefore, the proposed action represents an intensified use of existing land resources rather than a commitment of any new land resources. However, in the long-term, project development will commit the land to a higher density residential use, which is unlikely to revert to a lower intensity use in the foreseeable future. Potential uses of the land will not be curtailed, as the proposed transient residential use is considered appropriate in terms of planning and zoning. It is likely that the proposed project will preclude further residential development of the project.

Operation of the project when completed will also require irretrievable and irreversible commitments of labor, material and resources (electricity, water, gas). Energy resources for the island are generally created from non-renewable sources.

Short-term and long-term environmental and socio-economic impacts are anticipated due to redevelopment of the site. Construction will, in the short-term, generate unavoidable fugitive dust, noise, vibration, and traffic inconveniences for surrounding Resort users.

In the long-term, a change in the visual landscape (including the narrowing of view corridors) is unavoidable, since the existing parking garage, on-grade parking, and tennis courts will be replaced by 12 ~~10~~-story structures. The project will also cause some changes the nature of traffic flow to and from the project. While the degree of these impacts is considered minimal from the public perspective, the potential impacts and potential short-term and long-term mitigation measures for the project have been included in section III of this report.

G. PROBABLE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Adverse impacts can be defined as short-term and long-term effects relative to the construction and implementation of a specific use. Short-term impacts are usually construction-related which will occur during the course of construction and cease upon completion of the project. Long-term impacts generally result from the implementation of the proposed project.

Short-Term Effects. Unavoidable short-term impacts include those related to noise, vibration, air quality, and traffic inconveniences.

Audible construction noise will probably be unavoidable during the entire project construction period. Short-term increases in noise levels will result from construction activities, vehicles and equipment. The use of muffled equipment as well as adherence to State Department of Health regulation on noise mitigation will minimize construction and traffic-related noise.

Construction -related air quality impacts could result from site preparation and earth moving activities, the movement of construction vehicle son unpaved areas of the site, and the construction of structures. The construction contractor is responsible for complying with State Department of Health fugitive dust regulations that prohibit visible dust emissions at property boundaries. Nevertheless, the presence of nearby building suggests that open-air areas and naturally ventilated structures could be impacted by fugitive dust in spite of compliance with these regulations. Also, the temporary increase in construction-related traffic traveling to and from the project site will increase vehicular emissions and cause some traffic inconveniences in the area.

Long-Term Effects. Unavoidable long-term impacts resulting from the project include beneficial and adverse changes to visual and socio-economic environment.

Potential negative effects include reduction of certain view corridors from pubic and private vantages. The proposed project's design incorporates massing considerations, strategic building placement, and architectural detailing to minimize its visual impact from adjacent residential developments. Other effects that are possibly adverse include greater demands for housing and public services.

Reasons to proceed despite unavoidable effects include:

- Beneficial effects from the project to the socio-economic environment including fiscal benefits to the County and State, increased job opportunities, greater stability of the visitor industry, and increased visitor spending in the economy.
- Positive physical effects include an improved shoreline area consisting of greater waterfront open space.
- The development and analysis of design alternatives in the planning of the action will reduce potential impacts
- Objectives and benefits identified in Government Plans and Studies are attained through the action which offset the adverse environmental effects of the project, including:
    - To use the land within the County for the social and economic benefit of all the County's residents. (Maui General Plan)
    - To develop a visitor industry which will enhance the social and economic lifestyles of Maui County's residents. (Maui General Plan)

- The success of an urban community relates to the stability of its economy.... With the dependence on the visitor industry and the ever-present uncertainties facing agriculture, it is recognized that the economic base is potentially vulnerable and must be nurtured in a reasonable manner to insure stable employment opportunities for residents and their descendants...It is therefore important to maintain a stable economic base by encouraging the upgrading of existing visitor facilities.... (West Maui Community Plan)
- Promote a diversified economic base which offers long-term employment to West Maui residents, and maintains overall stability in economic activity.... (West Maui Community Plan)
- Maintain a stable and viable visitor industry (West Maui Community Plan)
- Encourage the renovation and improvement of existing visitor facilities without a substantial increase in the room count (West Maui Community Plan)
- Provide public or private facilities and improvements important to the State's economy in suitable locations... (SMA Objectives and Guidelines: #5 Economic Uses)
- Concentrate coastal dependent development in appropriate areas... (SMA Objectives and Guidelines: #5 Economic Uses)
- 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... (SMA Objectives and Guidelines: #5 Economic Uses)

H. SUMMARY OF UNRESOLVED ISSUES

Unresolved issues are invariably associated with projects in the planning and design stages. Consequently, the planning process, which includes this Environmental Impact Statement, attempts to identify these issues and to develop appropriate mitigative measures.

Project Plan and Design. The conceptual plan and detailed design features of the project remain to be finalized and may undergo revision based on responses to public input and to conform to applicable permits and other requirements. The project development team will continue to consult and coordinate with the accepting agency, applicable agencies, and affected parties during the course of the planning process until the project plans are finalized.

At this point in review, it is noted that design alterations may ~~substantially~~ differentiate the level of impacts to private parties (e.g. as in the case with views from private vantage points from adjacent developments), however such changes are anticipated to be minimal). ~~However,~~ Further design alterations are not anticipated to result in significantly different impacts to the public. Pursuant to Chapter 11-200-12, HAR, an impact is considered significant if it substantially affects scenic vistas and viewplanes identified in county or state plans or studies. As noted in the assessment of visual resources, no ~~such~~ identified resources will be substantially affected by the action, ~~are documented in the project area~~ and therefore, further changes to the project plan and design are should not change the analysis of the assessment.

Permits and Approvals. A number of permits and approvals will be required prior to construction of the project. A list of required permits and approvals is included in section II of this assessment. It is standard procedure with these permitting processes to initiate Environmental Impact Review as the first stage of approval.

Archaeological/Historic Resources. Although recent test trenching of the project sites has discovered no cultural materials or layers, the potential for discovery of cultural materials exists during ground disrupting construction activities. To mitigate against unknown/potential impacts to cultural resources, a construction-monitoring plan will be submitted to the Department of Land and Natural Resources, Historic Preservation Division for review and approval prior to construction.

Utilities. Although applicable private/public utility capacities have been verified as part of the preliminary engineering report, certain confirmations of County service availability are not granted before the project submits for building permits.

Water Quality. Appropriate or applicable Best Management Practices (BMP) to reduce and control the discharge of dust and sediment from the construction activities will be determined during the National Pollutant Discharge Elimination System (NPDES) permit application process administered by the State Department of Health, and grading permit application process administered by the County of Maui. The Environmental Impact Review process traditionally precedes these permits when both processes are required.

Extent of Construction-Related Impacts. ~~The extent of direct construction impacts cannot be fully predicted. since details of timing and construction practices remain to be set. Nor, based on available data,~~ The EIS describes direct construction impacts (such as noise, vibration, dust, and traffic) to the extent practical, and provides potential mitigation measures where applicable, including measures selected by the applicant. Indirect construction-related impacts such as loss of rental income at adjacent developments cannot be ~~estimated~~ predicted with complete ~~any~~ certainty, because such predictions cannot account for the subjective sensitivity of potential renters, future visitor trends, or marketing efforts on the local or global scale.

Reasons to proceed with the action despite unresolved issues include:

- As evidenced by past development and re-development of the resort, residential occupancy and rental activities can be maintained, albeit impacted during construction activities. It is also evidenced through practice, that while there is a need to mitigate the impacts of construction activities where practical, the right to develop one's property (and necessarily cause short term impacts ~~nuisances~~) is not precluded by an adjacent neighbors' economic operations or desire for tranquility.
- Costs of developing the project will increase (estimated at 3%/year)
- Timely development of the Sequel project will seamlessly extend the employment of the sales staff. Delaying the project may result in inventory gaps that would create undesirable fluctuations of the sales program and undesirable employment transitions for the sales employees and managers.
- Infrastructure capacity, although not guaranteed, is available

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE LAWS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes four major land use districts into which all lands in the State are placed. These districts are designated Urban, Rural, Agricultural, and Conservation. The project area includes lands within the Urban District. Development entitlements within the Urban District are delegated to the respective County Governments.

B. MAUI COUNTY ZONING

The property is located in the County H-2 (High Density) Hotel Zone. The definition of this district is "a high density multiple-family area bordering business districts and ocean fronts". Timeshare use is permitted in the Hotel Districts.

Building density constraints under the H2 Hotel Zoning include limits to building height, limits to the amount of covered space in relation to lot size ("lot coverage"), and a limit to the amount of floor space in relation to lot size ("floor to area ratio" or "FAR"). The proposed development is consistent with these density requirements as indicated in the following table:

	Zoning Restriction	Proposed Development
Height	12-story	~~10~~ 12-story
Lot Coverage	35%	28%
FAR	150%	130%

In addition, H-2 Hotel Zoning establishes minimum front, side, and rear building setbacks. The proposed alternative meets or exceeds the minimum setback requirements.

Pursuant to Chapter 19.37, Time Sharing Plans, Maui County Code: *"Time Share Units, Time Share Plans, and transient vacation rentals are allowed in the Hotel district"*.

C. MAUI COUNTY GENERAL PLAN

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. The proposed action is applicable to the following objectives and policies of the General Plan:

Category: <u>Land Use</u>.

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

Category: <u>Economic Activity</u>.

Objective: To provide an economic climate which will encourage controlled expansion and diversification of the County's economic base.

Policy: Maintain a diversified economic environment compatible with acceptable and consistent employment.

Category: <u>Visitor Industry</u>

Objective: To encourage exceptional and continuing quality in the development of visitor industry facilities.

Policy: Limit visitor industry development to those areas identified in the appropriate community plans, and to the development of projects within those areas which are in conformance with the goals and objectives of those plans.

Policy: Encourage enhancement of existing visitor facilities without substantial increases in room count.

Policy: Encourage the preservation of open beach space by maximizing the use of lands presently designated by community plans for visitor facility use and discourage rezoning of other lands for such use.

Objective: To develop a visitor industry which will enhance the social and economic lifestyles of Maui County's residents.

D. WEST MAUI COMMUNITY PLAN

Nine community plan regions have been established in Maui County. Each region's growth and development is guided by a community plan that contains objectives and policies in accordance with the Maui County General Plan. The purpose of the community plan is to outline a relatively detailed agenda for carrying out these objectives.

The subject property is located within the West Maui Community Plan region. The Community Plan was recently amended by ordinance No. 2646 on March 25, 1998. The Community Plan designation for the subject property is Hotel.

The plan contains a section that identifies "Major Problems and Opportunities of the Region". Portions of this section that are directly applicable or have been mentioned through comments on the Draft EIS include the following:

Problems: Threats to the environment and the potential loss of opens space:

As the region develops, the importance of open space, especially along the shoreline, increases. Existing areas of open space, including agricultural lands and gulches, should be viewed as a resource which should be protected and enhanced. There is also a need to protect view corridors and scenic vistas and design landscape buffers along the major roadways in such a manner as to provide periodic views of the mountains and ocean.

Growth, Long term stabilization of the economy:

The tourist industry provides a strong economic base. Yet, the industry is subject to seasonal fluctuations, increasing competition and uncertainties in national and international economic conditions. There is need to stabilize the economy of the region and to protect and improve the visitor experience.

Opportunities: Natural Environment:

The natural environment is a major asset of the region –the open spaces and stretches of shoreline between the south boundary of the district and Puamana and from Kapalua to Nakalele Point, the expansive landscape of agricultural and natural open space areas against the backdrop of the West Maui Mountains, the warm climate, abundant water resources, nice sandy beaches and clean ocean environment…

The marine and nearshore environment and open space areas are important assets of the region that should be protected and preserved for the long-term…

Stability of the Economic Base:

The success of an urban community relates to the stability of its economy….With the dependence on the visitor industry and the ever-present uncertainties facing agriculture, it is recognized that the economic base is potentially vulnerable and

must be nurtured in a reasonable manner to insure stable employment opportunities for residents and their descendants.
It is therefore important to maintain a stable economic base by encouraging the upgrading of existing visitor facilities....

The proposed action is applicable to the following goals, objectives, and policies set forth by the West Maui Community Plan:

Category: Land Use.

Objective: Preserve and enhance the mountain and coastal scenic vistas and the open space areas of the region.

Category: Environment.

Objective: Preserve agricultural lands and open space with particular emphasis on natural coastal areas along major roadways

Objective: Promote the planting of trees and other landscape planting to enhance streetscapes and the built environment

Objective: Protect the shoreline and beaches by preserving waterfront land as open space wherever possible. This protection shall be based on a study and analysis of the rate of shoreline retreat plus a coastal hazard buffer zone...

Category: Economic Activity.

Objective: Promote a diversified economic base which offers long term employment to West Maui residents, and maintains overall stability in economic activity in the areas of: a) visitor accommodations

Objective: Maintain a stable and viable visitor industry.

a) Limit visitor facilities to the existing planned resorts of Kaanapali and Kapalua as designated on the land use map and coordinate future growth with the development of adequate infrastructure capacity and housing for employees

b) Encourage the renovation and improvement of existing visitor facilities without a substantial increase in the room count...

Category: Urban Design.

Goal: An attractive and functionally integrated urban environment that enhances neighborhood character, promotes quality design an the resort destinations of Kaanapali and Kapalua,...

Objective: Maintain a high level of design quality for West Maui resort destination areas

Objective: Integrate stream channels and gulches in to the region's open space system...

The plan establishes land use designations for all property within its boundaries. The designation of the subject property is "Hotel". The beach seaward of the property is designated "open space". The land use map for the project area is included in Figure 6.

Analysis- Open Space & Views. The action will occur in areas designated for Hotel development by the West Maui Community Plan. The action will not affect open space areas specifically identified in plan, including:

- Agricultural lands and gulches
- The open spaces and stretches of shoreline between the south boundary of the district and Puamana and from Kapalua to Nakalele Point
- The expansive landscape of agricultural and natural open space areas against the backdrop of the West Maui Mountains
- Any gulches listed on page 23 of the plan to be "integrated into the open space system"
- Natural coastal areas along major roadways

The project includes the withdrawal of hardened structures from the shoreline setback area, which will increase the open space along the oceanfront, and preserve and enhance ocean views to and along the coastal walkway.

As documented in the EIS's section on visual resources, the project will be visible from the nearest coastal highway, but due to existing development and landscape planting, will not block any existing views of the coast or ocean. The project will partially block views from the beach towards the mountains along its north corridor. Mountain views from the beach along the project's south corridor are currently blocked by development as depicted in Figure 5B.

Because the project has the potential to block (primarily) mountain views, it is potentially in conflict with one of the plan's most general objectives, which states: "Preserve and enhance the mountain and coastal scenic vistas and the open space areas of the region". Such general objectives should be taken in context of the County's land-use designations and zoning of the particular area, in this case, the entire coastline is zoned for high density (12-story) Hotel development. The nature of high-rise development makes the blocking of some views inevitable. The applicant has decided to proceed with the project with the following reasons:

- No resources specifically identified in the West Maui Community Plan or Maui Scenic Coastal Resources Study will be affected.
- Planning of the project has included measures and design alternatives that reduce and minimize the blocking of public views. Such measures have included narrowing of the building and increasing side and shoreline setbacks.
- The nature of potential obstructions is similar to existing obstruction by resort development.

Analysis- Development. The primary need for the project is to allow the applicant to create a new type of accommodation, which meets the demands of the changing visitor market. Visitors in applicants vacation program desire to stay on island for longer periods and tend to travel in larger parties. The method of operation (timeshare) has demonstrated exceptionally stable visitor occupancy, even in periods of economic and world crisis. These factors indicate that the action will be lead to greater economic stability (and less seasonality) of the visitor industry and upgrades visitor facilities without increasing room count as encouraged by the Plan. The action is consistent with the land use designation of the Plan, and will occur in areas specifically allowed by the Plan (Ka`anapali).

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

Chapter 205A, HRS, requires that any "development" within the Special Management Area obtain a SMA permit. Since the project will be constructed within the SMA, a SMA use permit is required for the proposed project. Special Management Area use permits are administered by the Maui Planning Department and acted upon by the Maui Planning Commission.

Coastal Zone Management objectives and policies (section 205A-2 HRS) and the Special Management Area Rules for the Maui Planning Commission (Chapter 202) have been developed to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawaii. The project's potential direct or indirect impacts on the coastal zone within the context of these objectives, policies, and guidelines is described below:

1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

(A) Improve coordination and funding of coastal recreational planning and management; and

(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or 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 uses 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, and county authorities; and crediting such dedication against the requirements of Section 46-6, HRS.

Analysis. Part of the project entails removing nearly an acre of impervious surface from the project site's shoreline setback area. The area will be developed with grass lawns and landscape planting, creating a desirable park-like experience along the coastal walkway. By incorporating greater open space mauka in the shoreline area, views to and along the ~~shoreline~~ coastal walkway will be improved. Public lateral access along the coastal walkway, and mauka/makai access along the two beach right-of-ways will be maintained.

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 documented in Section III-9 of this report, recent subsurface investigation has yielded no cultural findings in the soils of the project area. There is, however, potential for sub-surface discovery during construction activities. In order to better protect and preserve historic resources, a construction-monitoring plan will be submitted to the SHPD for review and approval prior to construction activities. If cultural materials are discovered during construction, SHPD and the Maui Island Burial Council will be informed and consulted for proper treatment.

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 described in the following section, valuable scenic resources in the project area are identified in the Maui Coastal Scenic Resources Study. The project does not significantly affect any visual resource or corridor identified in the Study. Additionally, the project does not affect any scenic resource or open space identified specifically in the West Maui Community Plan.

Part of the project entails removing nearly an acre of impervious surface from the project site's shoreline setback area. The area will be developed with grass lawns and landscape planting, which the applicant feels will create a desirable park-like experience along the coastal walkway. By incorporating greater open space mauka in the shoreline area, views to and along the shoreline will be improved.

The State's Coastal Zone Management (CZM) Program specifies guidelines for an authority granting a permit to a project located in the CZM's Special Management Area (SMA) jurisdiction with respect to coastal views.

> §205A-26 Special management area guidelines. In implementing this part, the authority shall adopt the following guidelines for the review of developments proposed in the special management area:
>
> (3) The authority shall seek to minimize, where reasonable:
>
> (D) Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; …

As documented in Section III of the EIS, views from the coastal highway adjacent to the project are marginal due to unfavorable topographic conditions and the degree of existing development along the shoreline. While the project will be visible from the State Highway nearest the coast (Honoapi`ilani Highway), views of the coast and ocean are currently obstructed by existing high-rise development and landscape planting. Thus, the proposed project would not substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast. Views from the Highway are included in Figures 14A and 14B.

The project will entail the construction of new high-rise development in areas currently developed as tennis courts, parking lots, and parking garages. These developments will block views through the property. This can be viewed as contrary to the policies of this section, primarily (c), which states, "Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources". While visual interpretation of the development is subjective, especially to weather tennis courts and parking facilities are "shoreline open space", there are reasons to proceed even if the project is found to be not in compliance with every objective and policy, including:

- The CZM objectives and policies must be considered (by law) along with the needs for economic development (§205A-4 HRS). Consideration of economic development includes public plans designed to control growth and preserve open areas. This includes county zoning, which specifies the area for urban development, specifically high-rise development, and community plans, which specify the subject property for Hotel use.
- The development will partially obstruct view corridors, it not impact any important seaward/landward view corridors that are identified in the Maui Coastal Scenic Resources Study.
- The nature of potential obstructions is similar to existing obstruction by resort development.
- The project is an infill development in a planned development with adequate infrastructure. This is consistent with the General Plan policy which states "Encourage the preservation of open beach space by maximizing the use of lands presently designated by community plans for visitor facility use and discourage rezoning of other lands for such use."
- The design and planning of the project have incorporated measures and alternatives the reduce impacts to visual resources.
- The proposed buildings will be located further from the shoreline than existing developments in the project area and will utilize landscape planting to break up the visual mass.

4. Coastal Ecosystems

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

Policies:

(a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

(b) Improve the technical basis for natural resource management;

(c) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(d) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(e) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Analysis. No direct impacts to the coastal or marine environment are anticipated as the project is located inland within a built urban environment. Drainage patterns and quantities will generally remain the same, and thus no change in drainage-related indirect impacts is anticipated.

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 area is designated for high-density hotel within the Ka`anapali master planned resort. Existing Resort infrastructure is designed to accommodate the higher density planned for the property. Potential uses of the land will not be curtailed, as the proposed transient residential use is considered appropriate in terms of planning and zoning. By locating the improvements at the project site, the project concentrates coastal dependent development in appropriate areas.

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; and
(d) Prevent coastal flooding from inland projects.

Analysis. Potential flood and tsunami-related impacts are avoided by locating the proposed improvements away from the nearshore area (where the V and A zones are present).

7. Managing Development

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

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

Analysis. Assessment and evaluation of the project will entail the following processes:

- Environmental Impact Review (Chapter 343 HRS Review)
- Special Management Area Assessment and Permitting

Where applicable, the evaluation and permitting processes will be combined under joint applications for the action. Each process entails a form of public participation, which is detailed in the following section.

The project was presented to neighborhood stakeholders early in the conceptual phase. Records of pre-consultation and subsequent design and review are included in Section V of this report.

8. Public Participation

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

Policies:
(a) Promote public involvement in coastal zone management processes;
(b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
(c) Organize workshops, policy dialogues, and site-specific medications to respond to coastal issues and conflicts.

Analysis. Prior to project approval, it is anticipated that the following public notification and hearing requirements are applicable:

SMA Permit
A public hearing is required before the Maui County Planning Commission.
1. Thirty days prior to the public hearing, the Department of Planning must publish a notice of public hearing in a newspaper published twice weekly in the County of Maui.
2. Applicant is required to send notification of hearing and location map by registered or certified mail to all recorded owners and lessees within 500 feet of the property not less than 30 days prior to the hearing. The Applicant must also send notice to all persons who have requested in writing to be notified of proceedings.
3. Within 10 days of the Department of Planning's acceptance of the application, the Applicant must publish the notice of application and legible map once in a newspaper published twice weekly in the County.

Environmental Impact Assessment

Public involvement in the Environmental Assessment process involves the following steps:

1. The Environmental Impact Statement will be made available in a nearby Public Library
2. The State Office of Environmental Quality Control (OEQC) will publish a notice of availability regarding public review of the Draft EIS in the Environmental Notice bulletin.
3. There is a 45 day public comment period
4. OEQC publishes notice of acceptance of the Final EIS

The project was presented to neighborhood stakeholders early in the conceptual phase. Records of pre-consultation and subsequent design and review are included in Section V of this report.

9. Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

(a) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

(b) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Analysis. As documented in section III of the EIS, impacts to the beach and coastal processes will be reduced by the following project actions:

1. The action entails removing existing structure and impermeable surfaces from the nearshore area, creating a more desirable park-like environment, and
2. The proposed improvements that could be of concern due to coastal erosion will be located landward of qualified "hazard areas" including:
   - The FEMA tsunami hazard area
   - The 30-year erosion hazard area included in the SOEST study

- The (proposed) County [shoreline history-based] Shoreline Setback using 50-year +20-foot distance based on the SOEST AEHR (from the shoreline to approximately 45-95' inland)
- The existing County [lot-depth-based] Shoreline Setback Area (from the shoreline to 132' inland)

3. The proposed improvements are located considerably landward of the previous shoreline retreats identified in the Shoreline Evaluation.

10. Marine Resources

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

(a) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
(b) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
(c) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
(d) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
(e) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources. [L 1977, c 188, pt of §3; am L 1993, c 258, §1; am L 1994, c 3, §1; am L 1995, c 104, §5; am L 2001, c 169, §3]

Analysis. No direct impacts to the coastal or marine environment are anticipated as the project is located inland within a built urban environment. Drainage patterns and quantities will generally remain the same, and thus no change in drainage-related indirect impacts is anticipated

The project will include mitigation measures aimed at protecting marine resources by containing dust and project runoff during the construction period. The anticipated method of containment will be to enclose the project area with a combination dust/silt fence. Additional measures could include project watering for dust control, promptly vegetating bared areas, and controlling dust from equipment by covering truckloads. A best-management-practices (BMP) plan will be developed in conjunction with the project's grading plans, which will detail the physical protective measures used at the project site, the locations of such measures, and other intermittent requirements such as project watering. Prior to construction the BMP plan will be reviewed by the County engineering division of the Land Use and Codes Division of the Department of Public Works and Environmental Protection, and the State Clean Water Branch (as part of the NPDES general permit)

F. MAUI COASTAL SCENIC RESOURCES STUDY

The project area is described in the County's coastal scenic resources study, which was funded in part by the Coastal Zone Management Act. The report, entitled Maui Coastal Scenic Resources Study was prepared by Environmental Planning Associates Inc. in August 1990 for the Maui Planning Department as a tool for evaluating CZM development proposals. The format of identification is descriptive and by map. Selections from the Study are included in Appendix G.

Section 4 of the study provides an inventory of coastal scenic resources by region. The study describes the resources of the Lahaina region in a text format as follows:

> The Lahaina area is predominantly urban makai and agricultural mauka until Ka`anapali. At the entrance to Ka`anapali, a golf course with a water feature provides visual relief. Continuing north, the area remains mostly urban resort, with some visual relief provided makai by the golf course, and occasional mauka views of sugar cane and pineapple fields fronting the west Maui Mountains. Where the ocean is visible, there are beautiful vistas of the islands of Lanai and Molokai, many boats moored offshore, and occasional whales breaching or spouting in season.

~~Several visual~~ Resources in the inventory are also identified ~~in the~~ through a map and table ~~portions of the study~~. The study identifies important coastal landmarks, coastal and mauka views, important open spaces, and sites of natural beauty. Resources proximal to the project site include:

- Coastal Land Forms, including: Hanaka`ō`ō Point, Mala Wharf
- Coastal Views, including: views to Ka`anapali and Hanaka`ō`ō Park, views across the golf course north of the 2nd entrance to Ka`anapali
- Mauka Views before and after Ka`anapali
- Open Spaces, including: Hanaka`ō`ō Beach Park and Ka`anapali Golf Course just north of the 2nd entrance to Ka`anapali
- Sites of Natural Beauty including the beach from Black Rock to the old Ka`anapali Airstrip

The Maui Coastal Scenic Resources Study does not identify any valuable mauka/makai view corridors through the project site, or open spaces or landmarks on the subject property.

Section 5 of the study includes recommendations for development. Section 5.2 lists "General Recommendations"; the following are applicable to the project.

- 2 Apply this study to the proposed SMA development projects as follows:
  A. Investigate developments on a specific property from the point of view of existing scenic resources, and take into account the preservation and protection of these resources.
  B. Review the Principles of Design and Guidelines in Chapter 6, and apply them to the development proposal in question.
- 3. Design buildings to run mauka-makai where buildings built parallel to the highway would block coastal views.
- 5. Locate new utility lines underground where they impact visual resources
- 6. Plant open parking facilities with canopy trees to produce shaded parking areas. Landscape parking perimeters to enhance the visual image along the street.
- Preserve the shoreline sand dune formations.

Section 5.4 lists specific recommendations for the region "Lahaina to Kapalua", however none of the recommendations apply to the Ka`anapali Resort.

Guidelines for development are included in section 6 of the Study, which is included in Appendix G. Some guidelines that are applicable to the action include:

- Developments should be designed to avoid "walling off" ocean or mountain views. The recommended approach is to restrict the degree of visual obstruction in urban and rural areas. (Sect 6-9)
- No structure should be permitted to block or substantially obscure significant coastal or mountain vistas from places or points of common public view. (Sect 6-10)
- Roof appendages should be screened from view or integrated into the design of the roof structure (6-10)
- A graduated four-step set back concept should be encouraged to include: 1) a natural terrain corridor along the ocean front, 2) a landscaped belt which is consistent with the natural sector and provides a transition to the next corridor, 3) then a corridor in which the structures do not exceed one story and finally, 4) a sector in which higher structures may be allowed (6-10)
- Landscape features should be designed to enhance the view corridor and to facilitate visual access to both coastal and mountain features. This should be

accomplished by height limitations, building size/scale, set-back requirements, landscaping, plan configurations and other measures which respect the integrity of the view and the sense of place in its relationship to the ocean and mountains. Abrupt differences in scale, changes in level, color or shape should be avoided. (Sect 6-11)

- Landscaping should connect the structure to the environment which it occupies (6-12)
- Utility lines should be placed underground whenever possible (6-13)
- Give emphasis to a pedestrian orientation scenic views in shoreline areas. This method mobility affords the greatest appreciation of coastal resources. It does not preclude the provision of attractive vistas from the highway, but a casual walk along the beach side pathway is often more personally rewarding than experiencing the same view from a moving vehicle (6-14)

Analysis. Attributes of the project that may be considered to be in conflict with the general recommendations and guidelines of the Study include:

- The high-rise improvements of the project will obscure portions of the mauka-makai view corridors existing along the north and south extents of the subject property.
- Some of the design options orient the aspect of the building more parallel with the shoreline, rather than mauka/makai.
- The project will partially block ocean views from adjacent developments

Attributes of the project that may be considered in compliance with the recommendations and guidelines of the Study include:

- The project will not affect any of the coastal resources specifically identified in the inventory section of the Study.
- The development is consistent with the scale, proportion, and spacing of current high-rise development in the region.
- The preferred option of the project will included a stepped roof design encouraged by the study
- The project results in greater open space adjacent to the pedestrian coastal corridor.
- The project includes increased building setbacks for higher structures
- The project will utilize landscape planting to soften the impact of manmade structures.
- The project will utilize setbacks, siting, and landscape planting to soften the impacts of parking facilities.
- The project will integrate roof appendages into the roof design
- Project utilities are underground

In overall consideration of the Study, the project will incorporate many of the recommendations and design guidelines, it is noted that some inconsistencies with the Study will exist due to the inevitable nature of high-rise development to block views. The applicant has decided to proceed with the project with the following reasons:

- No resources identified in the inventory section of the study will be affected.
- Several design alternatives have been developed in consideration of public and private view corridors that reduce and minimize the degree of impact. The preferred option (#5) reduces the width of the proposed buildings, which decreases its "parallel" aspect, increases the width of available view corridors to the public, and provides for greater private ocean views from adjacent developments.
- Views toward the ocean from Honoapi'ilani Highway do not include views of *the ocean or coastline* due to the low elevation of the highway, the distance to the shoreline, and existing mature landscaping along the shoreline. Views blocked by the proposed development are essentially only views of the sky.
- Views from the beach towards the mountain will be obstructed. Views over the north corridor (from Hanaka'ō'ō Point) include views of the West Maui Mountains. Views over the south corridor are currently obscured by existing development and landscaping. The nature of potential obstructions is similar to existing obstruction by resort development.
- The project is set back further inland than existing development along the shoreline.
- The plan was developed to assist in the enforcement of the CZM program. CZM objectives and policies must be considered (by law) along with the needs for economic development (§205A-4 HRS). Consideration of economic development includes public plans designed to control growth and preserve open areas. This includes county zoning, which specifies the area for urban development, specifically high-rise development, and community plans, which specify the subject property for Hotel use.
- The project is an infill development in a planned development with adequate infrastructure. This is consistent with the General Plan policy, which states "Encourage the preservation of open beach space by maximizing the use of lands presently designated by community plans for visitor facility use and discourage rezoning of other lands for such use."

G. OEQC GUIDELINES FOR SUSTAINABLE BUILDING DESIGN

The Office of Environmental Quality Control has developed guidelines for sustainable building design, and it has encouraged preparers of environmental reviews under the authority of HRS 343 to include reference to how a project may address the guidelines within project assessment documents. These guidelines do not constitute rules or law, but provided to encourage the design and planning of buildings built to minimize energy use, expense, waste, and impact on the environment.

The project is in the early phase of conceptual design, so many of the guidelines will not be applicable until the project advances to the design phase. The project is consistent, however with the following guidelines which are appropriate to the permitting and conceptual design phase:

II. Site Selection & Site Design
A. Site Selection
___3. Select a site with short connections to existing municipal infrastructure (sewer lines, water, waste water treatment plant, roads, gas, electricity, telephone, data communication lines and services). Select a site close to mass transportation, bicycle routes and pedestrian access.

___7. Minimize the area required for the building footprint. Consolidate utility and infrastructure in common corridors to minimize site degradation, and cost, improve efficiency, and reduce impermeable surfaces.

V. CONSULTATION AND REVIEW

A. EARLY CONSULTATIONS

The applicants met with the following State & County agencies, neighboring property managers, and property associations to discuss the project in its early development stage. The meetings allowed the parties to provide initial feedback, comments, and concerns about the project, and consequently, the applicant has modified the development plan and preferred alternative based upon these consultations.

Listed below are the primary meeting dates, parties that met with representatives of the project team, and general topics of each meeting.

State Agencies

10/14/02 Department of Land and Natural Resources, Historic Preservation Division (SHPD)

The meeting included the State Historic Preservation Officer (Maui Island) Dr. Melissa Kirkendahl, and Mr. Mike Dega of Scientific Consultant Services. It was held at the Wailuku SHPD office. The meeting was held to discuss and approve the methodology for the archaeological inventory survey.

County Agencies

5/20/02 Office of the Mayor

The meeting was held with Mayor Kimo Apana at his office. The project team presented the project in detail and discussed the anticipated permits it would be seeking from the County.

5/20/02 Department of Planning

The meeting was held with Planning Director John Min at the Planning Department Library. The project team presented the project in detail and discussed the anticipated permits it would be seeking from the County.

12/05/02 Department of Planning

The meeting was held with Planning Deputy Director Clayton Yoshida and Staff Planner Joe Alueta at the Planning Department Library. The project team presented changes to the project resulting from comments received during the pre-consultation period. The status of the project's EISPN and Draft EIS were discussed.

Ka`anapali Operations Association

5/21/02 KOA Design Review Committee

The meeting was held with 4 members of the KOA design review committee at the Marriott Ballroom. The project team presented the project in detail and discussed the anticipated permits it would be seeking from the County. Salient discussions included the treatment of the roof top, landscaping, and the design of the building. KOA asked the team to provide massing models and specific view corridor simulations.

7/26/02 KOA Review Committee
Project Design Review

The meeting was held with the members of the KOA Review Committee at the office of Chris Hart and Partners. The project team presented the modifications to the project in response to comments offered during the initial 5/21/02 meeting. Specific comments included view impacts from Kekaa Drive, request for 3-D project modeling, roofscape treatment, floor area/lot coverage calculations, and some design details.

9/12/02 KOA Board of Directors
Project Presentations

The meeting was held with the Board members of KOA at the Maui Marriott meeting rooms. The project team presented the latest plans of the proposed project and updated the Board on the previous meetings with the Design Review Committee. Specific areas of discussion included the comments received from the Design Review Committee, the proposed project schedule, status of the conversion project, and the coordination with KOA's scheduled re-paving of Ka`anapali Parkway (2006-2007). There were no adverse comments received regarding the proposed project.

Hyatt Regency Maui (South Neighbor)

5/21/02 General Manager

The meeting was held with the General Manager of the Hyatt Resort, Mr. Barry Lewin, at the Marriott Ballroom. The project team presented the project in detail and discussed the anticipated permits it would be seeking from the County. No significant concerns were raised by Mr. Lewin.

Ka`anapali Ali`i residential condominium (North Neighbor)

5/21/02 General Manager, Owners Association

The meeting was held with the General Manager of the condominium project, Mr. Mark Altier, and Mr. Bill Fontana, a member of the board of directors of the condominium's association of apartment owners (AOAO). The project team presented the project in detail and discussed the anticipated permits it would be seeking from the County. Salient discussions concerns for construction-related impacts to the rental of condominium units facing the construction site and views from the condominium. The project team was invited to make a presentation to the board of directors and owners at a following meeting.

7/26/02 Presentation to Board of Directors & various Owners

The project team made a slideshow presentation to the board of directors (approx. 9 people) and an audience of approximately 24 persons who were addressed as unit owners at the condominium. The meeting was held at the Westin Hotel. A question and answer session followed the presentation and include topics such as the appearance of the roof top, lighting used at the project, the construction period and potential mitigation by limiting hours of construction, lost revenue's due to construction, and the potential to increase views and building separation. It was suggested that MVCI shorten the building by eliminating the end bays, and increasing the building height (from 8 stories) to recapture the lost units. This suggestion led to the development of siting option 3, which increased the separation between the buildings from 70 to 110 feet, and increased the ocean view corridor from the condominium's landward tower. The board formed a "task force" committee to facilitate further communications between the parties.

8/12/02 KA "Marriott Task Force"

The project team met with Mr. Mark Altier, and Mr. Bill Fontana at the office of Chris Hart & Partners, Inc. The "task force" discussed a series of concerns that had been developed through its meetings. The task force asked that they receive additional information regarding the duration and levels of construction noise for the different phases of the project, what types of site improvements would be included, and communicated that certain Ali`i unit owners desired to be compensated for lost revenues and impacts to views.

10/30/02 Condominium Rental Associations

The project team met with representatives of three different condominium rental associations active at the Ka`anapali Ali`i, including the Rental Owners

Corporation (ROC), which utilizes Classic Resorts and the rental agent. The project team provided the groups with information on the project, including ongoing discussions and evolving mitigation measures. The meetings took place at the Ka`anapali Ali`i.

11/02/02 Second Presentation to Owners: Annual Owners Meeting- Westin Hotel

The project team was invited to make a slideshow presentation during the annual owners meeting at the Westin Hotel. Approximately 100 to 150 owners were present. The project team discussed the development of the Option 3 site plan, and ongoing developments with the project. The owners were notified that the proposed building footprint was simulated on the Marriott's tennis courts for their information. The project team also discussed the permitting and assessment processes it would be undertaking including the availability of the EISPN. EISPN copies were made available to attendees. A question and answer period was held, yielding many of the same concerns related to construction impacts (noise, dust), diminished views from some condominium units, and lost rents due to construction impacts. Various suggestions entailed building alternatives that were further away from the condominium, less stories, or located on the other (Hyatt) side of the property.

<u>Ka`anapali Vista</u> (Residential Subdivision across Honoapi`ilani Highway)

10/30/02 Meeting with Neighborhood Residents

The project team met with Dr. Ben Azman and Mr. Ben Leland, two residents of the Vista neighborhood. The meeting took place at the Marriott Ballroom. The project team presented the project in detail and discussed the anticipated permits it would be seeking from the County. Copies of the EISPN were presented.

11/02/02 Site Visit to Vista Neighborhood

The project team made a brief visit to the Leland residence to discuss views from the Vista Neighborhood.

B. EISPN DISTRIBUTION & COMMENTS

The project's Environmental Impact Statement Preparation Notice (EISPN) was published in the Office of Environmental Quality Control's (OEQC) bi-monthly letter entitled the "Environmental Notice" dated October 23rd, 2002. Distribution of the EISPN, written comments received during the EISPN 30-day comment period, and response letters (where applicable) are included in Appendix M of this report.

C. DRAFT EIS DISTRIBUTION & COMMENTS

The project's Draft Environmental Impact Statement (Draft EIS) was published in the Office of Environmental Quality Control's (OEQC) bi-monthly letter entitled the "Environmental Notice" dated January 8th, 2003. A copy is provided in Appendix S.

The draft distribution list of agencies, libraries, and media centers was reviewed and approved by OEQC. A record of the transmittals of the Draft EIS, including those made by the applicant and those made by request is included in Appendix S.

Written comments received during the EIS 45-day comment period, and response letters (where applicable) are included in Appendices R & S of this report.

D. POST DRAFT EIS CONSULTATIONS

The applicants has continued dialogue with the Ka`anapali Operations Association (Design Review Committee) and with owners and commercial operators of the Ka`anapali Ali`i Condominium. Much of the dialogue occurred informally via phone, fax, and email, and is not documented in this section. Formal meetings are listed below.

Ka`anapali Operations Association

2/24/03 KOA Design Review Committee

This meeting was held to discuss and clarify several issues regarding the design of the Sequel project. Primary suggestions and discussion initiated by KOA included the following: utilizing a stepped building height, details and style of the architecture, siting and building footprints, and scale, texture & color.

4/24/03 KOA Design Review Committee

This meeting was held to present modifications of the Sequel project based upon the suggestions made during the February 24th meeting. Major changes to the design included the stepped building height. The changes were received favorably.

Ka`anapali Ali`i Condominium

4/28/02 Unit Owners

This meeting was the first of two arranged by MVCI and self-organized groups of KAC owners in order for MVCI to discuss progress several common concerns of the KAC owners raised during the Draft EIS review period and to provide additional opportunity to voice concerns and suggestions. The first meeting was held at the Maui Ocean Club with the 17 KAC owners in attendance and another 3 attending by teleconference.

MVCI presented the Design Option 4 plans and elevations, which entailed a clockwise rotation of the Napili Building and the stepped building design. The design team presented photographs of existing views from KAC units facing the Maui Ocean Club, indicating where the various design options would occur in the view planes. The presentation also included discussion and status of the following areas of concern:

1) Loss of KAC Views
2) "Waikiki-ization" – View Corridors
3) Estimated Guest Density
4) Loss of Rental Income
5) Construction Noise Mitigation
6) Dirt, Dust & Cleaning Responsibilities
7) Operational Noise - Pools, Bars, and Luaus
8) Results of Wind Analysis

A follow-up letter addressing these concerns is included in Appendix R (7/8/03 Status Memorandum).

KAC members were generally appreciative of the additional private view corridor allotted under Option 4, however asked that MVCI consider removing another two stacks of units from the building (the end bays closest to the KAC).

5/14/02 Unit Owners

This was the second of the two meetings. It was held in Northern California with the 16 KAC owners in attendance and another 1 attending by teleconference. The meeting followed the same format as the previous meeting in Ka`anapali. A preliminary plan of Design Option 5 was presented, reflecting the changes suggested during the previous meeting.

LIST OF PREPARERS

Marriott Vacation Club International Applicant & Owner	Steve Busch Regional Vice President Construction and Development
Group 70 International Inc. Architect	Norman Hong Vice-Chairman Frank McCue Project Architect
Warren Unemori Engineering Inc. Civil Engineer	Warren Unemori President Reed Ariyoshi Engineer
Phillip Rowell and Associates Traffic Engineer	Phil Rowell President
Chris Hart & Partners Land Use Consultant	Christopher Hart President Robb Cole Planner

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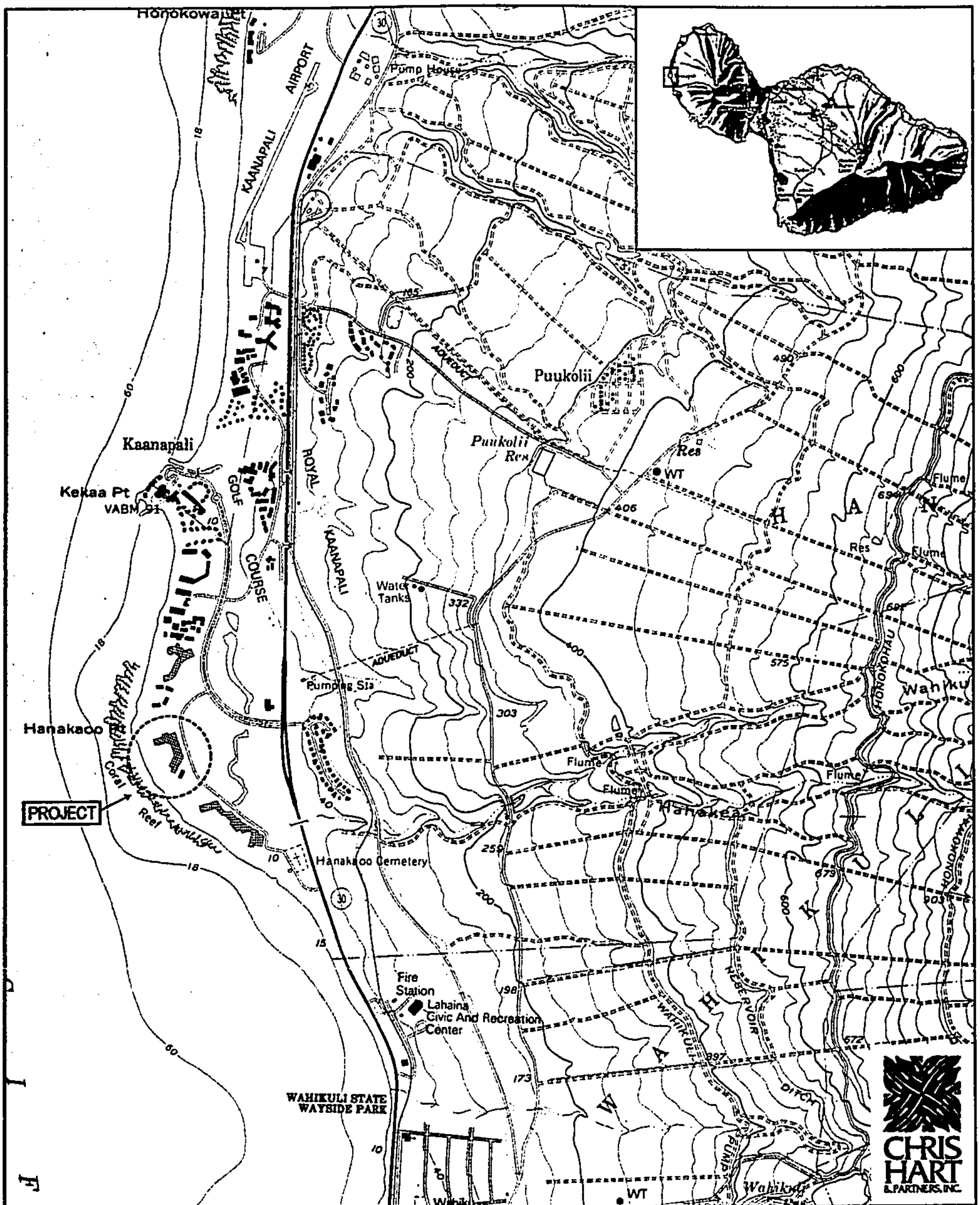
Environmental Planning Associates Inc. August 1990. *Maui Coastal Scenic Resources Study.* Prepared for the County of Maui, Department of Planning. Wailuku, Maui.

Office of Environmental Planning / Hawaii Department of Health. October 1987. *Water Quality Standards Map of the Island of Maui*

FIGURES

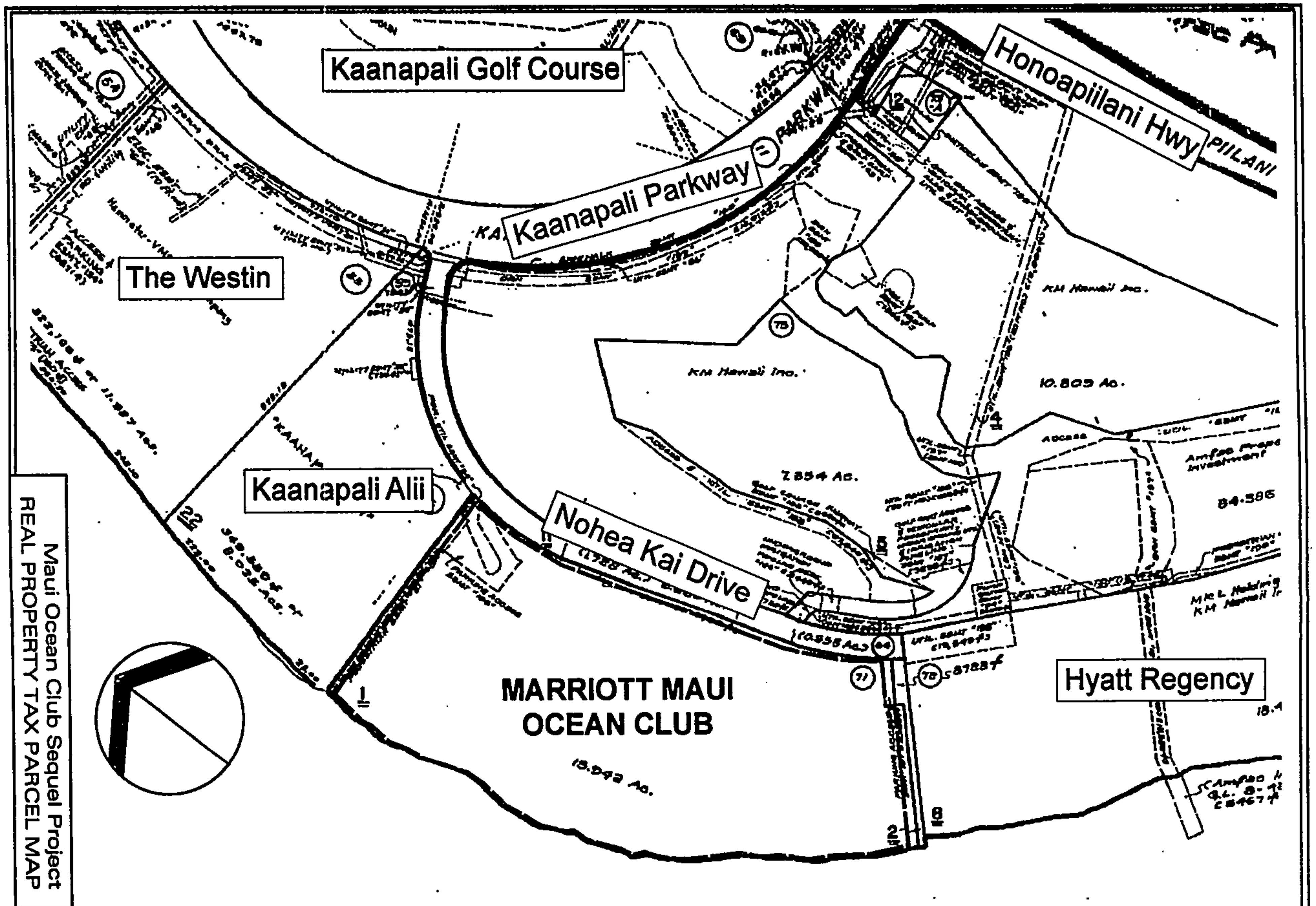


0 1000 2000 3000 FEET

SOURCE: USGS, Lahaina 1983

Maui Ocean Club Sequel Project
USGS REGIONAL MAP

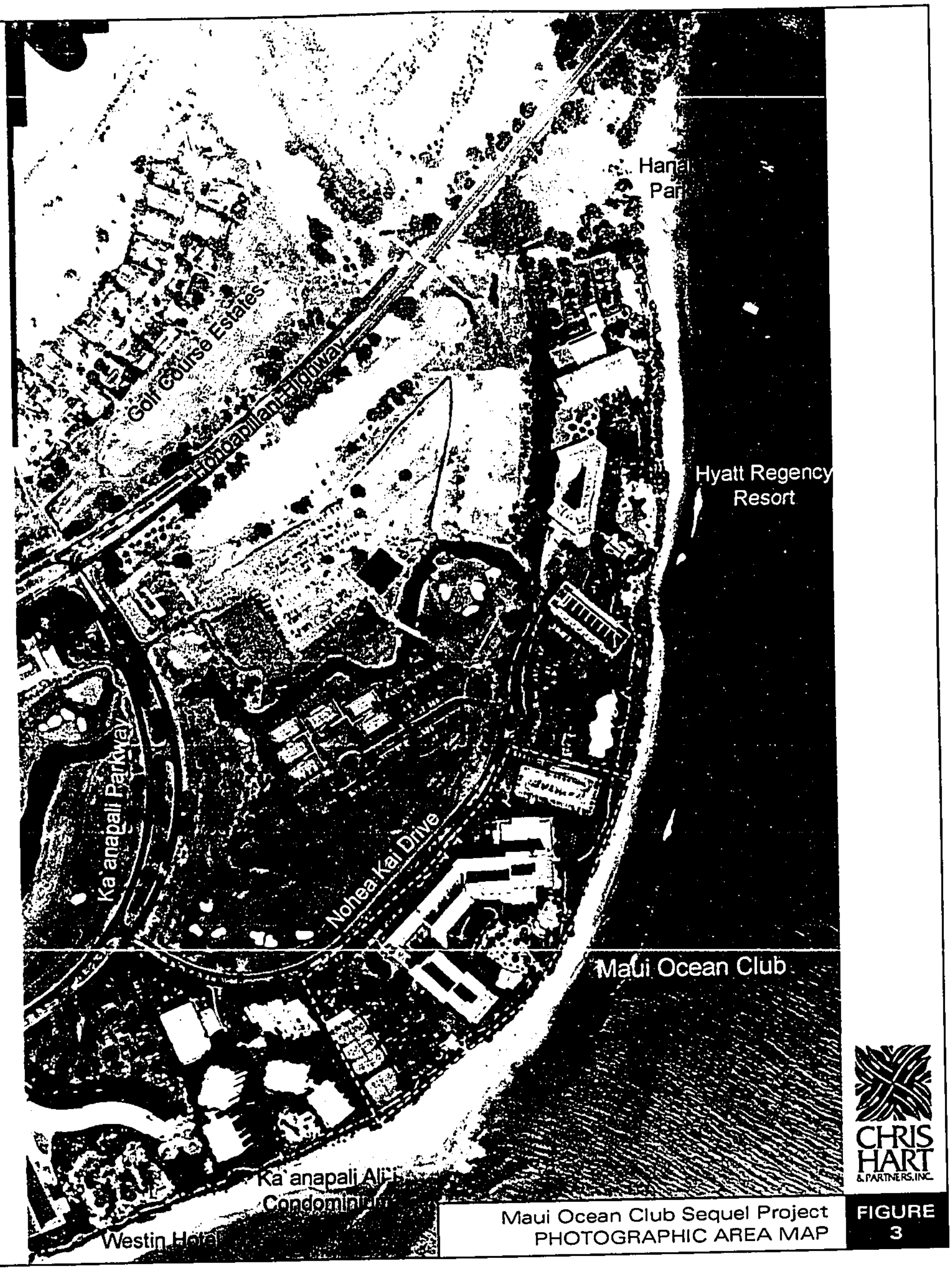
FIGURE 1



CHRIS HART & PARTNERS, INC.

Maui Ocean Club Sequel Project
REAL PROPERTY TAX PARCEL MAP

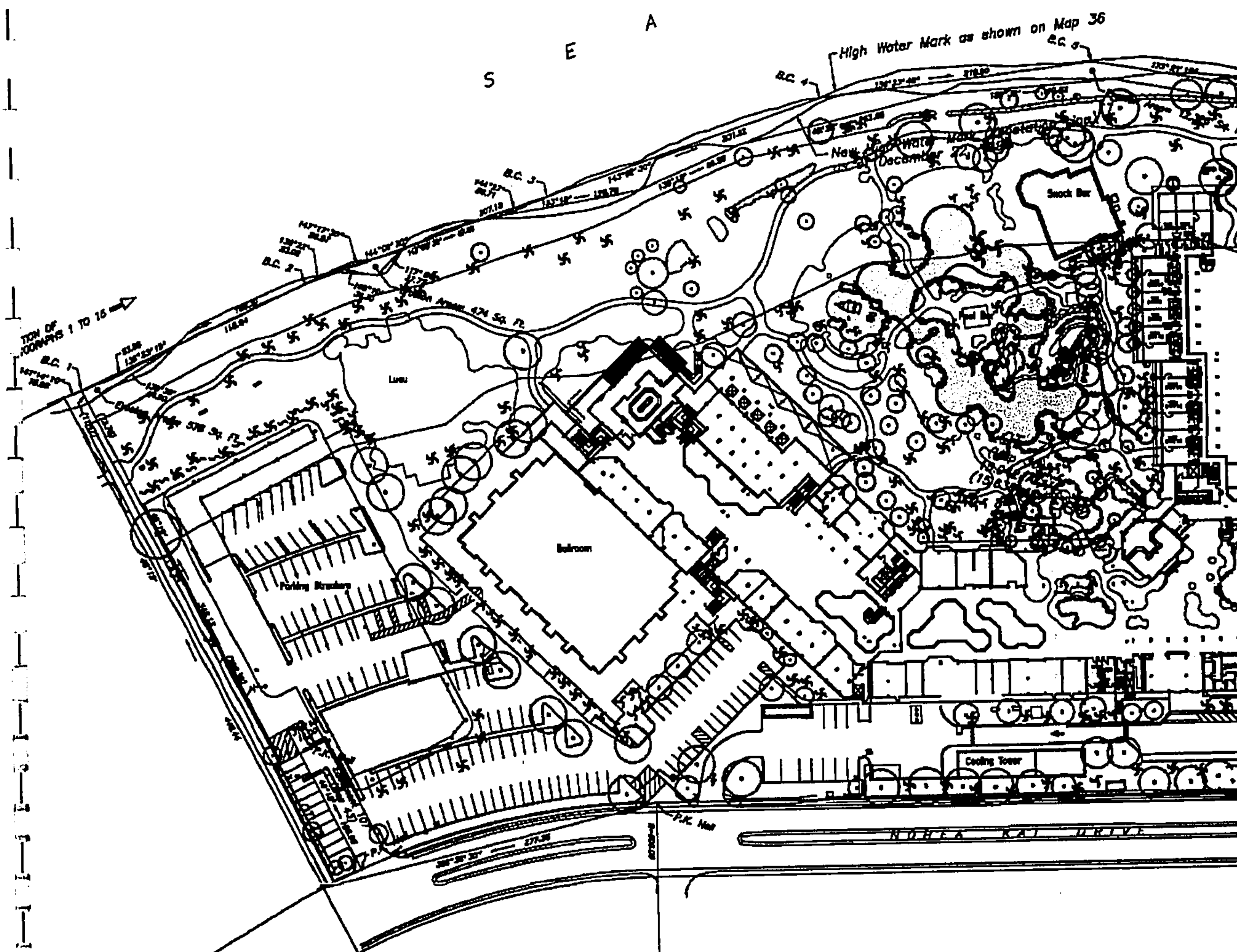
FIGURE 2



CHRIS HART & PARTNERS, INC.

Maui Ocean Club Sequel Project
PHOTOGRAPHIC AREA MAP

FIGURE 3

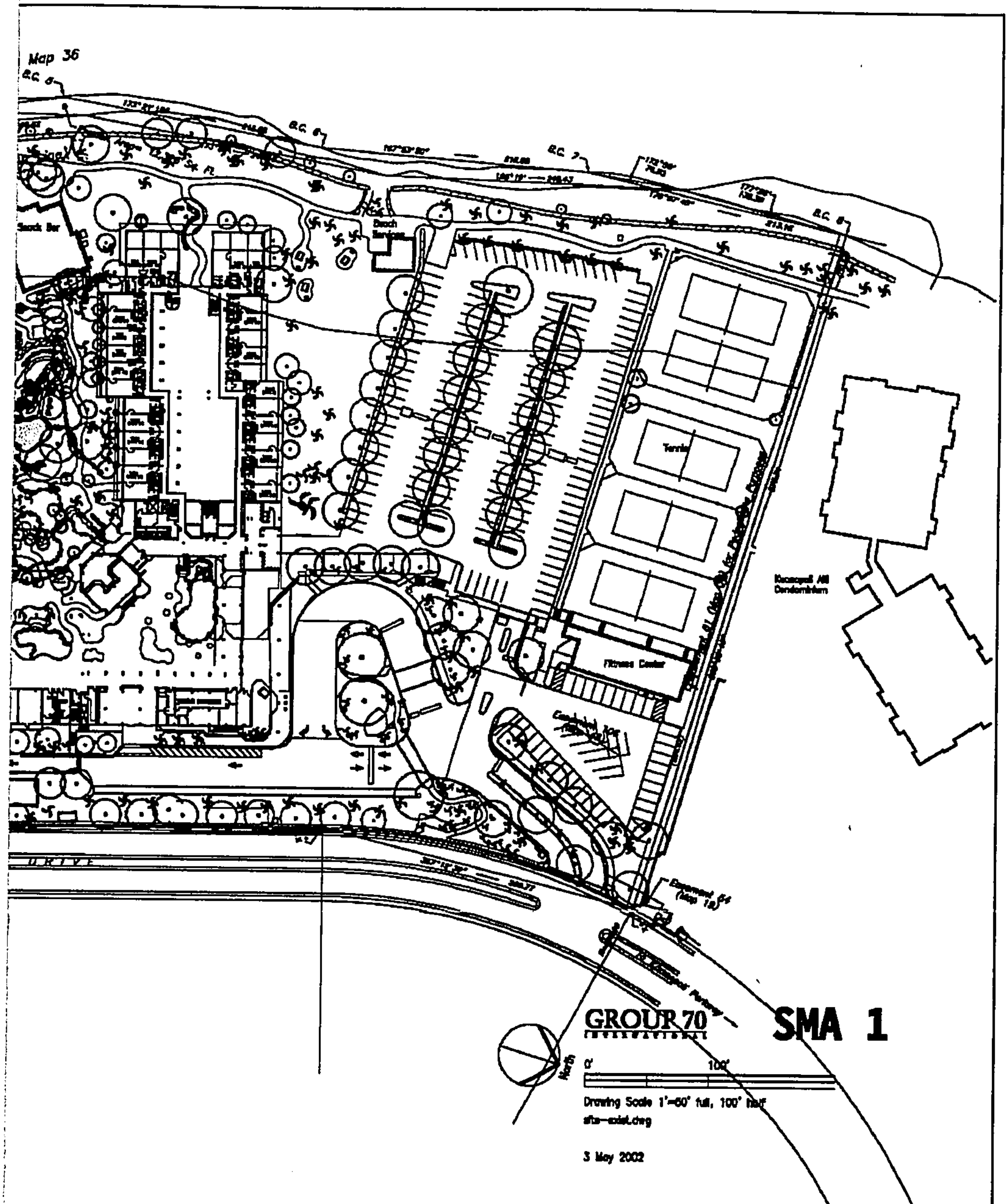


SMA Draft

Existing Conditions

Lobby Level Site Plan

Maui Ocean Club: Sequel Buildings
Maui Marriott



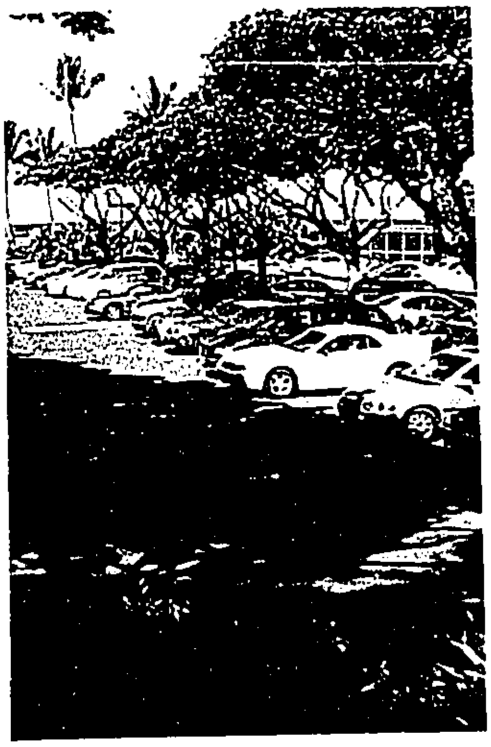
Maui Ocean Club Sequel Project
EXISTING CONDITIONS PLAN

FIGURE 4

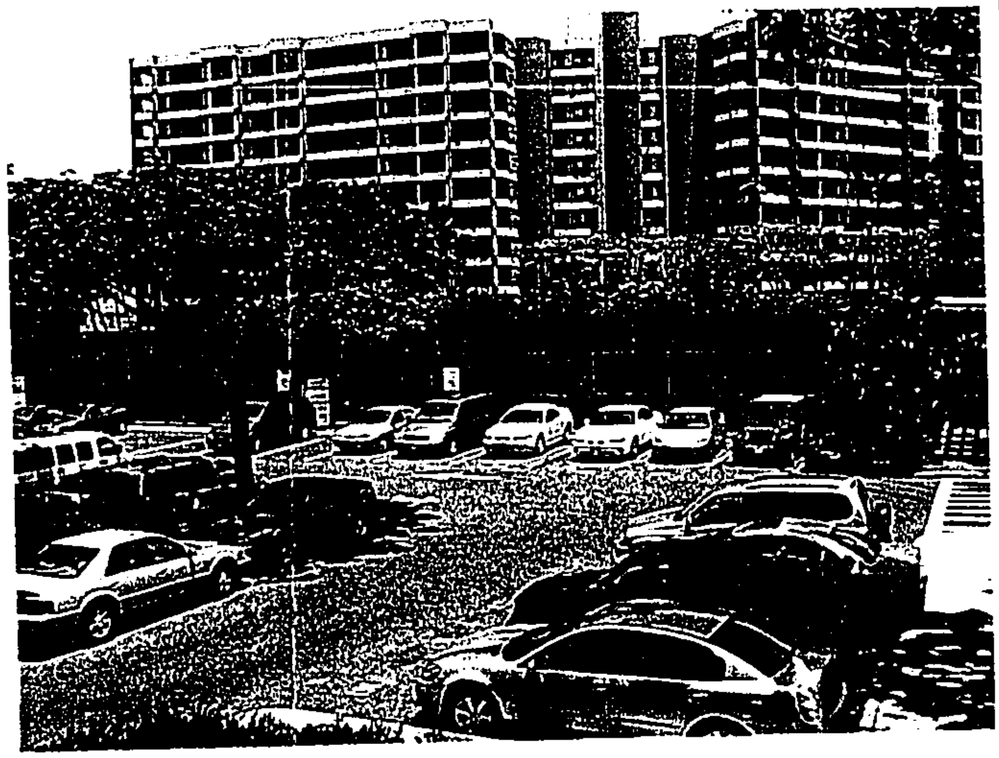
South area Beach ROW along Parking Garage

North area on-grade parking lot, tenn
courts to right

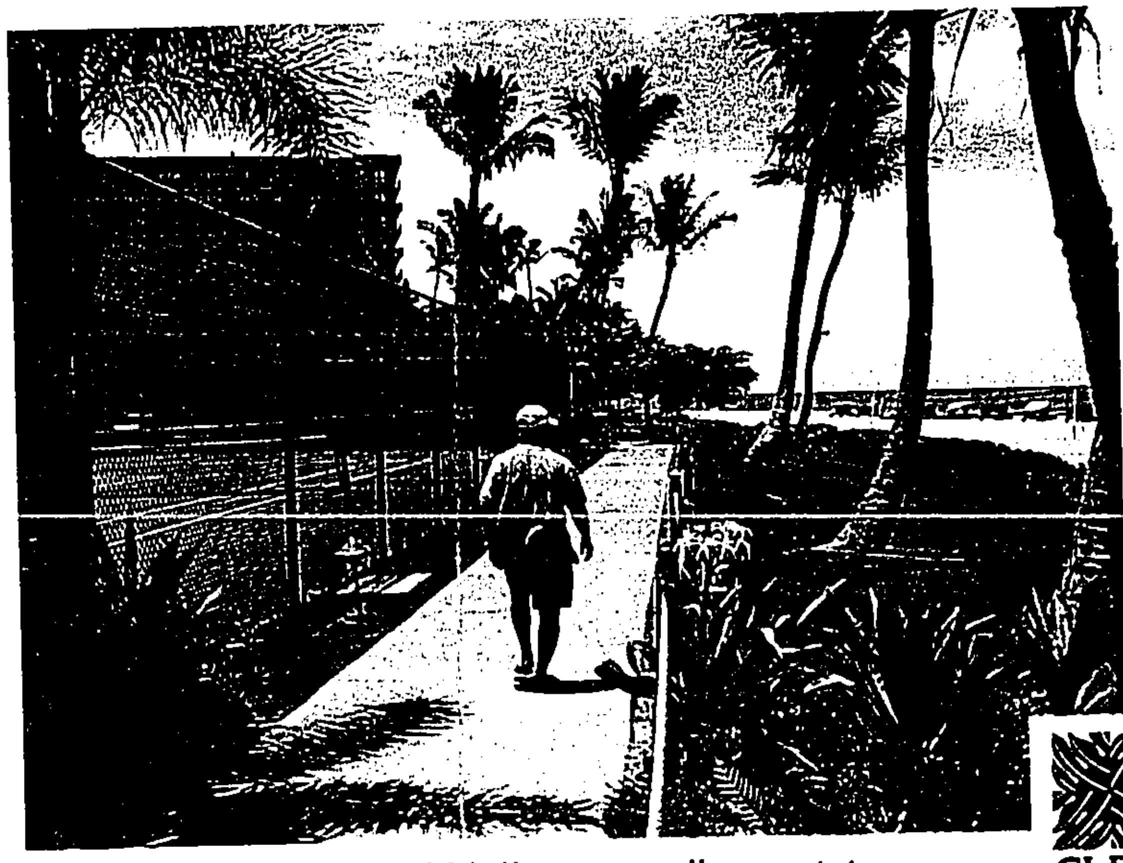
South area Beach Walkway, landscaped area, and Parking Garage



ırking lot, tennis



North area on-grade parking lot, tennis courts, and Ka`anapali Ali`i in background



North area Beach Walkway adjacent to tennis courts.

CHRIS HART & PARTNERS, INC.

Maui Ocean Club Sequel Project
PHOTOGRAPHS OF THE PROJECT SITE

FIGURE 5

Above: (fisheye) view of southern section of Maui Ocean Club property, with views of the existing guest tower and parking structure. Future location of the proposed Lahaina Building.

Right: View of Hanaka`o`o coastline from Wahikuli Park

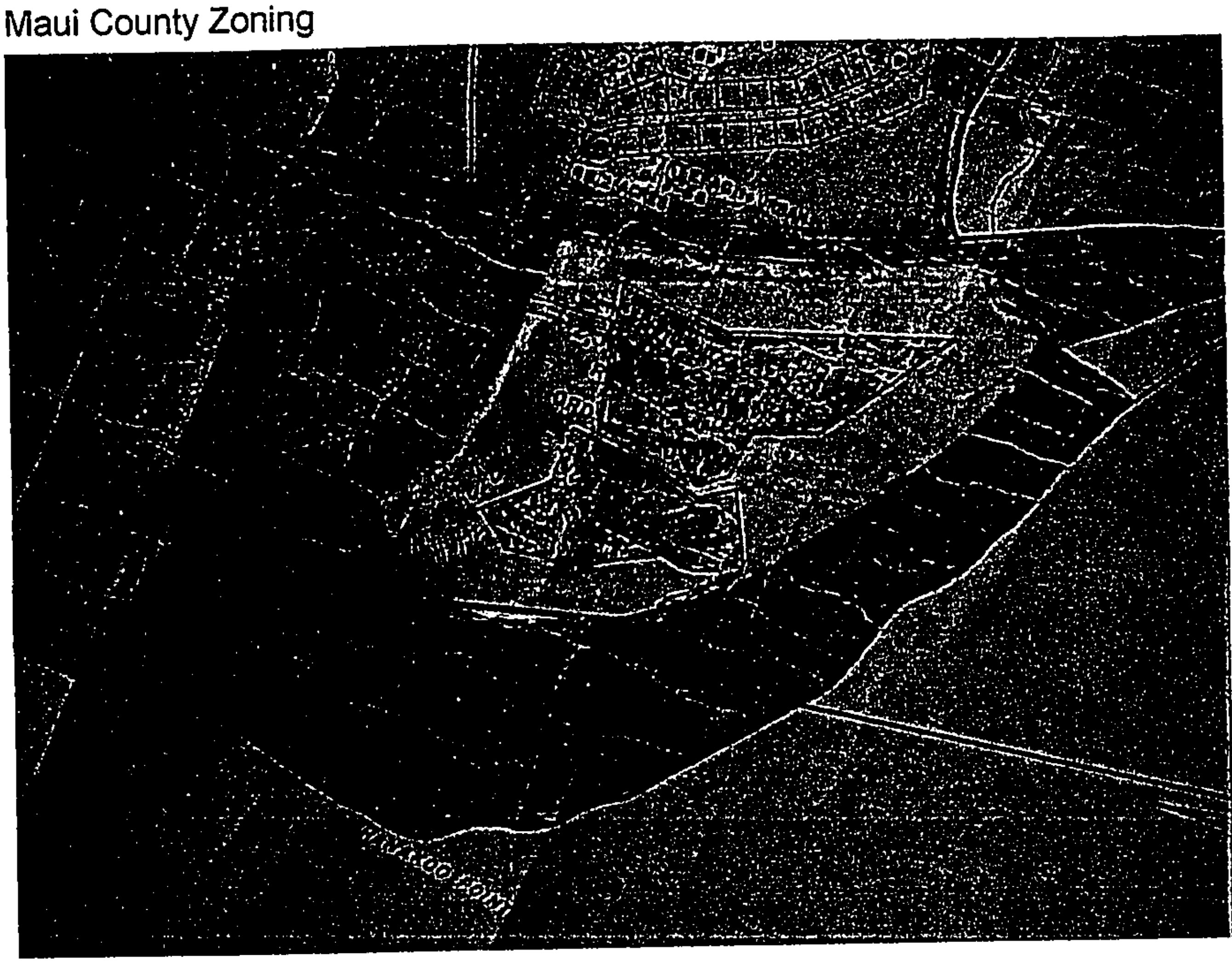
Maui Ocean Club Sequel Project
SITE PHOTOS

CHRIS HART & PARTNERS, INC.

FIGURE 5B

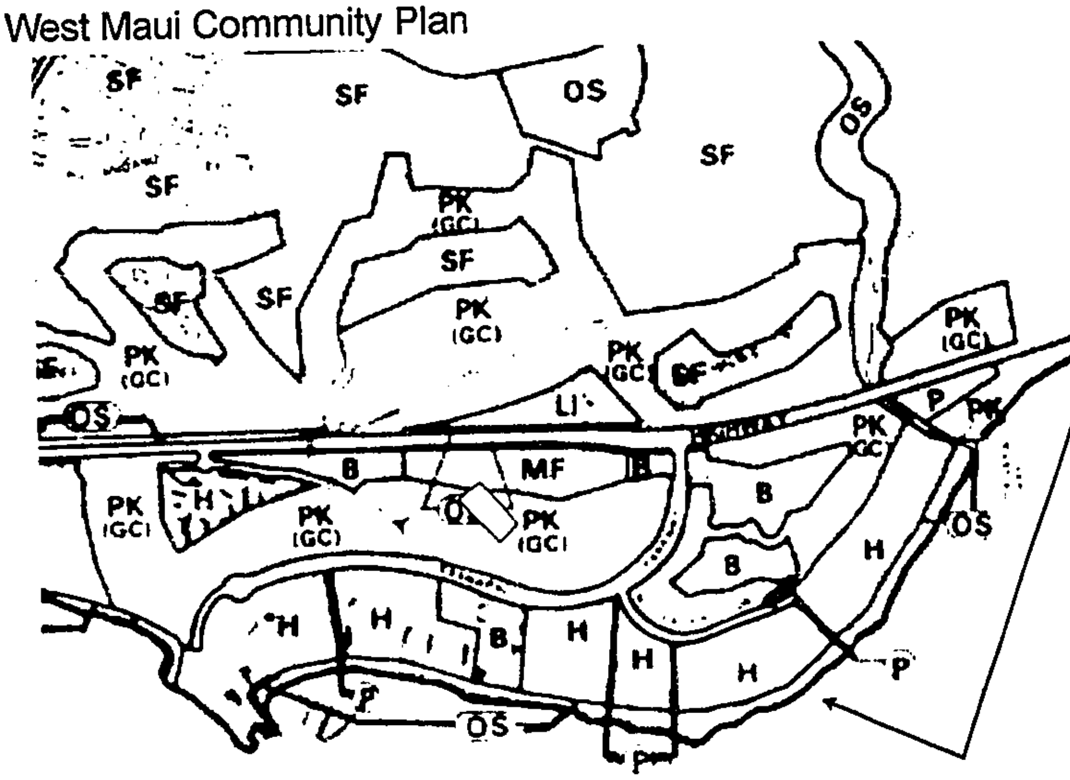
State Land

Maui County Zoning

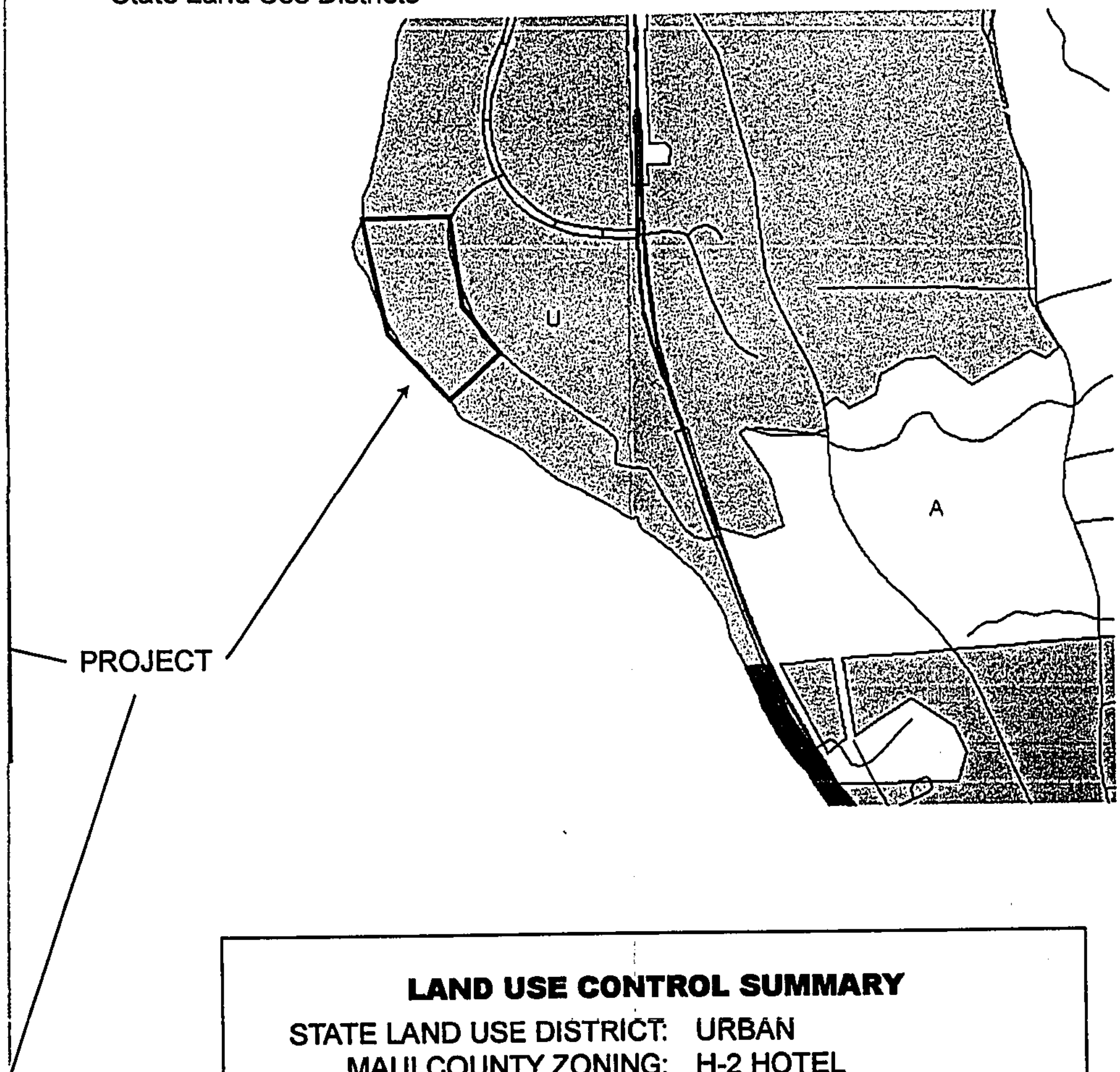


PROJECT

West Maui Community Plan



State Land Use Districts



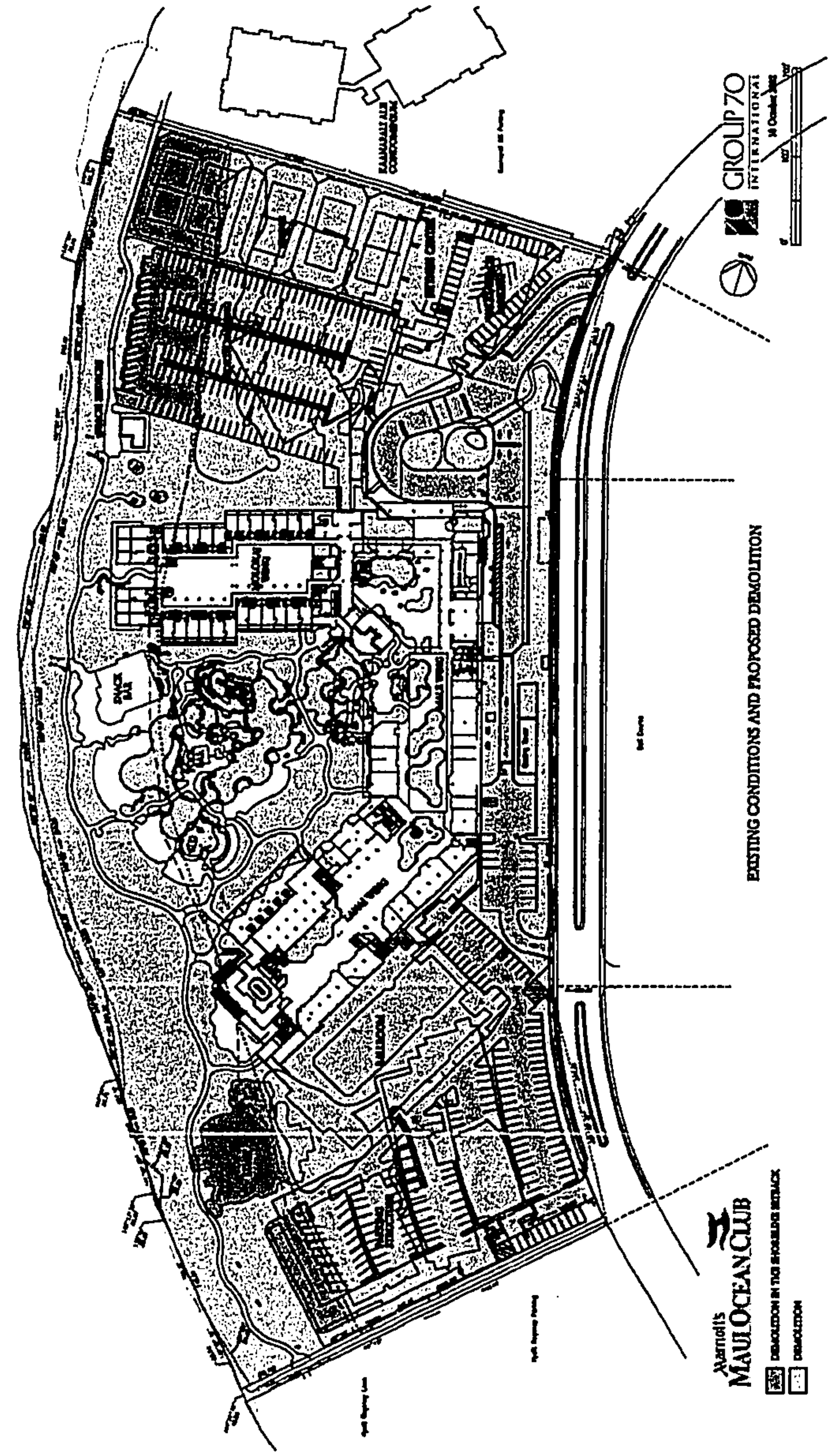
LAND USE CONTROL SUMMARY

STATE LAND USE DISTRICT:	URBAN
MAUI COUNTY ZONING:	H-2 HOTEL
COMMUNITY PLAN DISTRICT:	HOTEL

CHRIS HART & PARTNERS, INC.

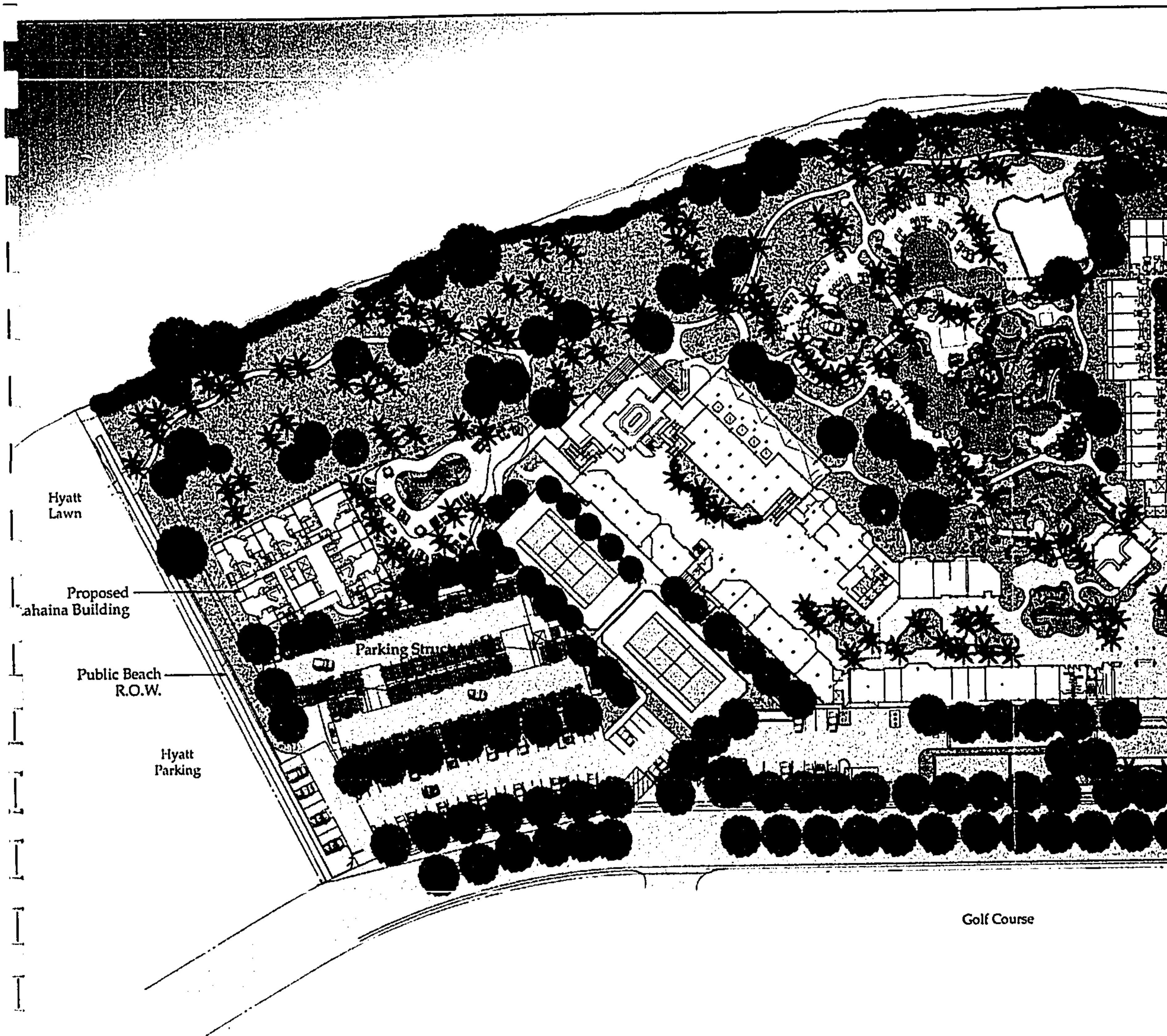
Maui Ocean Club Sequel Project
LAND USE MAPS

FIGURE 6



Maui Ocean Club Sequel Project
DEMOLITION PLAN

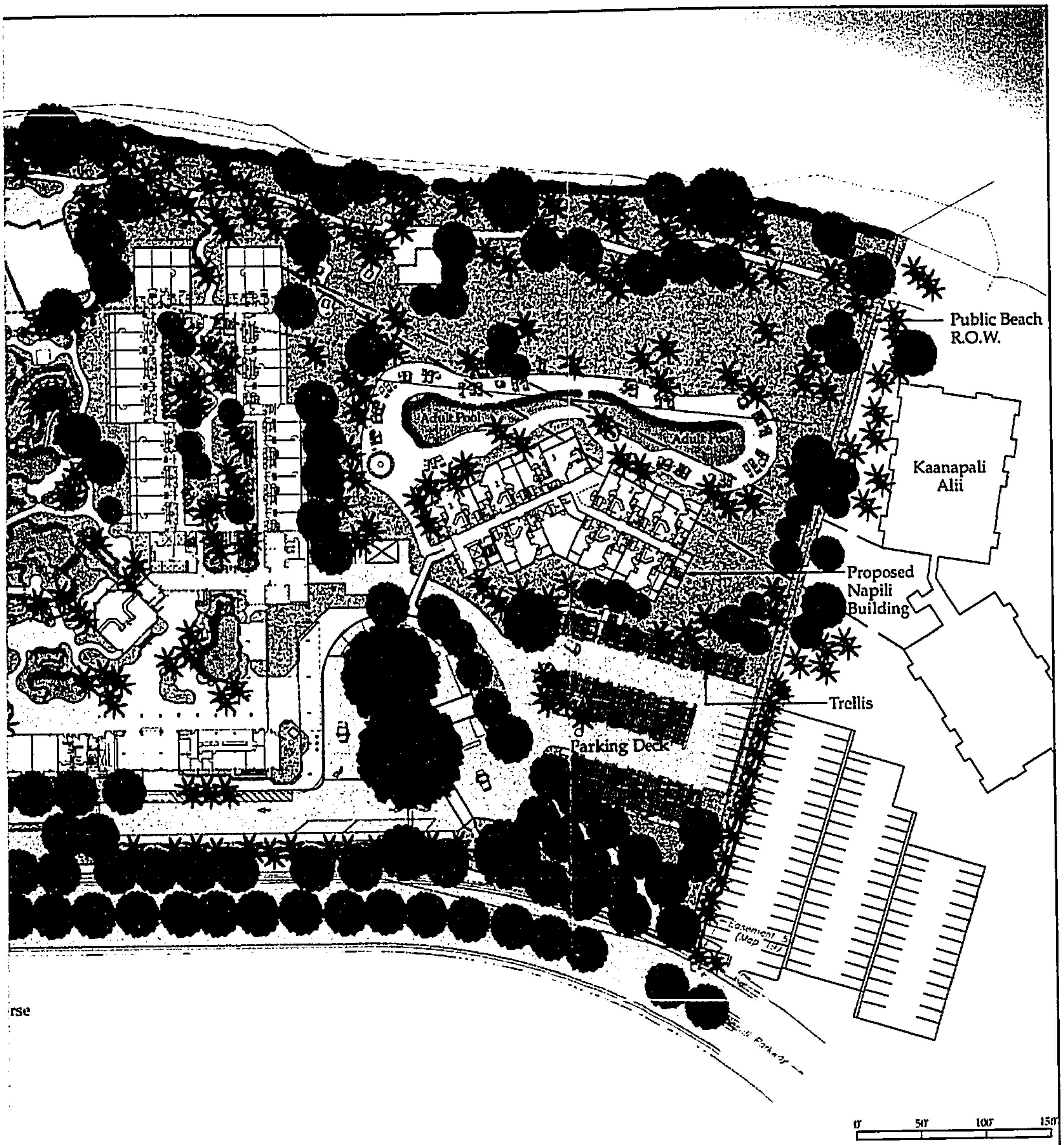
FIGURE 7



Marriott's
MAUI OCEAN CLUB

Sequel Buildings - Site Plan
10/12 Scheme (143 Units)

(Design & Siting Option 5)



GROUP 70 INTERNATIONAL

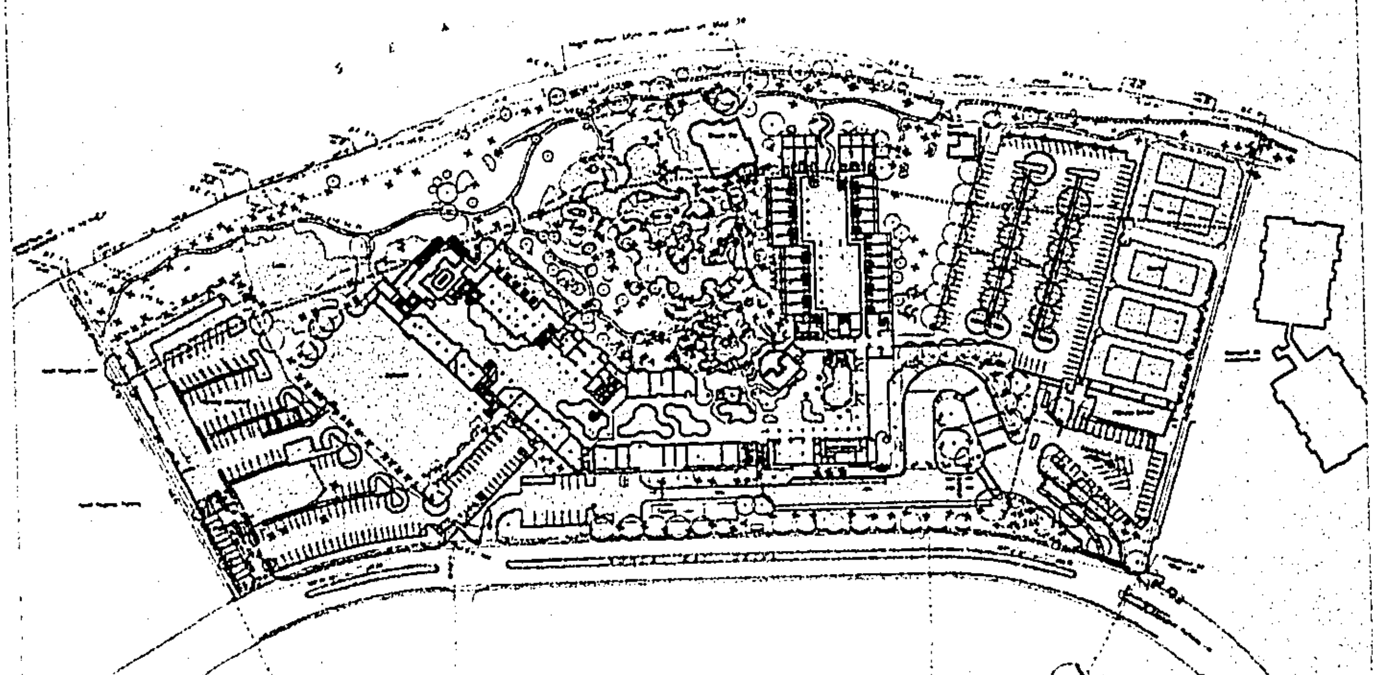
21 May 2003
(Revised)

gs - Site Plan
: (143 Units)

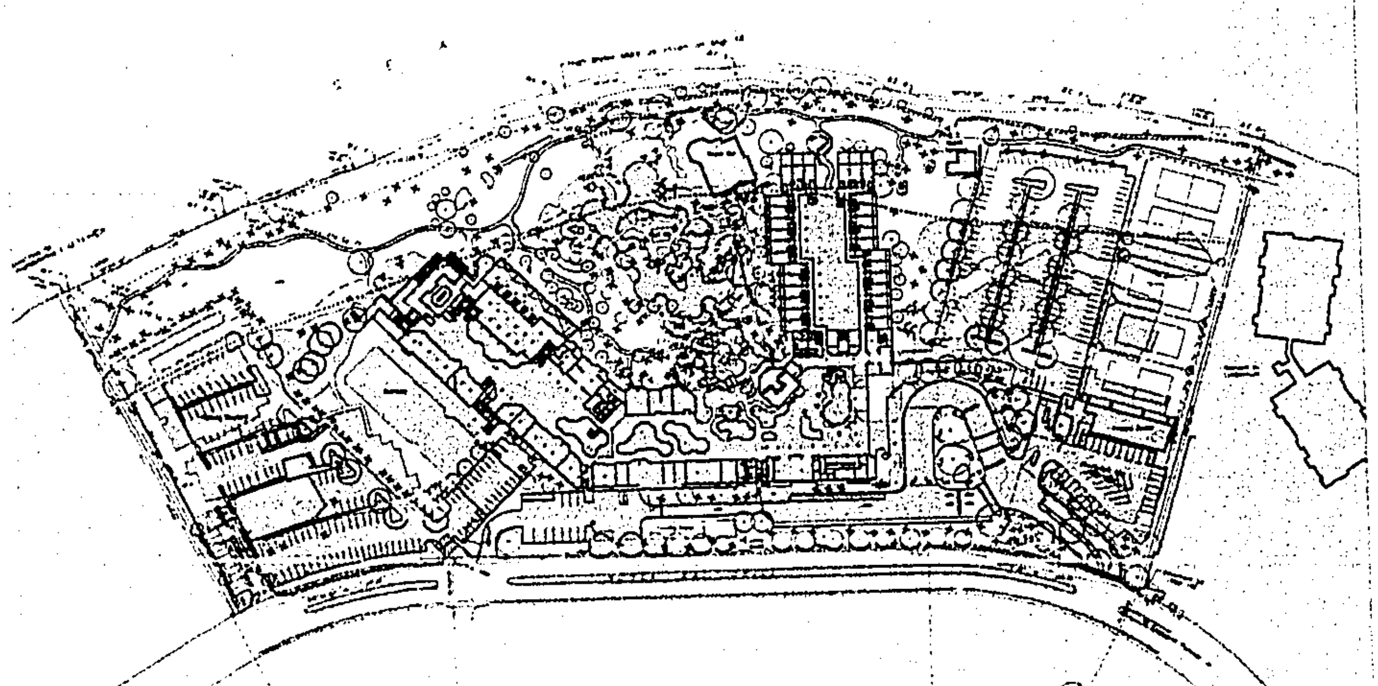
ıg Option 5)

Maui Ocean Club Sequel Project
PROPOSED SITE PLAN

FIGURE
8



Existing Conditions (impervious coverage)
Lobby Level Site Plan



New Conditions (impervious coverage)
Lobby Level Site Plan

Marriott's
MAUI OCEAN CLUB

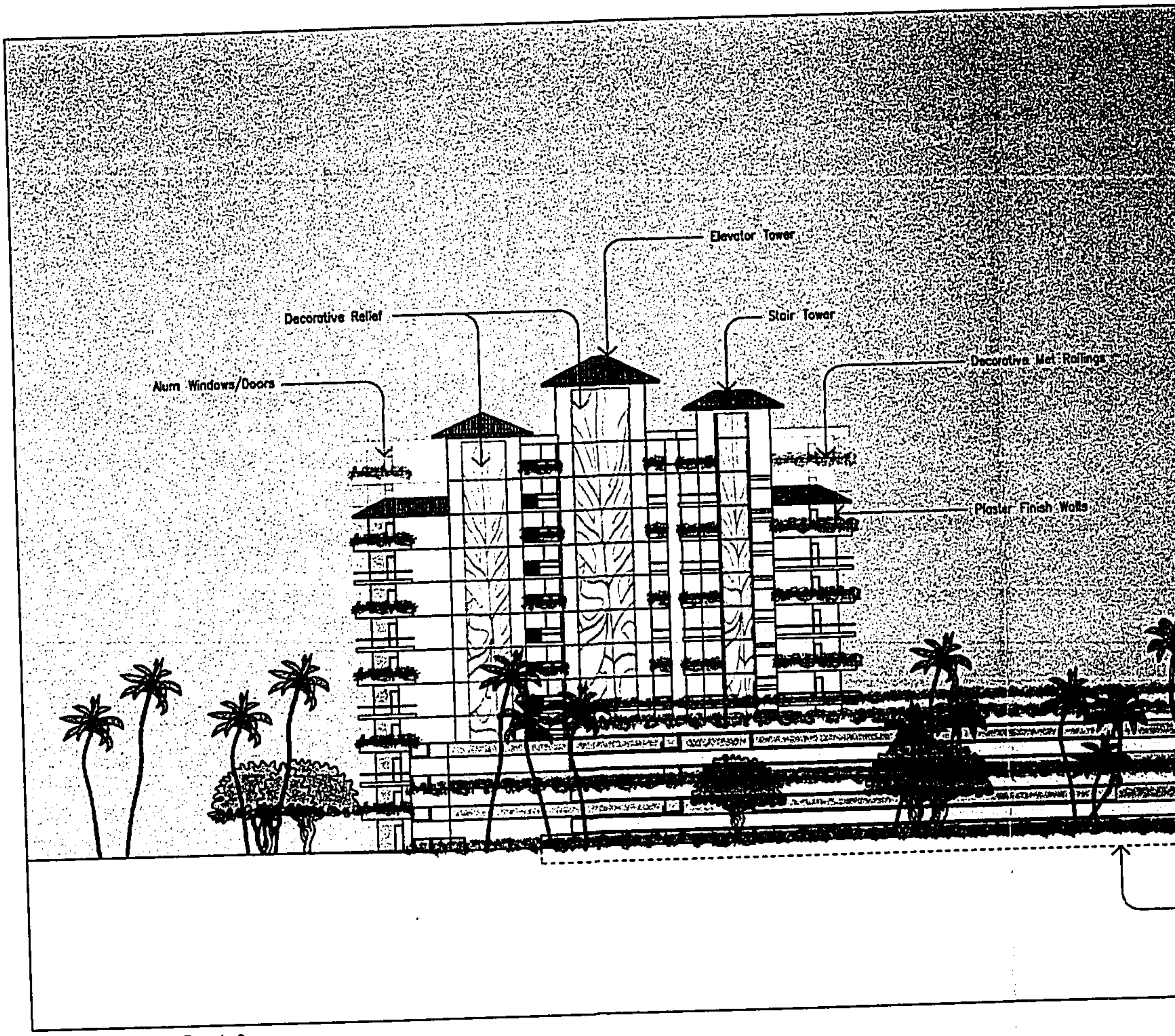
GROUP 70
INTERNATIONAL

20 May 2012

Note: The analysis above depicts Design & Siting Option 3. The preferred alternative, Option 5 will have a slightly smaller footprint for the Napili building, and will thus will result in less impervious area than depicted above

Maui Ocean Club Sequel Project
IMPERVIOUS SURFACE PLAN

FIGURE 9

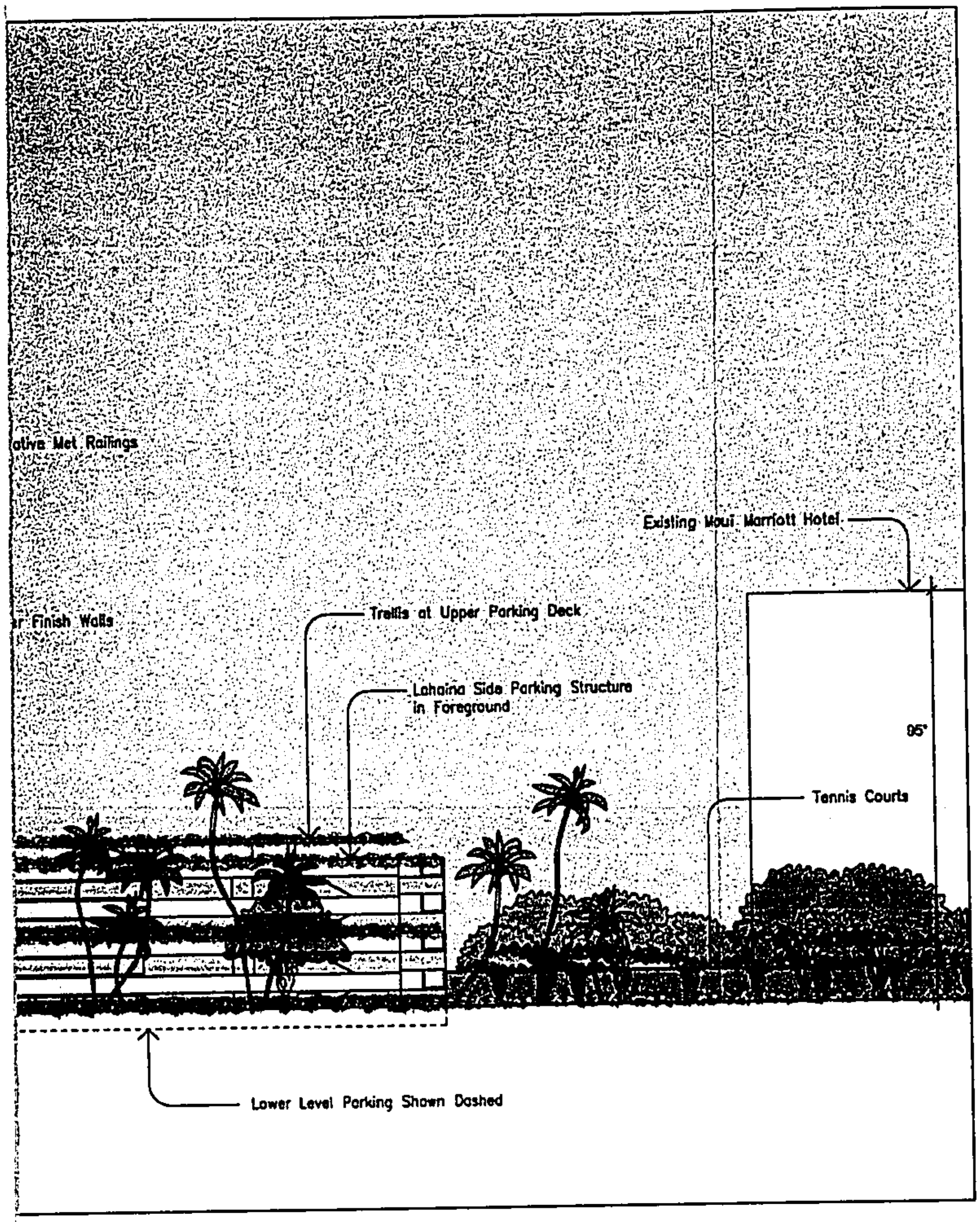


Mauka Elevation Looking Towards Ocean

Marriott's MAUI OCEAN CLUB

Sequel Buildings - Lahaina Side New W

143 Unit Scheme: 10/12 Stories



ide New Wing
Stories

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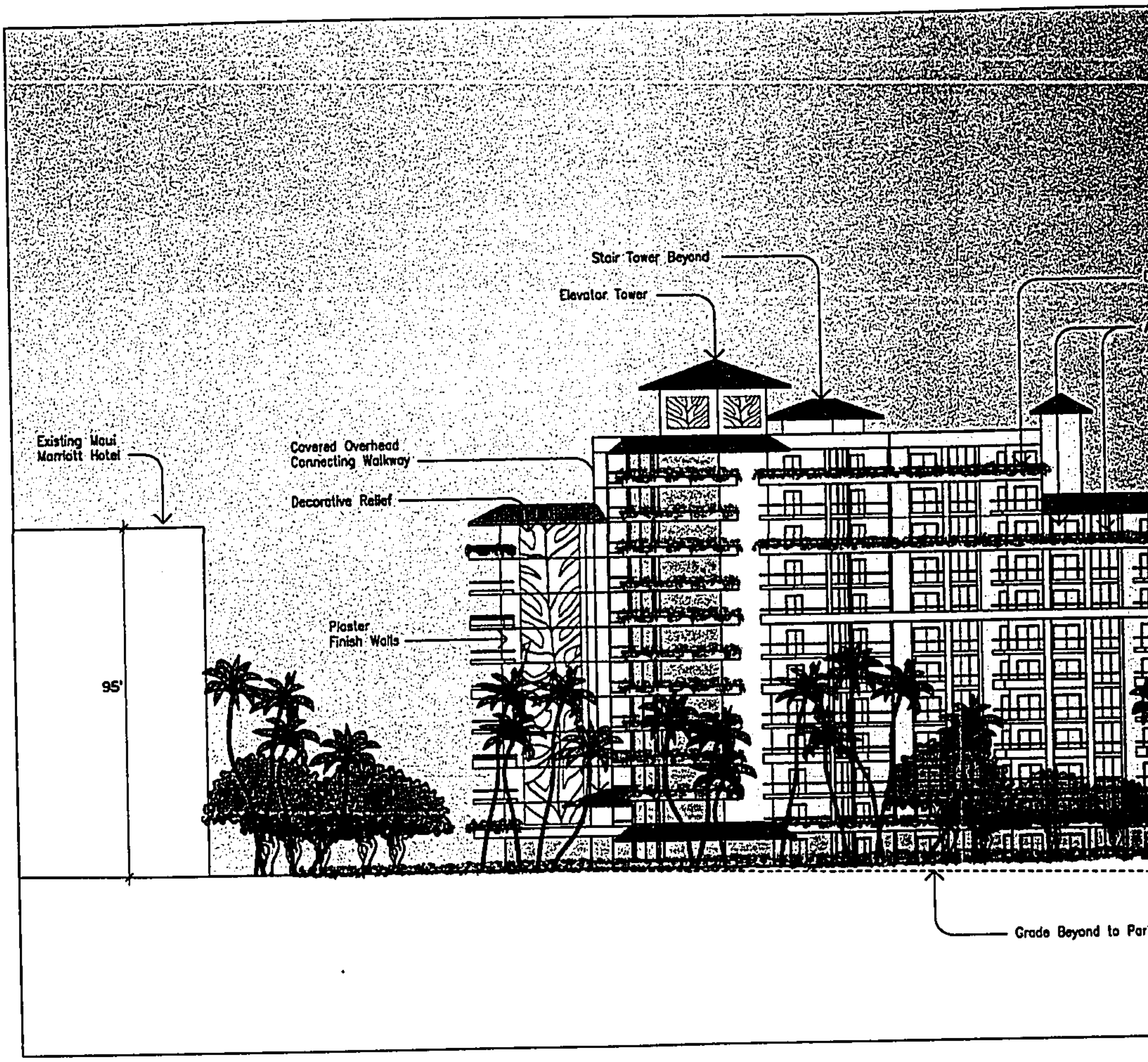
22 May 2003

Maui Ocean Club Sequel Project
ELEVATIONS: LAHAINA BUILDING

FIGURE 10A

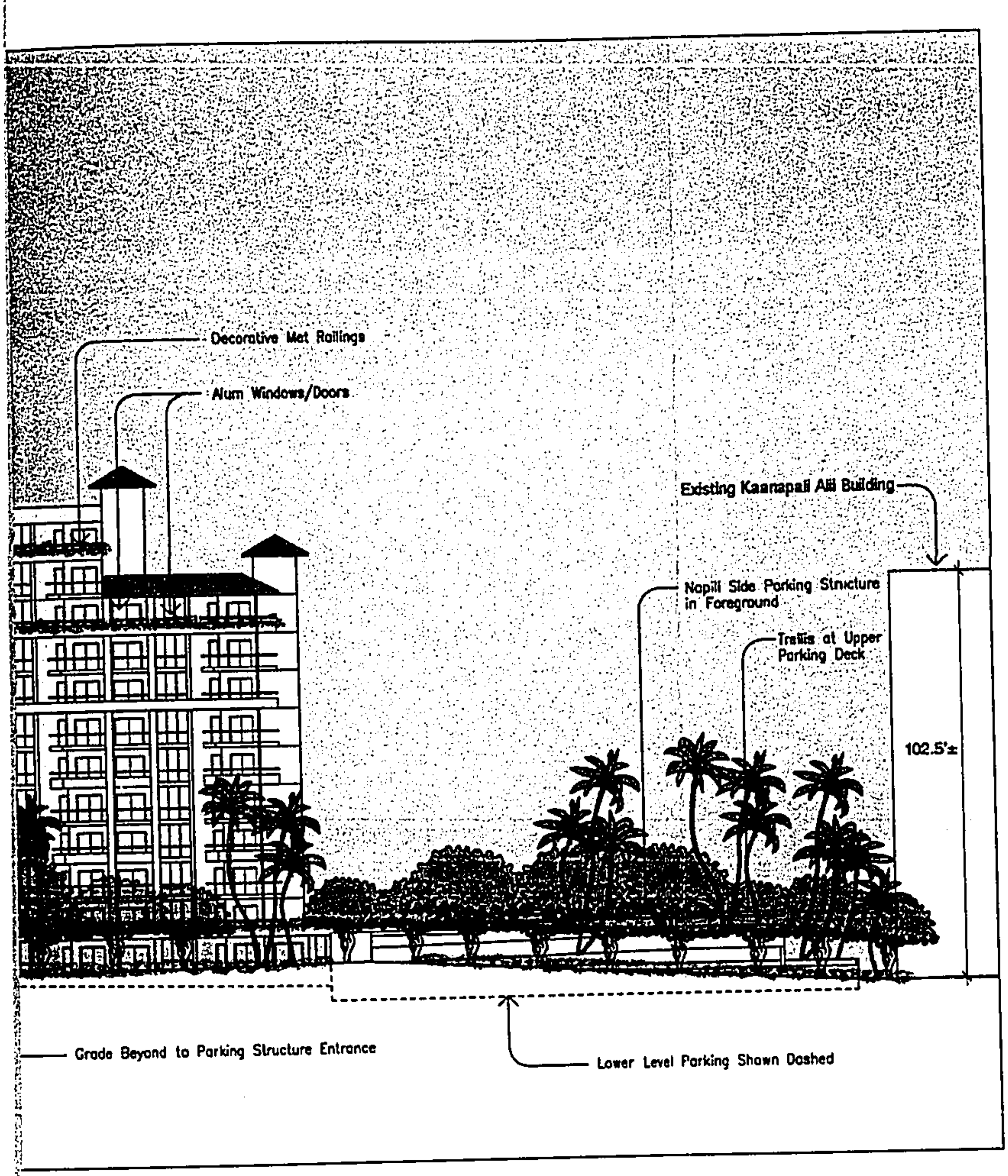


Mauka Elevation Looking Towards Ocean

Marriott's MAUI OCEAN CLUB

Sequel Buildings - Napili Side New W
10/12 Scheme (143 Units)

(Design & Siting Option 5)



GROUP 70 INTERNATIONAL

21 May 2003
(Revised)

i Side New Wing
3 Units)

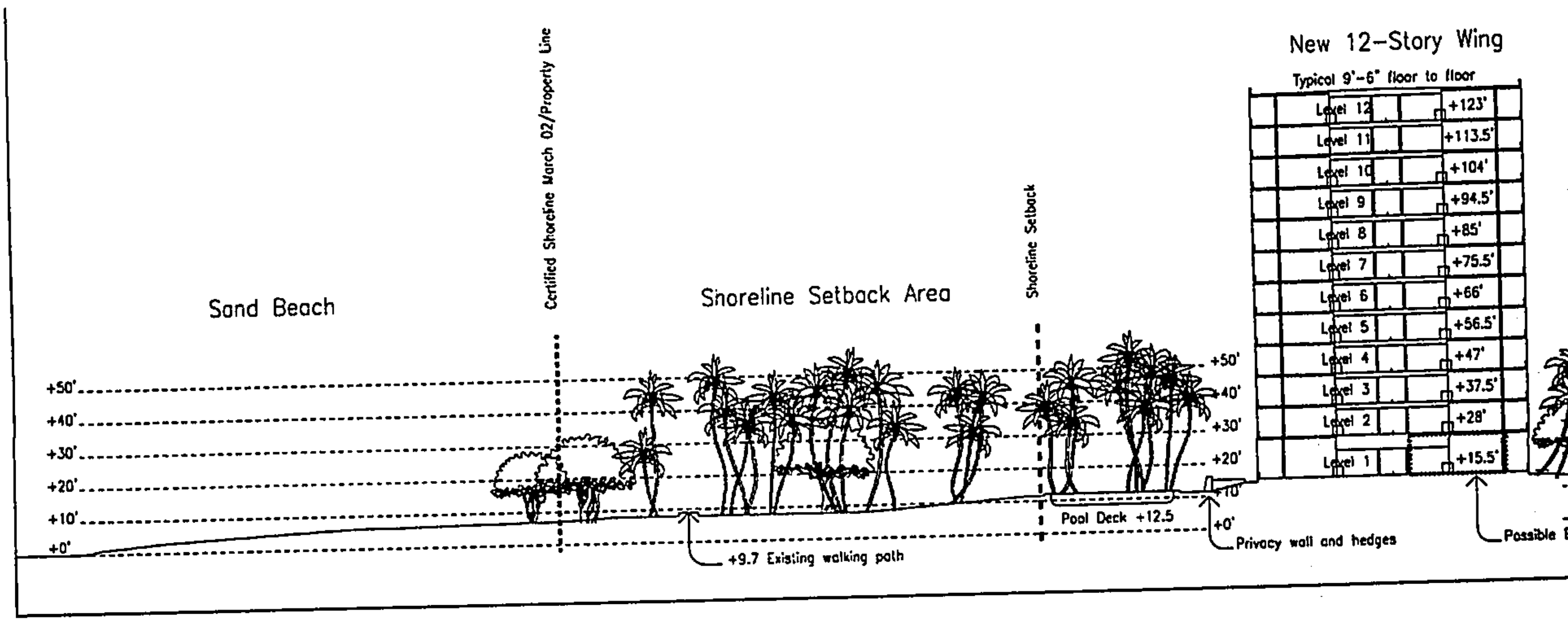
ption 5)

Maui Ocean Club Sequel Project
ELEVATIONS: NAPILI BUILDING

FIGURE 10B

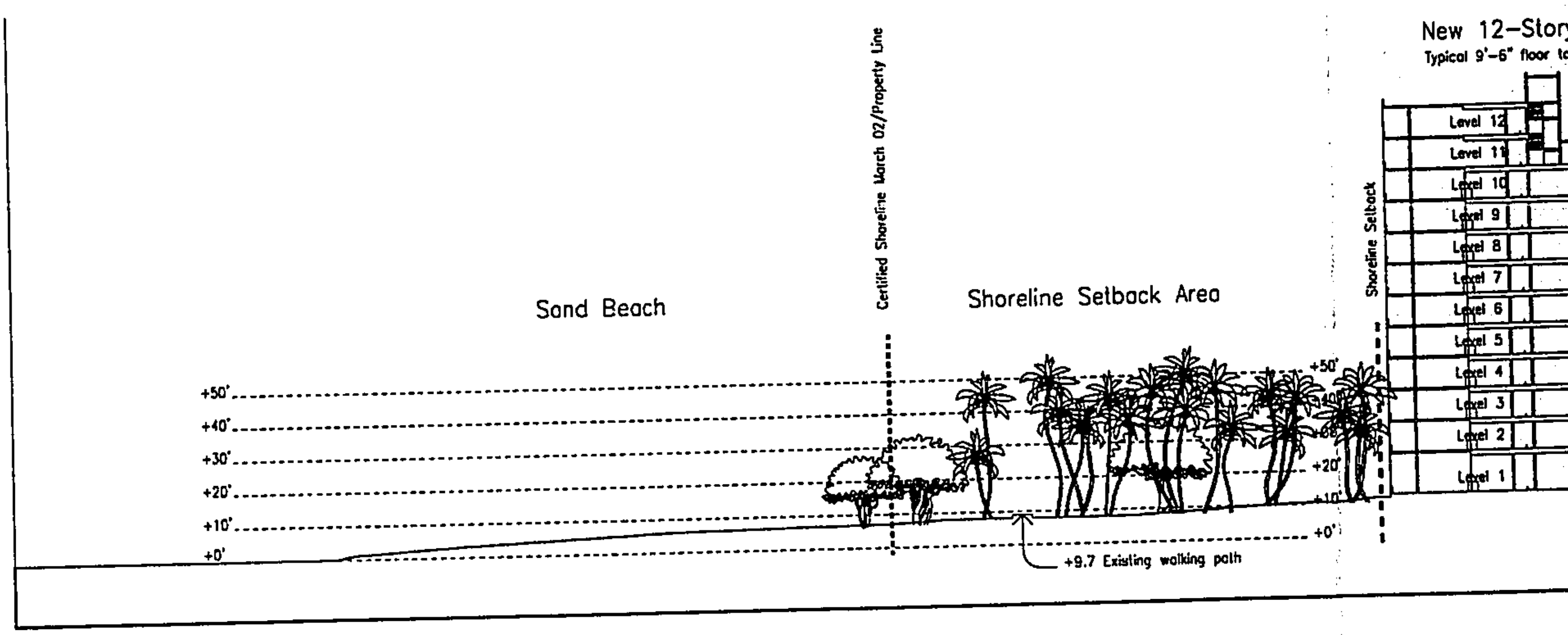
Marriott's MAUI OCEAN CLUB

Site Section 1: Napili Side New Win



Marriott's MAUI OCEAN CLUB

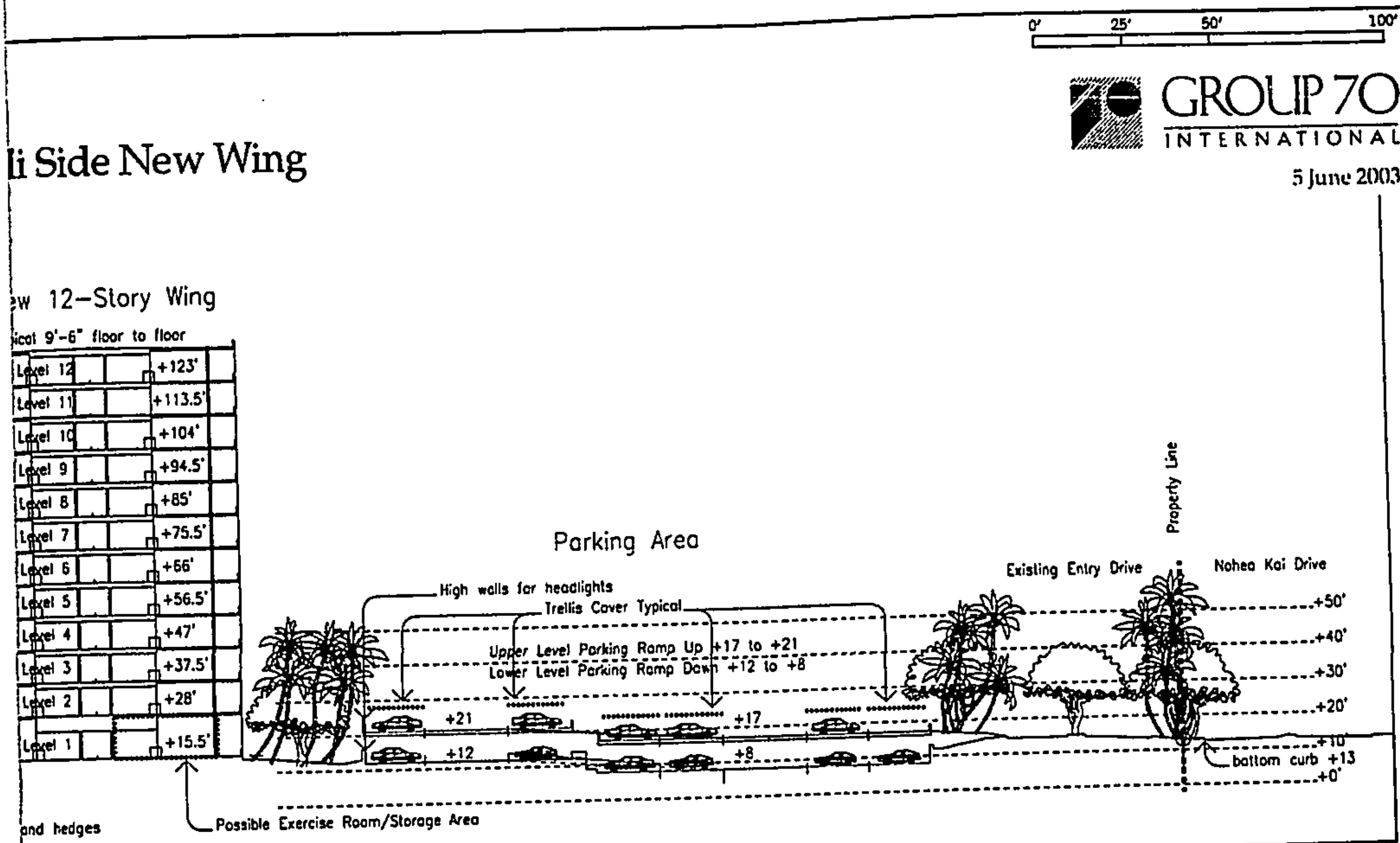
Site Section 2: Lahaina Side New W



GROUP 70 INTERNATIONAL

5 June 2003

li Side New Wing



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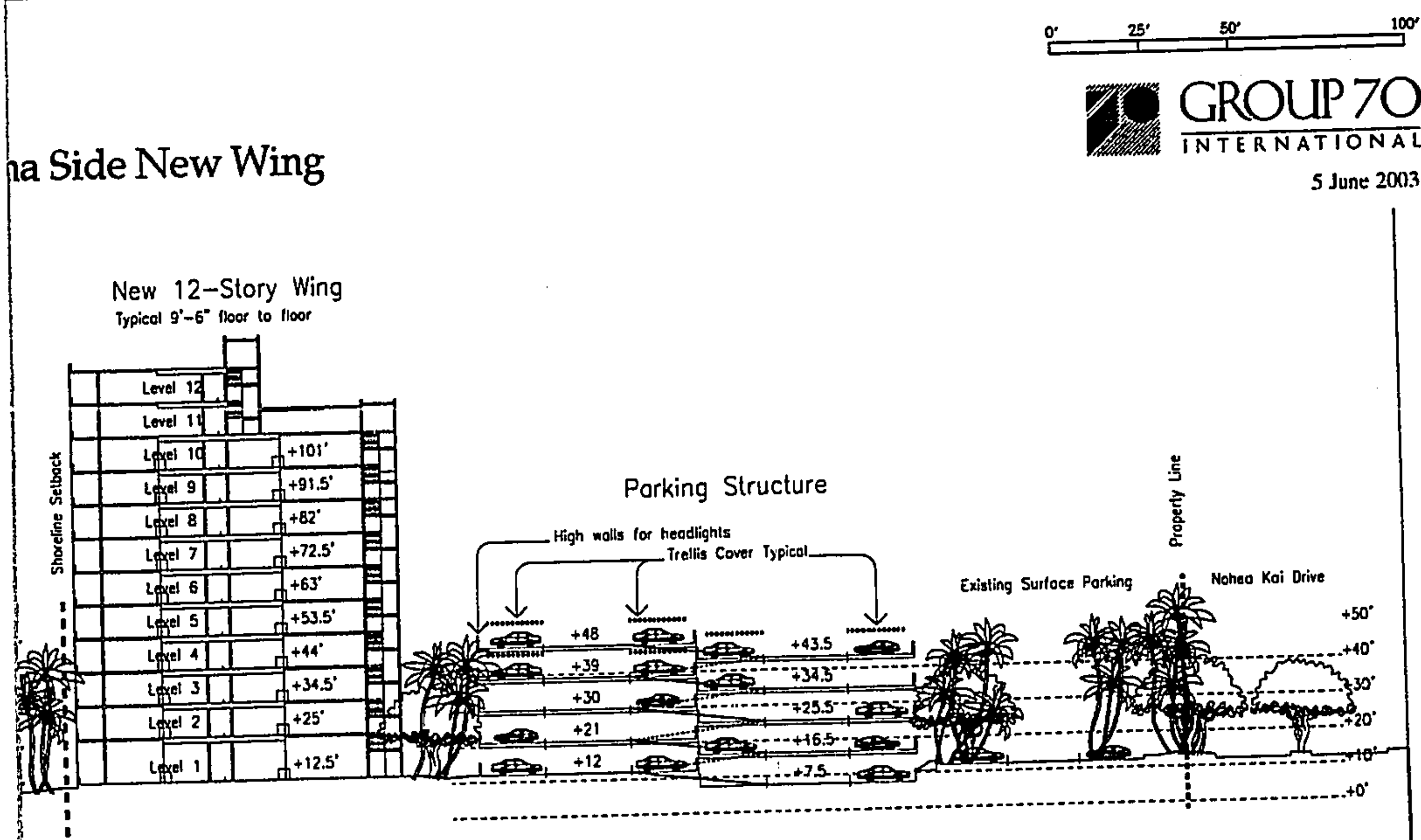
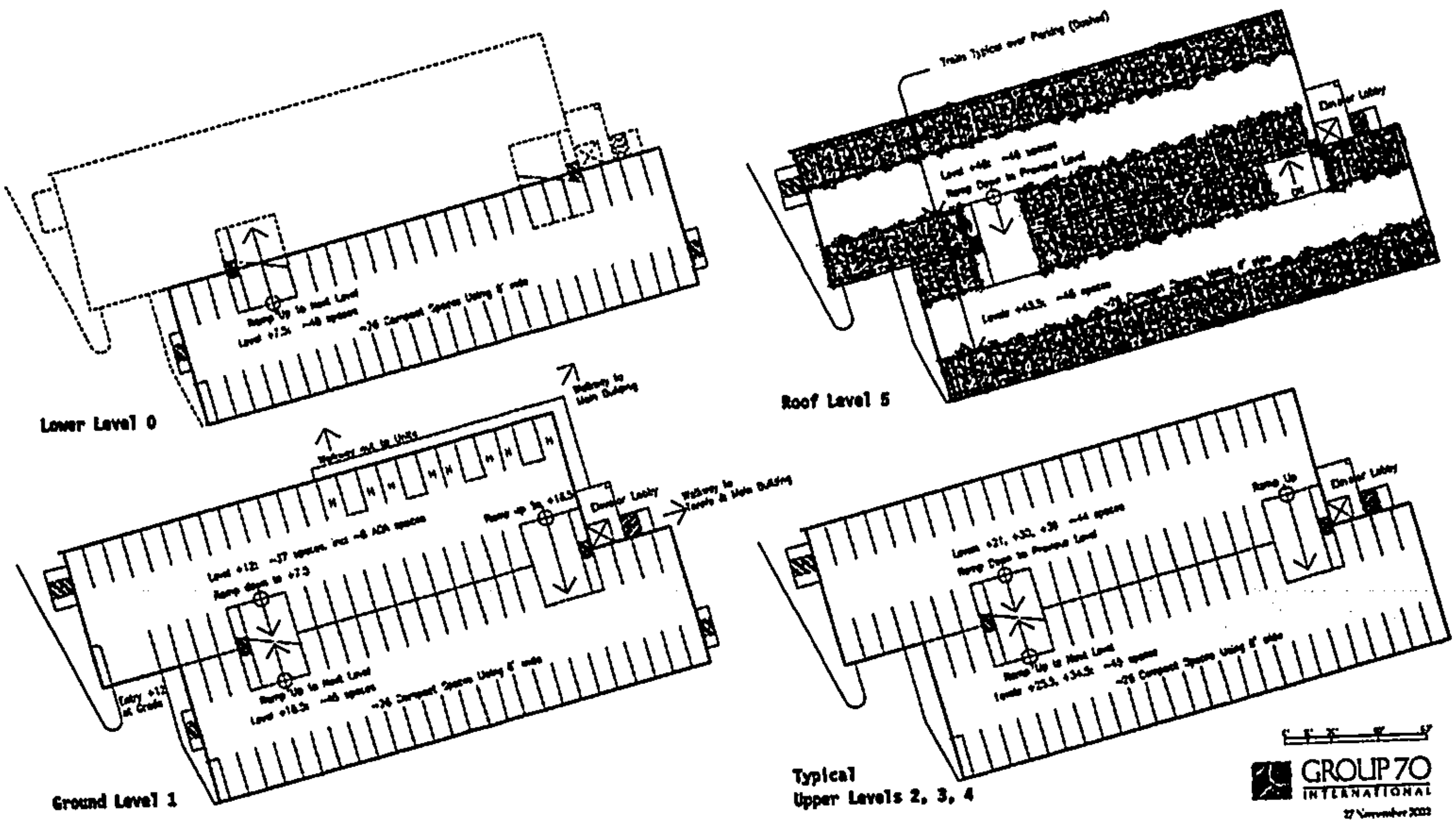
5 June 2003

na Side New Wing



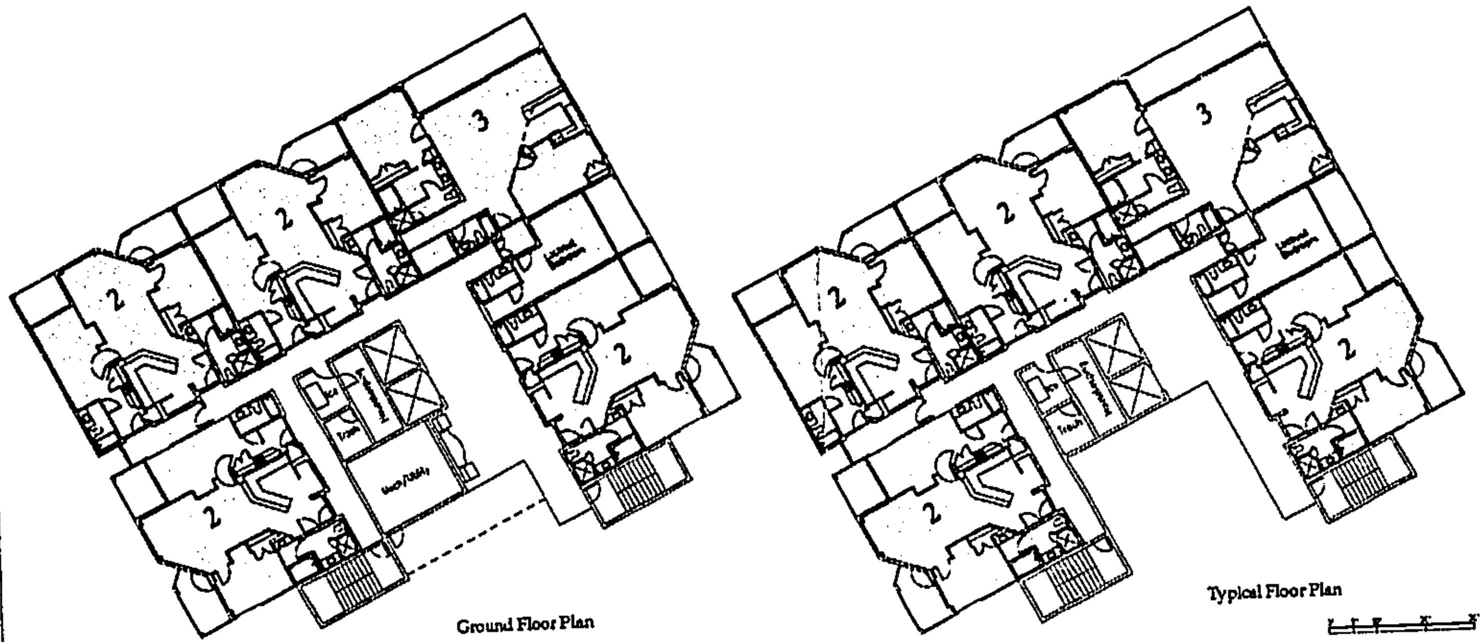
Maui Ocean Club Sequel Project
SECTIONS

FIGURE 11



Sequel Buildings -Lahaina Side Parking Structure Floor Plans

Marriott's
MAUI OCEAN CLUB



Ground Floor Plan

Typical Floor Plan

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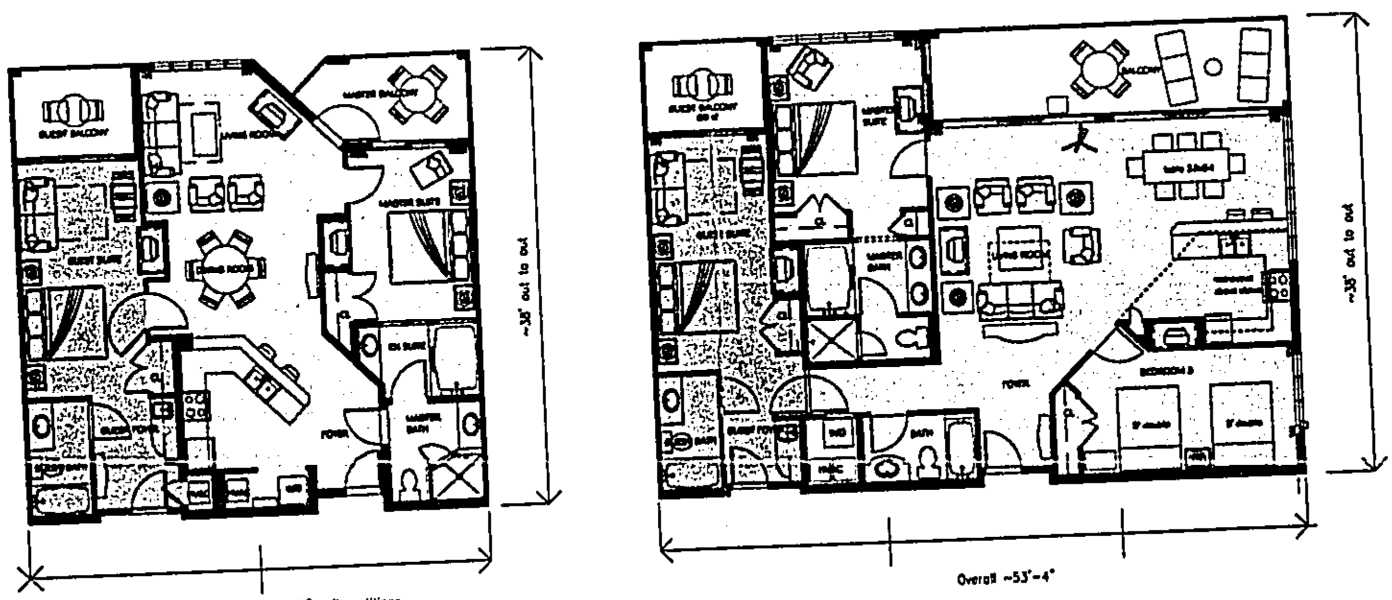
Sequel Buildings - Lahaina Side Building



~38' on center, based on 8" unit partitions

2 - Bedroom Typical Unit

Overall ~53'-4"

3 - Bedroom Typical Unit

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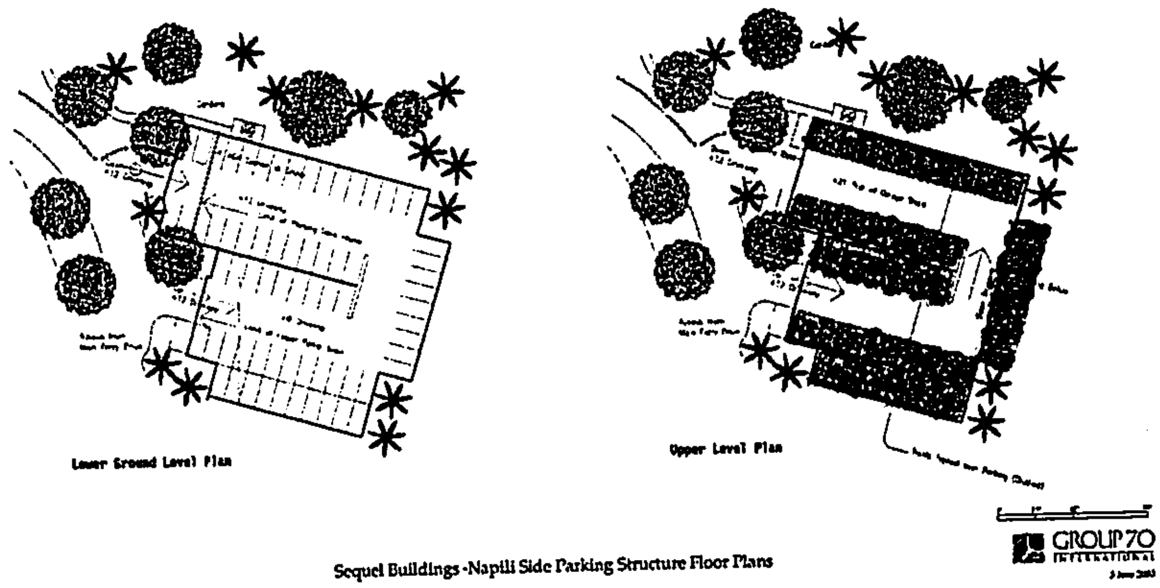
Sequel Buildings - Unit Plans

Maui Ocean Club Sequel Project
FLOOR AND UNIT PLANS: LAHAINA BUILDING

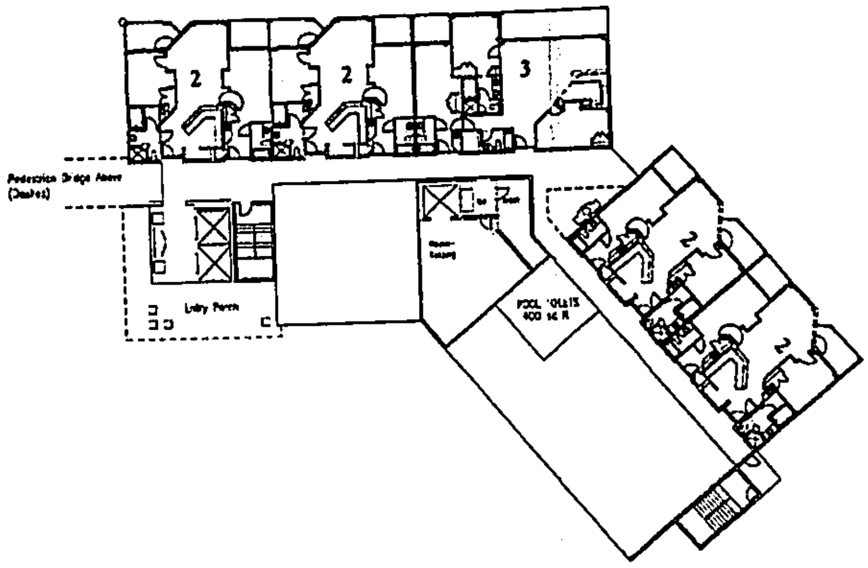
FIGURE 12A



Sequel Buildings -Napili Side Parking Structure Floor Plans

Marriott's
MAUI OCEAN CLUB

Marriott's
MAUI OC



Marriott's MAUI OCEAN CLUB

Sequel Buildings - Napili Side Building Ground Floor Plan

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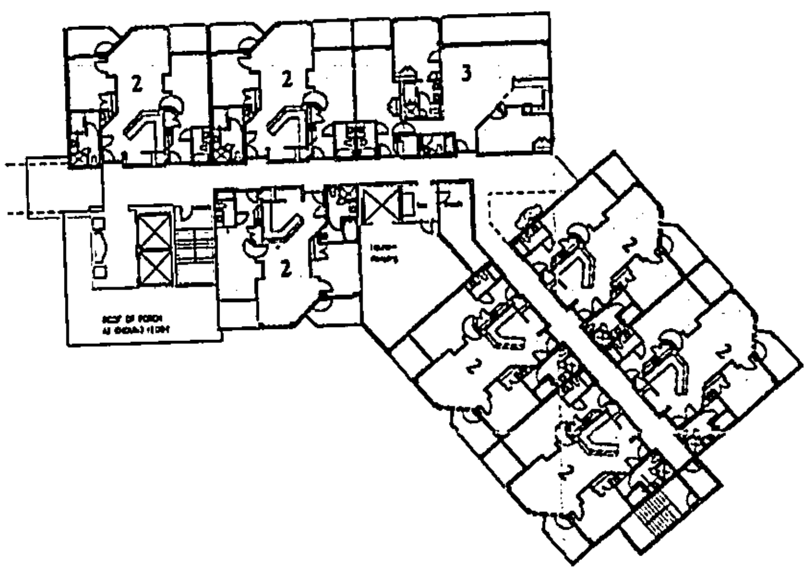

Marriott's MAUI OCEAN CLUB

Sequel Buildings - Napili Side Building Typical Floor Plan

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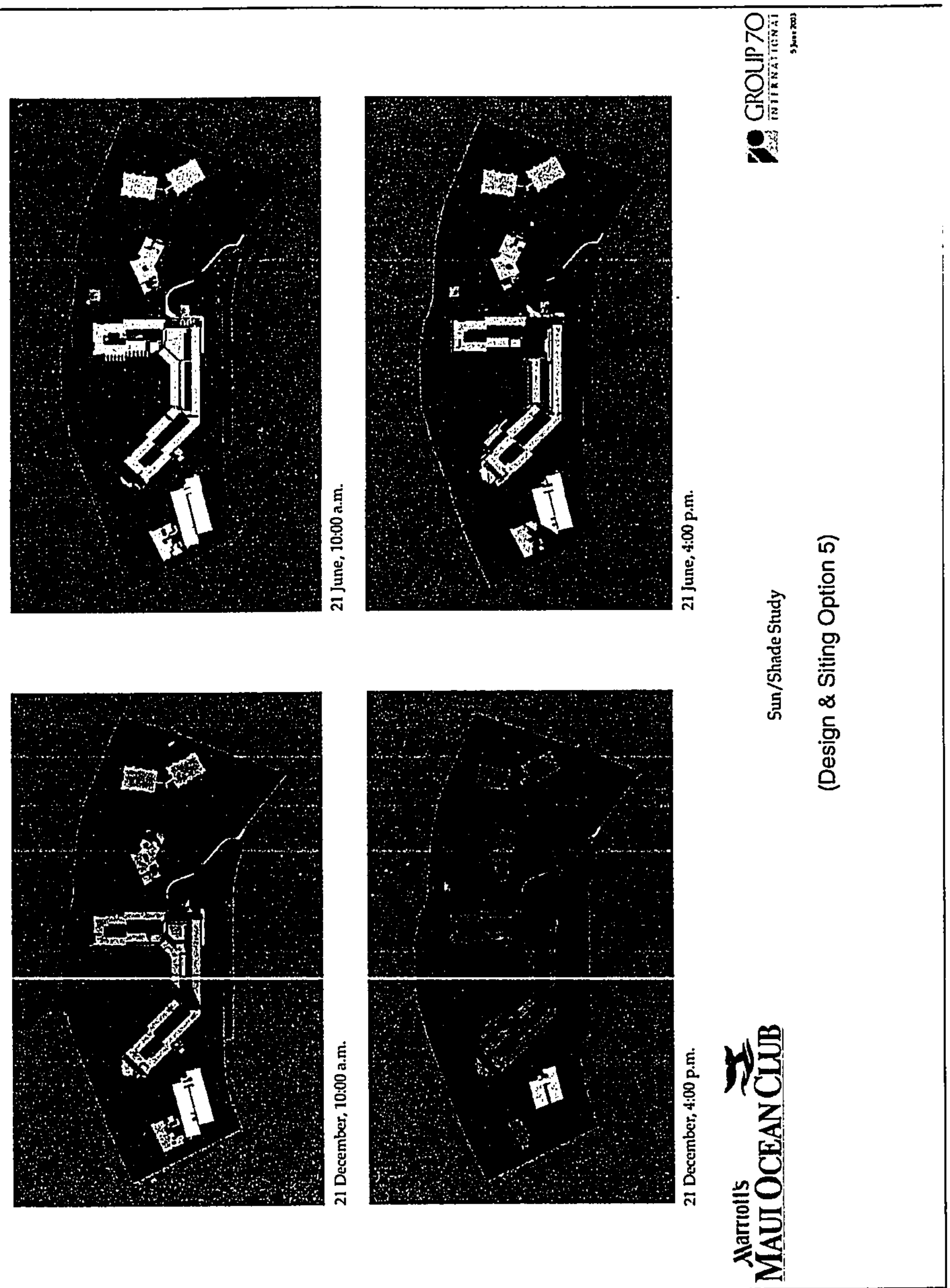
Maui Ocean Club Sequel Project
FLOOR AND UNIT PLANS: NAPILI BUILDING

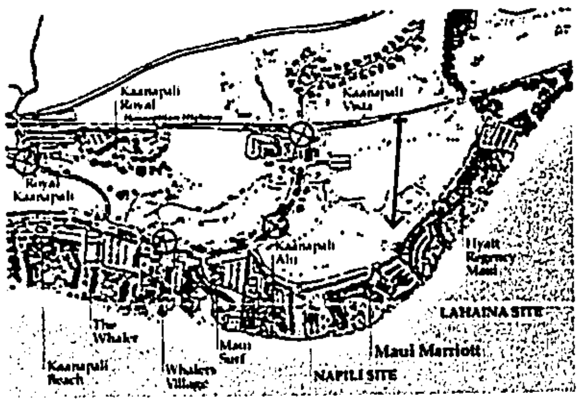
FIGURE 12B

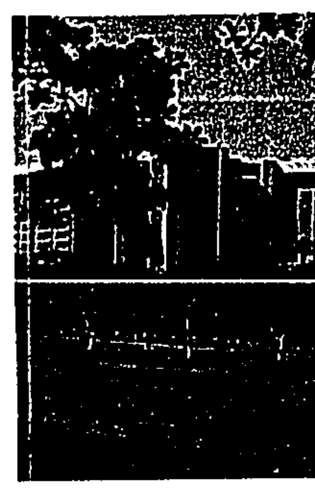


Maui Ocean Club Sequel Project
SUN & SHADE ANALYSIS PLAN

FIGURE 13

View of Lahaina Site from Honoapiilani Highway

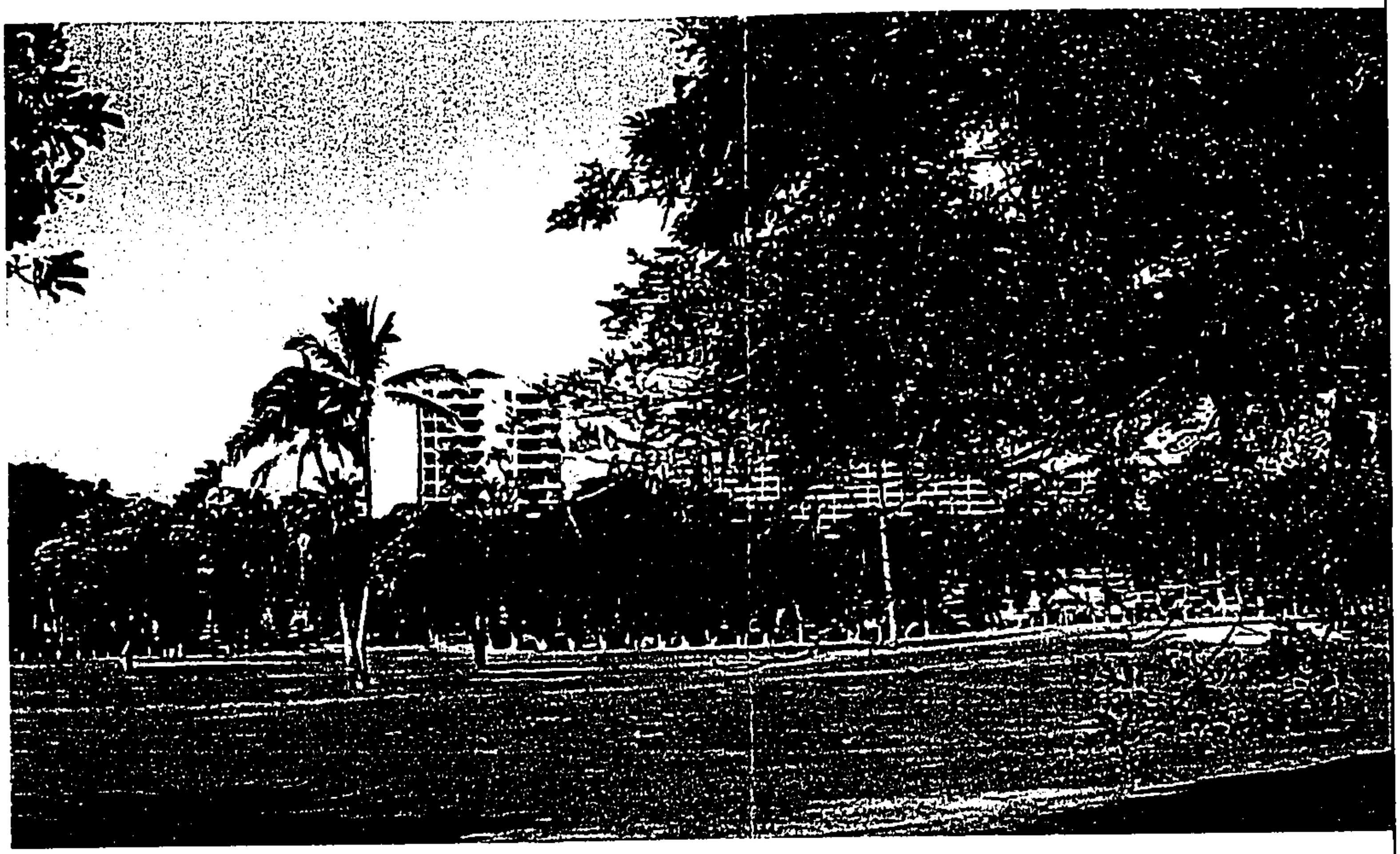


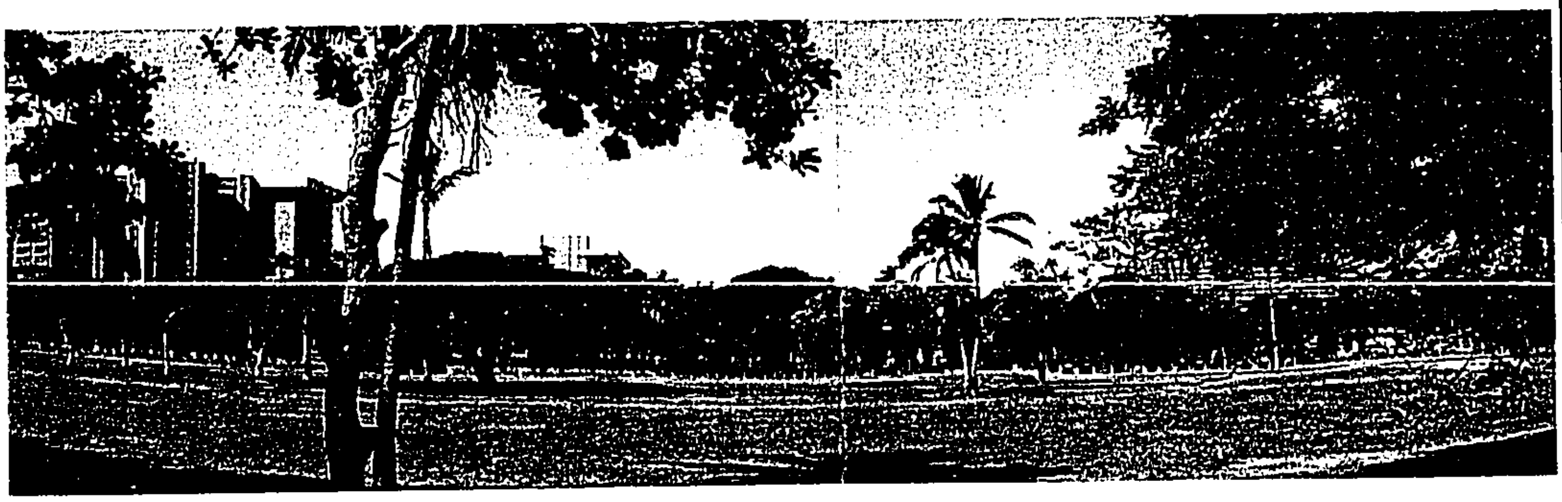


Existing

Marriott's
MAUI OCEAN CLUB

Design &





:xisting

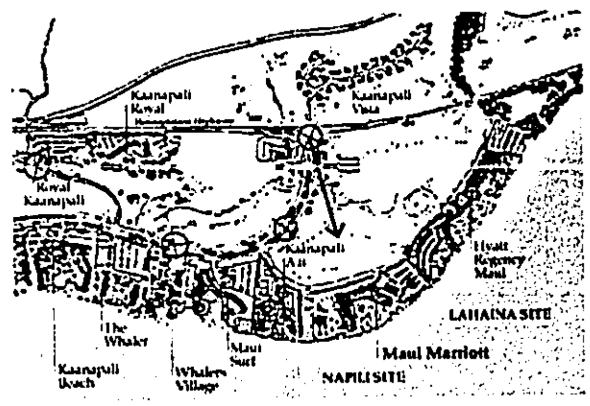
GROUP 70 INTERNATIONAL

5 June 2003

Exhibit 11d (Revision)

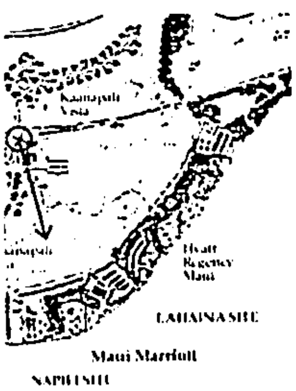
Design & Siting Option 5	Maui Ocean Club Sequel Project SIMULATED PUBLIC VIEWS	FIGURE 14A

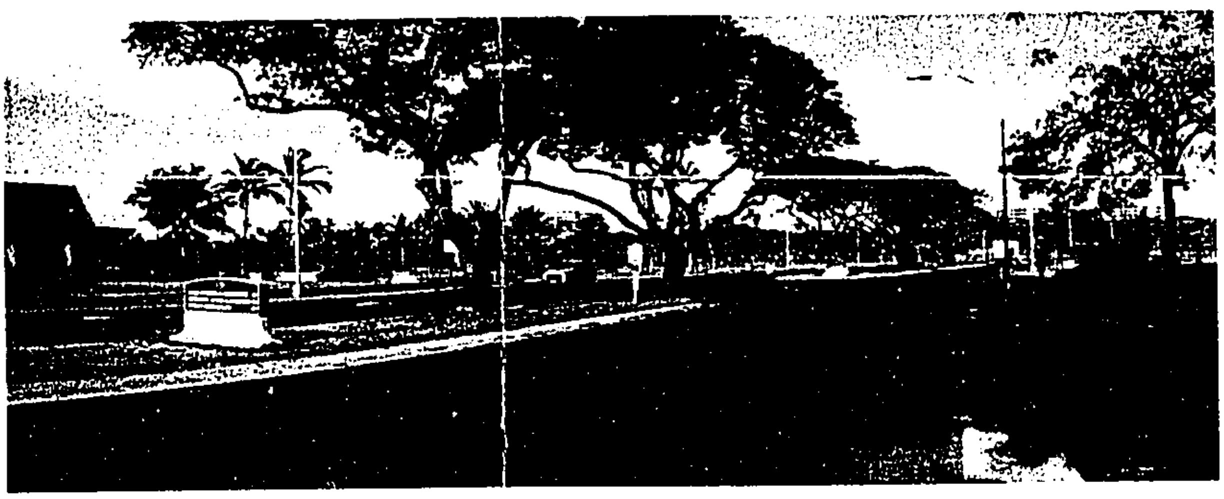
View from Kaanapali Resort Main Entrance



Marriott's
MAUI OCEAN CLUB

Design &





Existing

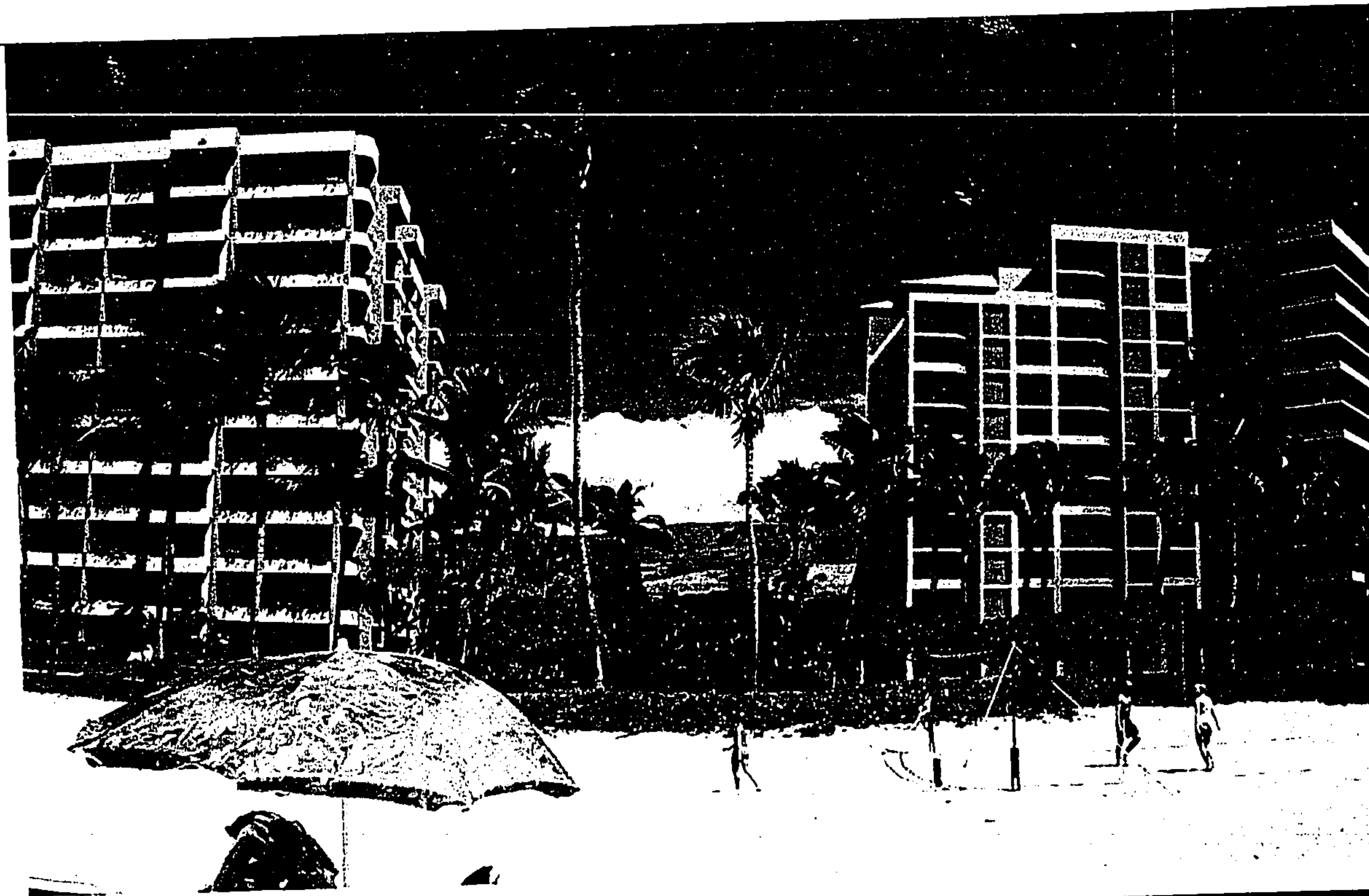
GROUP 70
INTERNATIONAL

5 June 2003

Design & Siting Option 5

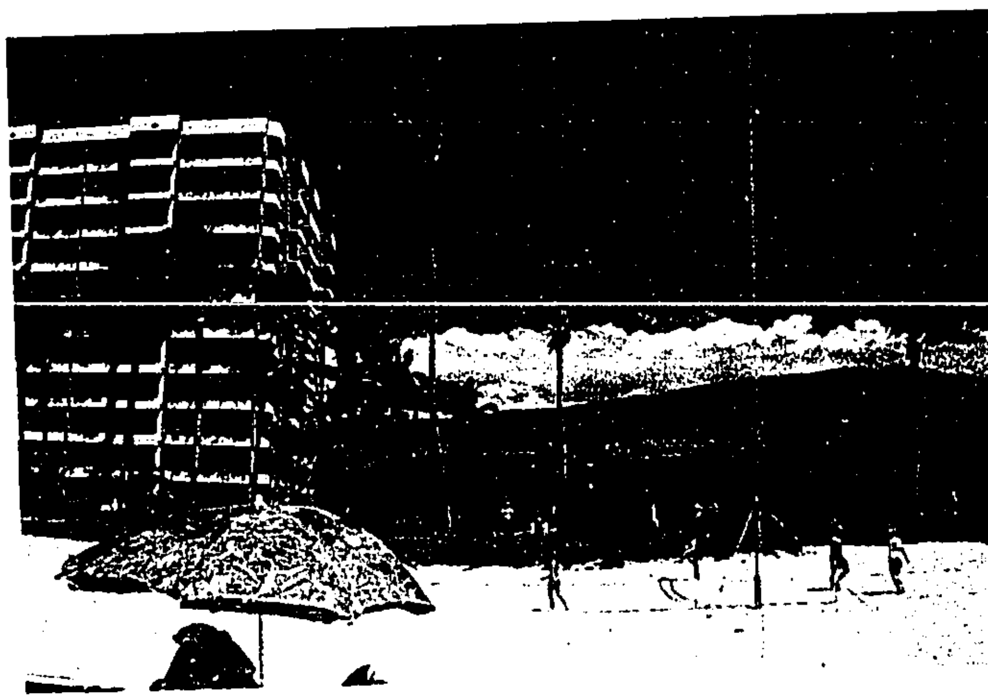
Maui Ocean Club Sequel Project
SIMULATED PUBLIC VIEWS

FIGURE 14B



View from Kaanapali Beach - North View Corridor

Marriott's
MAUI OCEAN CLUB



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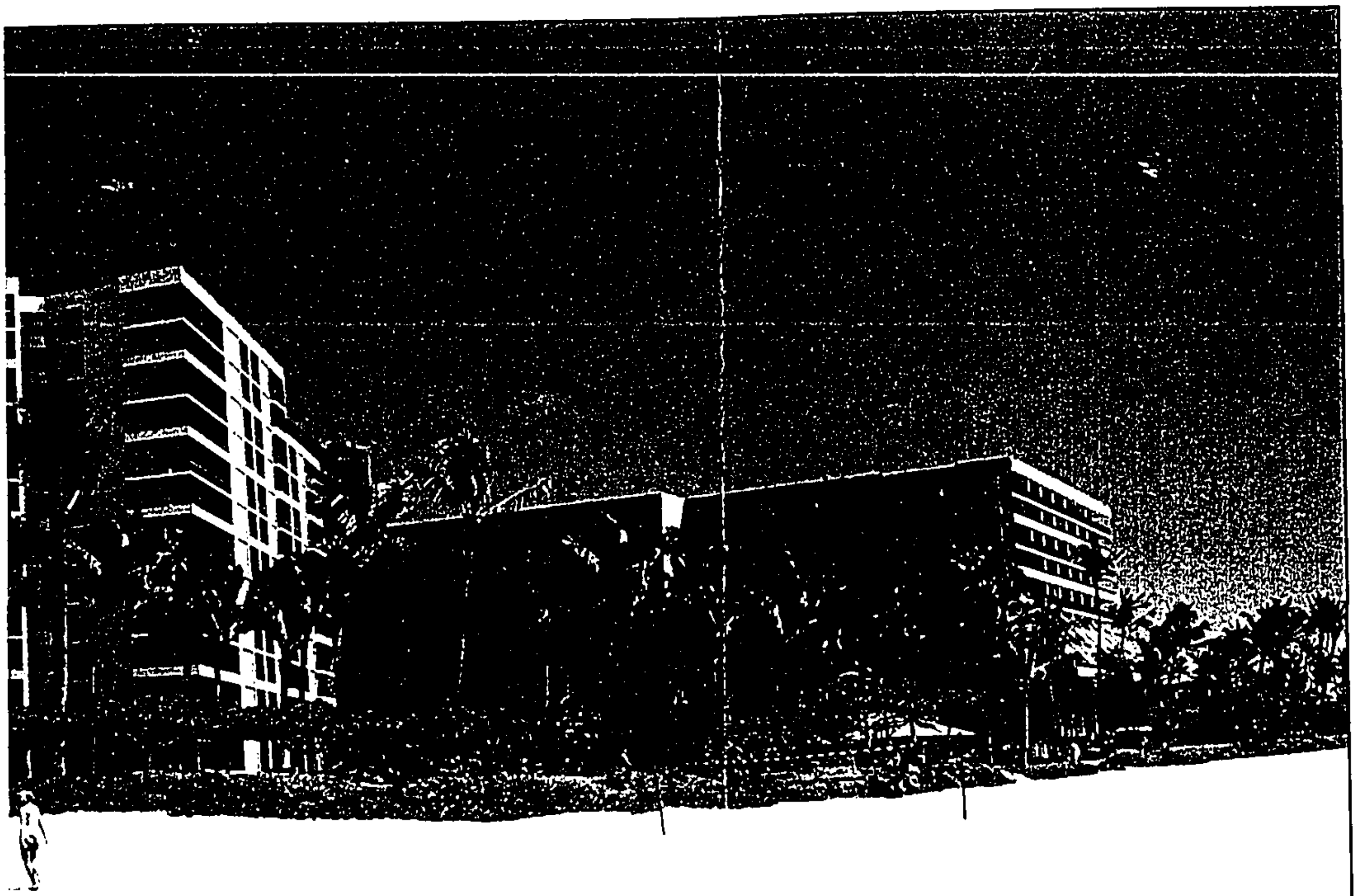
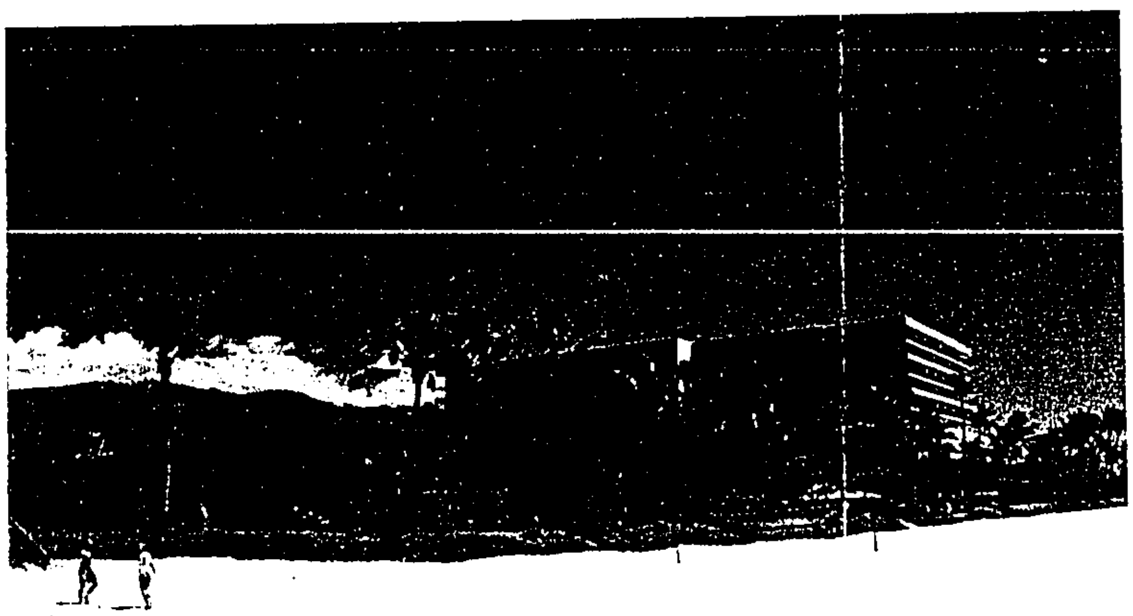




GROUP 70
INTERNATIONAL
5 June 2003

Design & Siting Option 5

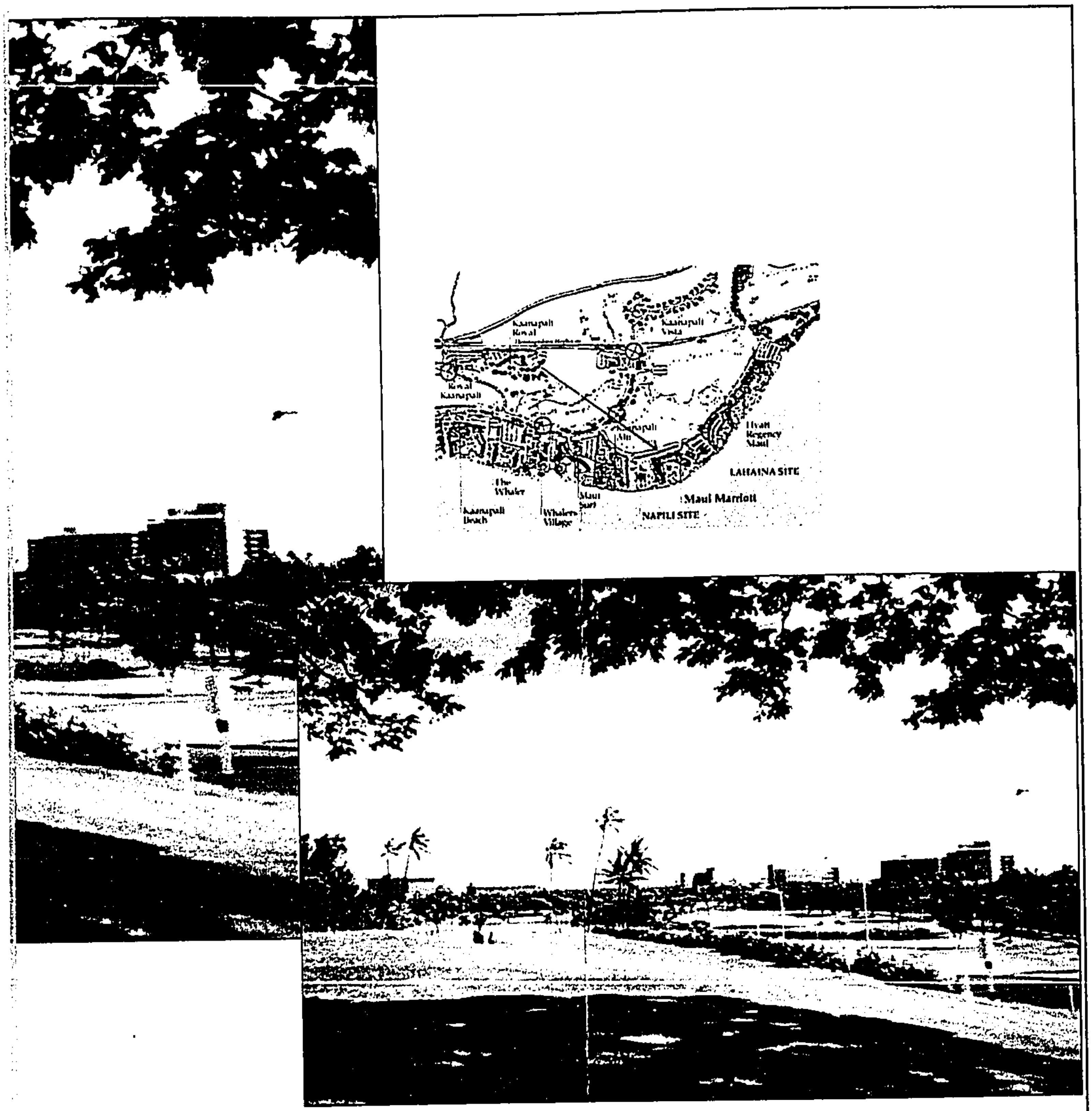
Maui Ocean Club Sequel Project
SIMULATED PUBLIC VIEWS

FIGURE
14C

View from Kekaa Drive

Marriott's
MAUI OCEAN CLUB

Design



Existing

GROUP 70 INTERNATIONAL

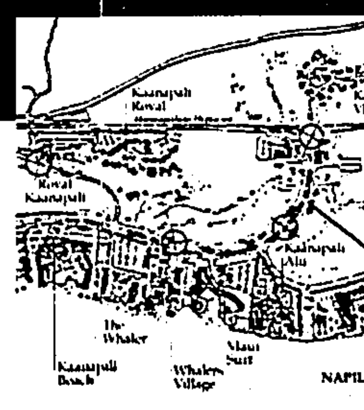
5 June 2003

Design & Siting Option 5

Maui Ocean Club Sequel Project
SIMULATED SEMI-PUBLIC VIEWS

FIGURE 15A

View of Lahaina Site from Kaanapali Parkway



Marriott's
MAUI OCEAN CLUB

Design

Existing

GROUP 70 INTERNATIONAL

5 June 2003

Design & Siting Option 5

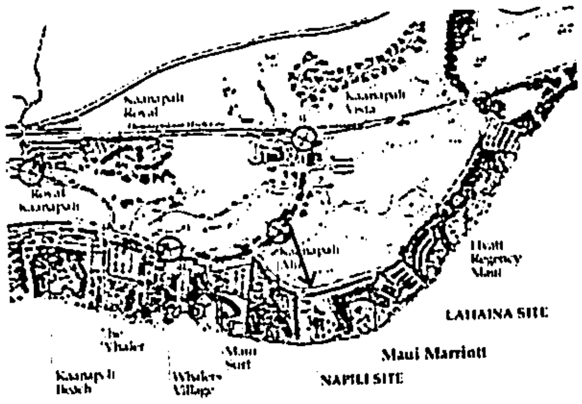
Maui Ocean Club Sequel Project
SIMULATED SEMI-PUBLIC VIEWS

FIGURE 15B

View of Napili Site from Kaanapali Parkway

Marriott's
MAUI OCEAN CLUB

Design



Existing

GROUP 70 INTERNATIONAL

Design & Siting Option 5

Maui Ocean Club Sequel Project
SIMULATED SEMI-PUBLIC VIEWS

FIGURE 15C

TABLES & CHARTS

Table 1: Unit Breakdowns and Comparative Density of the Maui Marriott Hotel, the Maui Ocean Club, and the Maui Ocean Club Sequel (Option 5)

Period		Type	Units in Type	Keys in Type	Keys used per option	Typical party size per option	Max allowed party size per option	Keys in Option	Key Utilization Rate - High	Key Utilization Rate - Low
Historical Use 1980-2000		**Maui Marriott Hotel**								
	H	Hotel Room	720	720						
		100% Occupancy Example			1	2.5	4	720	100.0%	
		90% Occupancy Example			1	2.5	4	720	90.0%	
		80% Occupancy Example			1	2.5	4	720	80.0%	80.0%
		70% Occupancy Example			1	2.5	4	720		70.0%
		60% Occupancy Example			1	2.5	4	720		60.0%
Current Use 2002 Data		**Maui Ocean Club** (Ongoing Conversion of Hotel Units to Timeshare Suites)								
	H	Hotel Room	344	344						
		Full Use of Unit			1	2.5	4	344	92.0%	
	A	1 Bedroom Suite	115	115						
		Full Use of Unit			1	2.5	4	115	98.0%	
	B	2 Bedroom Suite w/ Lockoff	39	78						
		Full Use of Unit			2	3.8	6	78	46.9%	
		Partial Use: Master 1BR			1	2.5	4	78	21.4%	
		Partial Use: Lockoff			1	2.0	2	78	19.9%	
		Totals	*154*	*193*						
		[illegible]	[illegible]	[illegible]						
Future Use ~2005+		**Maui Ocean Club** (Completed Conversion of Hotel Units)								
	A	1 Bedroom Suite	183	183						
		Full Use of Unit			1	2.5	4	183	98.0%	94.0%
	B	2 Bedroom Suite w/ Lockoff	129	258						
		Full Use of Unit			2	3.8	6	258	46.9%	63.6%
		Partial Use: Master 1BR			1	2.5	4	258	21.4%	16.4%
		Partial Use: Lockoff			1	2.0	2	258	19.9%	7.9%
		Totals	*312*	*441*						
Future Use ~2009+		**Sequel Project**								
	C	2 Bedroom Suite w/out Lockoff	10	10						
		Full Use of Unit			1	3.8	8	10	98.0%	94.0%
	D	2 Bedroom Suite w/ Lockoff	109	218						
		Full Use of Unit			2	3.8	8	218	46.9%	63.6%
		Partial Use: Master 1BR			1	2.5	4	218	21.4%	16.4%
		Partial Use: Lockoff			1	2.2	4	218	19.9%	7.9%
	E	3 Bedroom Suite w/ Lockoff	24	48						
		Full Use of Unit			2	7.0	12	48	46.9%	63.6%
		Partial Use: Master 2BR			1	3.8	8	48	21.4%	16.4%
		Partial Use: Lockoff			1	2.2	4	48	19.9%	7.9%
		Totals	*143*	*276*						
		[illegible]	[illegible]	[illegible]						

on gh †	Key Utilization Rate- Low ‡	[redacted]			Use Characteristics - Lowest Typical Use			Theoretical Maximum Use - (akin to bed unit count) (non-typical use)		
		[redacted]			Lower Hotel Use Ranges			Maximum Use Scenario		
					keys	parties	guests	keys	parties	guests
.0%		720	720	1800				720	720	2880
.0%		648	648	1620						
.0%	80.0%	576	576	[redacted]	576	576	[redacted]			
	70.0%				504	504	1260			
	60.0%				432	432	1080			
		[redacted]						Maximum Use Scenario		
								keys	parties	guests
.0%		316	316	791				344	344	1376
.0%		113	113	282		N/A		115	115	460
.9%		37	18	70						
.4%		17	17	42				39	39	156
.9%		16	16	31				39	39	78
		181	163	424				193	193	694
		[redacted]						[redacted]		
		[redacted]			Est. Lowest Use - Stabilized Resort			Maximum Use Scenario		
					keys	parties	guests	keys	parties	guests
3.0%	94.0%	179	179	448	172	172	430	183	183	732
5.9%	63.6%	121	61	230	164	82	312			
1.4%	16.4%	55	55	138	42	42	106	129	129	516
9.9%	7.9%	51	51	103	20	20	41	129	129	258
		407	346	919	399	317	888	441	441	1506
8.0%	94.0%	10	10	37	9	9	36	10	10	80
6.9%	63.6%	102	51	194	139	69	263			
1.4%	16.4%	47	47	117	36	36	89	109	109	436
9.9%	7.9%	43	43	95	17	17	38	109	109	436
6.9%	63.6%	23	11	79	31	15	107			
1.4%	16.4%	10	10	39	8	8	30	24	24	192
9.9%	7.9%	10	10	21	4	4	8	24	24	96
		244	182	582	243	159	572	278	278	1240
		[redacted]			[redacted]			[redacted]		2746

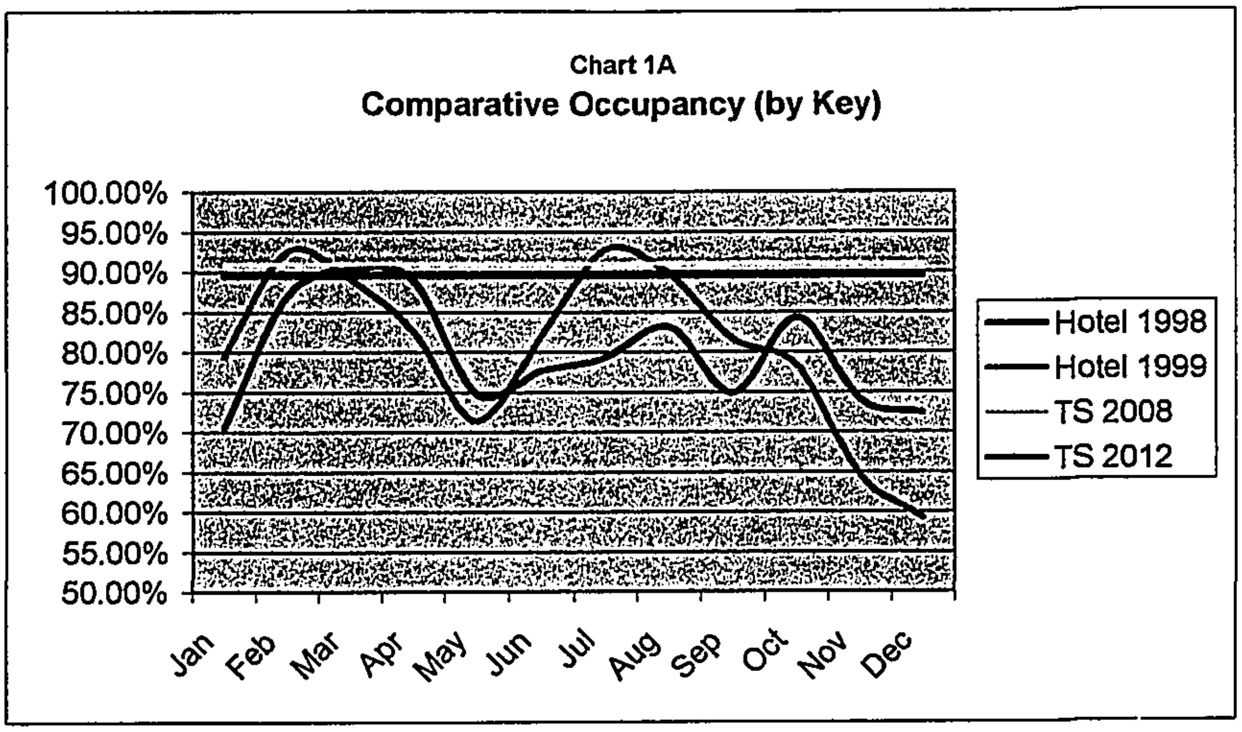


Chart 1A
Comparative Occupancy (by Key)
100.00%
95.00%
90.00%
85.00%
80.00%
75.00%
70.00%
65.00%
60.00%
55.00%
50.00%
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Hotel 1998
Hotel 1999
TS 2008
TS 2012

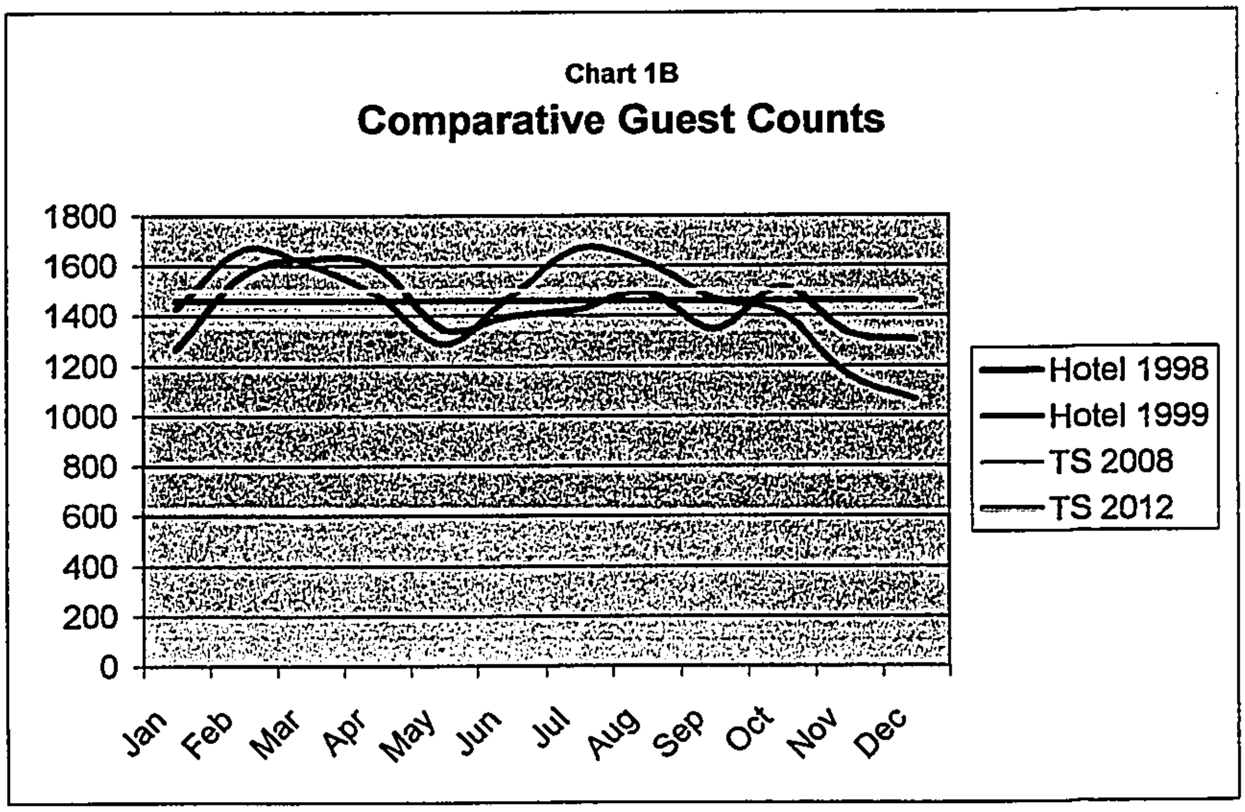


Chart 1B
Comparative Guest Counts
1800
1600
1400
1200
1000
800
600
400
200
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Hotel 1998
Hotel 1999
TS 2008
TS 2012

Notes on Table 1 & Charts 1A/1B

Occupancy of the Resort

Table 1 is included to provide estimated occupancy of the resort and a means to compare the differences in guest counts during the different periods of use (Hotel, Timeshare, and the addition proposed as the Sequel Project)

The version of Table 1 included in the Draft EIS made the assumption that approximately 20% of lock-off enabled rooms would be occupied by two parties at any given time. MVCI's observation of its vacation ownership system show that the number of parties at timeshare resorts typically exceeds the number of units by 10 to 20 percent. The Draft EIS presupposed the higher figure (20%) in certain calculations such as the resort population in terms of parties and guests. This was sometimes referring to the increase as 20% lockout occupancy.

The Final EIS revises density estimates by incorporating actual unit-type utilization rates and occupancy data, and corrected the unit breakdown to show the unit configuration that would be used in the latest Design Option (Option #5). The Final EIS also expands the analysis by including density estimations for the sales period of a timeshare resort, the stable period of a timeshare resort, and also provides a maximum use scenario for the Timeshare and Hotel.

Different Low(‡) and High(†) key utilization rates were provided for the different unit types and use variations of the Timeshare suites. During the sales period of the timeshare units (about 4 years), the number of parties and visitor population will be higher due larger component of "preview" customers and traditional "transient" hotel-style occupants. As owners buy the units, the number of parties will decrease and the average party sizes will increase. This is referred to as the stabilization of the resort. "High" utilization rates for the sales period were obtained from existing utilization rates of the Maui Ocean Club units (primarily 1-bedroom) and existing utilization rates from the MVCI Ko`Olina Resort, which is entirely composed of two-bedroom units with lockoffs.

The lower utilization rates used to signify the stabilized period were derived by adjusting the underlying components of the high utilization rates to account for the end of the sale period (end of "preview" use), lower transient use, and a correspondingly increase in use by owners.

Projections for the Timeshare sales period indicate that the visitor profile will be higher by about 50 parties (~528 total) and 40 persons (~1500 total). This projection assumed that sales of the MOC and Sequel would occur simultaneously, however, since the projects will overlap, the actual increase is expected to be less.

High and low utilization for the Hotel period was much simpler since there is only type of unit. High and low seasons for the two types of resorts differ considerably. The Hotel would experience pronounced annual (seasonal) periods of high and low use, typically between 70% and 90% occupancy, which is the basis for the high and low values shown for the Hotel in Table 1. As mentioned above, the Timeshare experiences its highest use during the sales period, and fluctuates to a much smaller degree annually.

Charts 1A and 1B were created to visually demonstrate the difference in occupancy and guest count between the Hotel and Timeshare resorts. Chart 1A shows actual occupancy of the Hotel during its last two years of operation (1998 & 1999). Timeshare occupancy is shown as two (constant) lines, one for the higher occupancy during sales, and the second to represent the stabilized period. While not shown, Timeshare fluctuations are normally within +/- 3%.

Chart 1B shows the comparative guest counts of the two resorts over time, showing that the timeshare guest count is anticipated to occur between the high and low guest counts experienced by seasonal use of the Hotel. Chart 1B incorporates the (typical party size) factors from Table 1.

Typical party size factors (*) were based upon MVCI industry data and experience, and data from the "ARDA" study (referenced in Appendix I). Maximum party size factors were provided by MVCI.

This table was included in the Draft EIS. It describes the characteristics of Design Option 3, which was the preferred design option in the Draft EIS.

The Final EIS provides a new preferred option, Design Option 5, which is described in the preceding tables. This table is no longer valid, however it is included to distinguish changes from the Draft EIS.

Table 1
Maui Ocean Club
Maximum Visitor Populations
12/10/2002

		"Maui Marriott" Hotel Period 1979-2000	"Maui Ocean Club" Hotel->Timeshare Conversion Now 2002	Completion 2005	"Segue" Timeshare Addition 2005-2008	Total Combined Timeshare 2008	% Change 2000-2008
Unit Configuration							
Hotel Rooms		720	391				
1-Bedroom Suites			115	178		178	
2-Bedroom Suite w/ lockout			39	134	126	260	
3-Bedroom Suites w/ lockout					20	20	
Total Units		720	545	312	146	458	-36%
Total Keys		720	584	446	292	738	3%
Estimated Max Unique Parties	**share of unit type**						
Hotel Room	100%	720	391				
1-Bedroom Suite	100%		115	178		178	
2-Bedroom Suite (entire)	80%		31	107	101	208	
2-Bedroom Suite (lockout)	20%		8	27	25	52	
2-Bedroom Suite (remnant 1bdrm)	20%		8	27	25	52	
3-Bedroom Suite (entire)	80%				16	16	
3-Bedroom Suite (lockout)	20%				4	4	
3-Bedroom Suite (remnant 2bdrm)	20%				4	4	
Total Parties		720	553	339	175	514	-29%
Estimated Maximum Persons	**guests/unit-type****						
Hotel Room	2.5	1800	978				
1-Bedroom Suite	2.7		311	481		481	
2-Bedroom Suite (entire)	3.7		115	397	373	770	
2-Bedroom Suite (lockout)	2.5		20	67	63	130	
2-Bedroom Suite (remnant 1bdrm)	2.7		21	72	68	140	
3-Bedroom Suite (entire)	4.7				75	75	
3-Bedroom Suite (lockout)	2.5				10	10	
3-Bedroom Suite (remnant 2bdrm)	3.7				15	15	
Total Persons		1800	1444	1017	604	1621	-10%

* Calculations assume 100% occupancy, 20% lockout use
**Based on ARDA study (kpmg, 2000) and Marriott experience. (Referenced in Appendix I)

Table 2
Maui Ocean Club
H-2 Hotel Zoning Restrictions
12/10/2002

	"Maui Ocean Club"		"MOC + Sequel"			
	Existing 2002		*Proposed 2008-on*			
	sf	%lot	sf	%lot	%change	Permitted by Zoning
Lot Size	696,183		696,183			
Lot Coverage	191,673	28%	196,116	28%	2%	35%
Floor Area	636,740	91%	907,742	130%	43%	150%
Impervious Surface	431,633	62%	375,387	54%	-13%	N/A

<u>[7/7/03] NOTE: The calculations above and in Tables 3 & 4 were calculated for Design Option 3. Design Option 5 will result in slightly less Lot Coverage and Impervious Surfaces due to the reduced footprint of the Napili Building in that Option 5 and slightly less Floor Area due to fewer in units in Option 5.</u>

Table 3
Maui Ocean Club
Floor Area Calculations
12/10/2002

Floor Area (existing)

Court	116,505	
Lobby	63,704	
2	78,478	
3	76,982	
4	49,384	
5	48,128	
6	48,128	
7	48,128	
8	48,128	
9	48,252	
Main Building	625,797	625,797
KauKau		3,959
Fitness Center		4,224
Pool Bar		630
Beach Services		1,672
Towel Hut		150
Luau Dressing		308
Current Total Floor Area		636,740

Floor Area (new)

Court (w/o ballroom)	90,303	
Lobby	63,704	
2	78,478	
3	76,982	
4	49,384	
5	48,128	
6	48,128	
7	48,128	
8	48,128	
9	48,252	
Main Building	599,595	599,595
KauKau		3,959
Fitness Center		4,224
Pool Bar		630
Beach Services		1,672
Towel Hut		150
Napili Ground	19,778	
2	18,945	
3	18,945	
4	18,945	
5	18,945	
6	18,945	
7	18,945	
8	18,945	
9	18,945	
10	18,945	
	190,283	190,283
Lahaina Ground	10,986	
2	10,127	
3	10,127	
4	10,127	
5	10,127	
6	10,127	
7	10,127	
8	10,127	
9	10,127	
10	10,127	
	102,129	102,129
Napili Pool Bar		100
New Total Floor Area		902,742

Table 4
Maui Ocean Club
Lot Coverage Calculations
12/10/2002

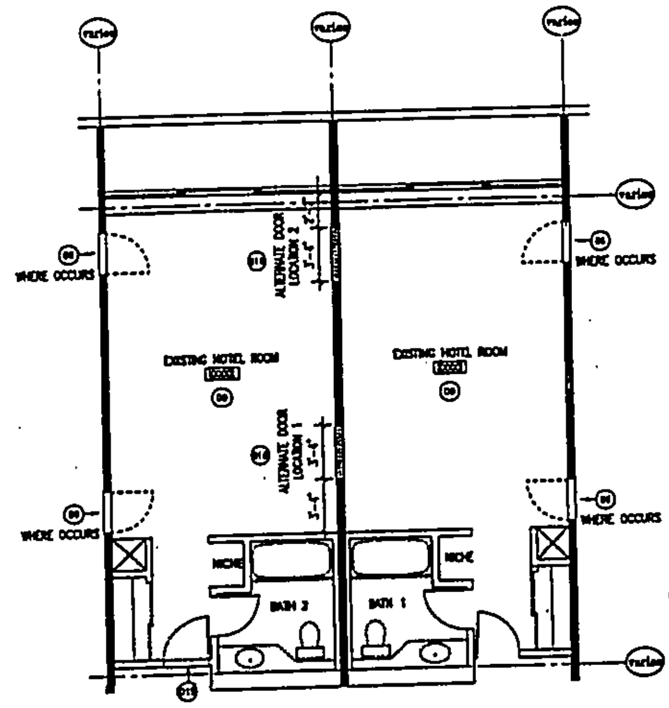
Lot Coverage (existing)

Main Building	143,427
Parking Structure	37,303
KauKau	3,959
Fitness Center	4,224
Pool Bar	630
Beach Services	1,672
Towel Hut	150
Luau Dressing	308
Current Lot Coverage	191,673

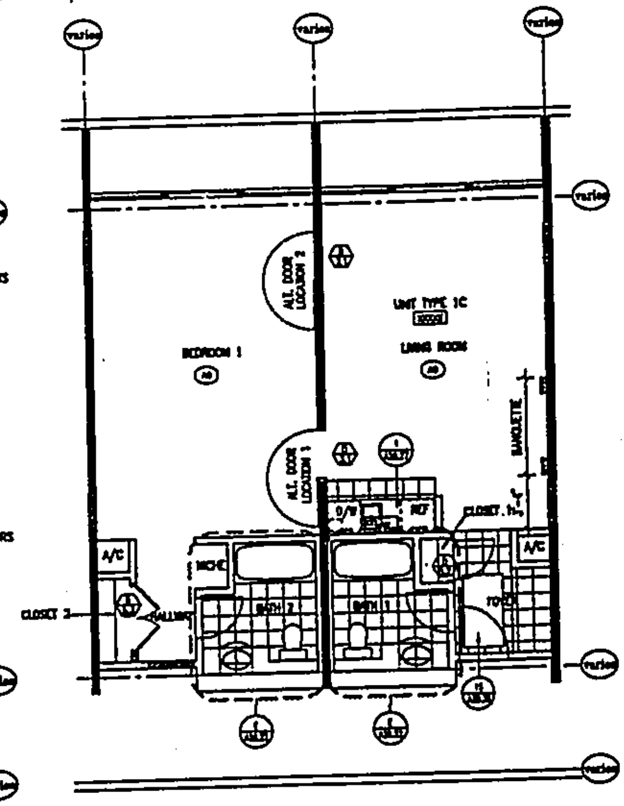
Lot Coverage (new)

Main Building (w/o ballroom)	117,368
Napili Tower	19,778
Napili Parking	15,051
Lahaina Tower	10,986
Lahaina Parking	26,422
KauKau	3,959
Pool Bar	630
Beach Services	1,672
Towel Hut	150
Napili Pool Bar	100
New Lot Coverage	196,116

APPENDIX A
Construction Details for the 2000 Marriott Hotel/Maui Ocean Club Conversion

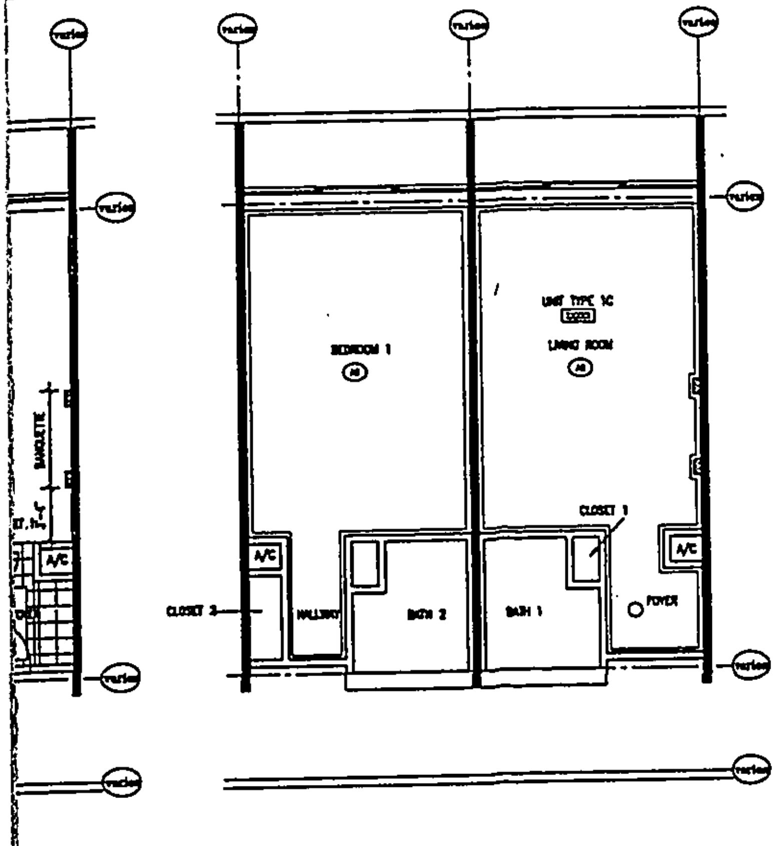


(A) UNIT 1C DEMOLITION PLAN
1/4" = 1'-0"



(B) UNIT 1C FLOOR PLAN
1/4" = 1'-0"

(C)



(C) UNIT 1C REFLECTED CEILING PLAN
1/4" = 1'-0"

DEMOLITION KEYNOTES

- (90) EXECUTE INDICATED WORK IN ADDITION TO TYPICAL DEMOLITION DESCRIBED ON SHEET A20.21.
- (96) REMOVE EXISTING CONNECTING DOORS, FRAME, AND THRESHOLD IN LOCATIONS INDICATED IN OVERALL FLOOR PLANS. PREPARE OPENING FOR INFILL.
- (98) REMOVE EXISTING ENTRY DOOR, FRAME, AND THRESHOLD. PREPARE OPENING FOR INFILL.
- (99) CUT ONE NEW OPENING IN CONCRETE WALL IN LOCATION AS INDICATED IN OVERALL FLOOR PLANS. DIMENSION SHOWN IS NOMINAL. SEE S3-1 FOR DETAIL OF NEW DOOR OPENING IN CONC WALL.

ARCHITECTURAL NOTES

- (A0) EXECUTE INDICATED WORK IN ADDITION TO TYPICAL WORK DESCRIBED ON SHEET A20.21.

LEGEND

- EXISTING CONCRETE WALL
- CONCRETE FOR DEMOLITION
- ITEMS FOR DEMOLITION
- EXISTING STUD WALL
- NEW STUD WALL (FINISHES VARY)
- NEW GYPSUM BOARD CEILING

UNIT NOTES

1. UNIT 1C IS A ONE BEDROOM UNIT COMPOSED OF TWO FORMER HOTEL ROOMS ARRANGED WITH BACK-TO-BACK BATHROOMS. THESE UNITS FACE THE OCEAN AND HAVE A TYPICAL OVERALL UNIT LENGTH OF 31 FEET, LANAI DEPTHS VARY. UNIT 1C DIFFERS FROM UNITS 1A AND 1B IN THAT THE MAIN VERTICAL CHASE IS IN THE WALL BEHIND THE LAVATORY, THE WATER CLOSET IS ON THE ON THE CORRIDOR WALL, AND EXISTING BATHS HAVE A "BANJO" TYPE COUNTERTOP. THE CORRIDOR SIDE CHASE CAUSES A SMALLER NICHE.

UNIT LOCATIONS

UNIT 1C

2033	3033	5009	8009	4110
2034	3034	5010	8010	4111
2035	3035	6009	9010	
2036	3036	6010		
2037	3037	7009		
2039	3039	7010		
2040	3040			

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REVISIONS

No./Date	Description
3/24/00	[illegible] NEW SHEET
7/17/00	TIMESHARE VALUE ENG.
1/19/01	TIMESHARE UPDATE
4/18/02	LANAI WING UNIT MIX
8/23/02	MAUI WING UNIT MIX CHANGE

PROJECT TITLE

MAUI OCEAN CLUB

MAUI WING
TIMESHARE
UNIT CONVERSION

FILENAME: type1c

DRAWING TITLE

UNIT TYPE 1C
DEMOLITION PLAN,
FLOOR PLAN,
REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

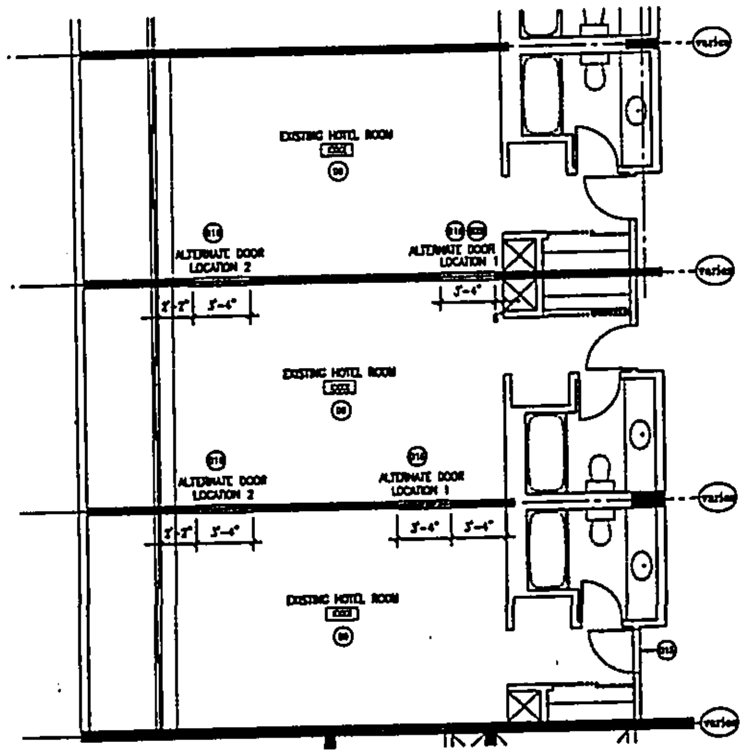
DRAWN BY: | CHECKED BY:

PROJECT NO. 99031-001

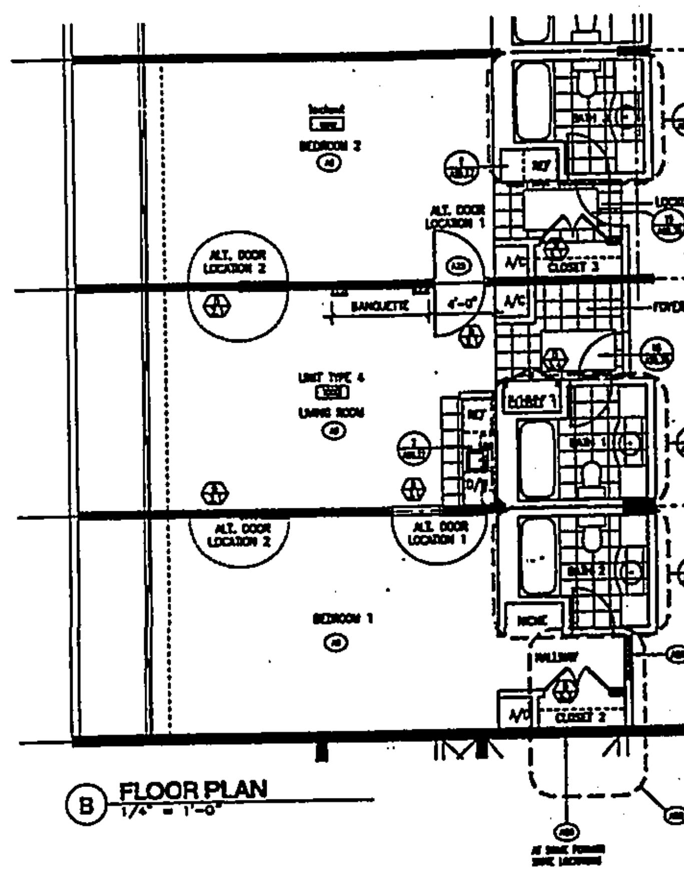
DATE: 19 APR 02

DRAWING NO. A20.32

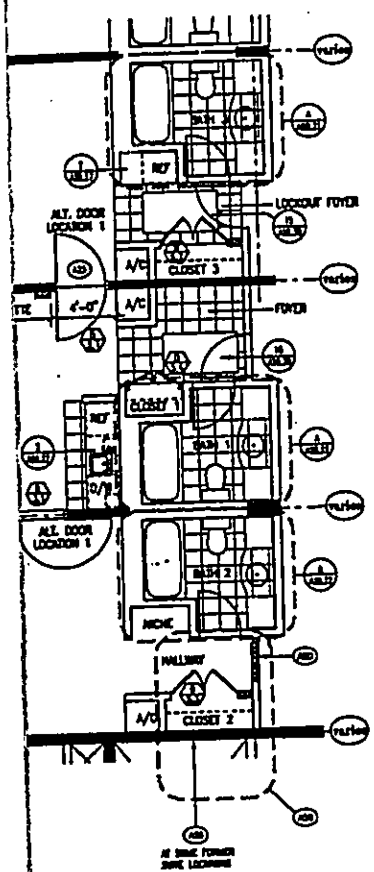
4:3 PM 12/2/02 type1c.dwg - s-frankm

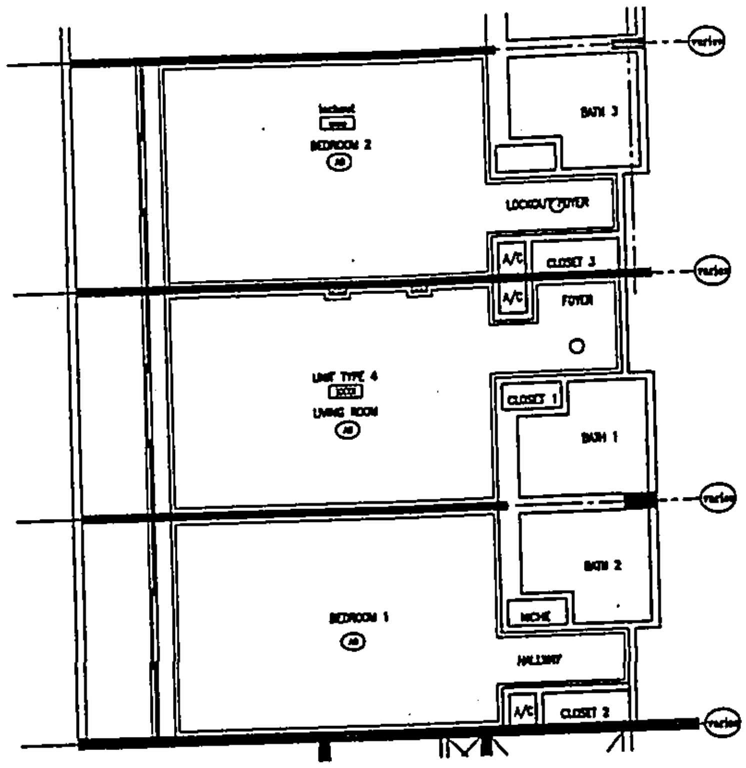


A DEMOLITION PLAN
1/4" = 1'-0"



B FLOOR PLAN
1/4" = 1'-0"





(C) REFLECTED CEILING PLAN
1/4" = 1'-0"

DEMOLITION KEYNOTES

- EXECUTE INDICATED WORK IN ADDITION TO TYPICAL DEMOLITION DESCRIBED ON SHEET A20.21.
- REMOVE EXISTING ENTRY DOOR, FRAME, AND THRESHOLD. PREPARE OPENING FOR INFILL.
- CUT ONE NEW OPENING IN CONCRETE WALL IN LOCATION AS INDICATED IN OVERALL FLOOR PLANS. DIMENSION SHOWN IS NOMINAL. SEE S2-1 FOR DETAIL OF NEW DOOR OPENING IN CONC WALL.
- SOME CONNECTING DOORS EXIST IN THIS LOCATION. USE EXISTING DOOR.

ARCHITECTURAL NOTES

- EXECUTE INDICATED WORK IN ADDITION TO TYPICAL WORK DESCRIBED ON SHEET A20.21.
- PROVIDE WALL PATCH AT FORMER DOOR AND MATCH EXISTING CORRIDOR FINISH. SEE DETAIL 1/A20.25
- USE EXISTING CONNECTING DOOR IF IT EXISTS.
- CONFIGURATION OF CLOSET AND ENTRY VARIES IN SOME CONDITIONS.

LEGEND

- EXISTING CONCRETE WALL
- CONCRETE-FOR DEMOLITION
- ITEMS FOR DEMOLITION
- EXISTING STUD WALL
- NEW STUD WALL (FINISHES VARY)
- NEW GYPSUM BOARD CEILING

UNIT NOTES

1. UNIT 4A IS A TWO BEDROOM UNIT COMPOSED OF THREE FORMER HOTEL ROOMS. THESE UNITS FACE THE POOL AREA AND HAVE AN OVERALL UNIT LENGTH OF 31 FEET. LANAI DEPTHS VARY. 4A'S DIFFER FROM 4B'S IN THEIR LENGTH AND EXISTING ELECTRICAL OUTLETS

UNIT LOCATIONS

UNIT 4A

104	4004	2104	5100	7100	9100
1004	4007	2105	5104	7104	9104
1007	5001	2108	5105	7105	9105
2004	6001	3100	5108	7108	9108
2007	7001	3107	6100	8100	
3004	8001	4100	6104	8104	
3007	9001	4104	6105	8105	
		4105	6108	8108	

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REVISIONS

No./Date	Description
3/24/00	PHONE UPDATE PRICING
7/17/00	TIMESHARE VALUE ENG
1/19/01	TIMESHARE UPDATE
4/19/02	LANAI WING UNIT MIX

PROJECT TITLE

MAUI OCEAN CLUB

MAUI WING
TIMESHARE
UNIT CONVERSION

FILENAME: type4a

DRAWING TITLE

UNIT TYPE 4A
DEMOLITION PLAN,
FLOOR PLAN,
REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

DRAWN BY:

CHECKED BY:

PROJECT NO. 99031-001

DATE: 19 APR 02

DRAWING NO. A20.36

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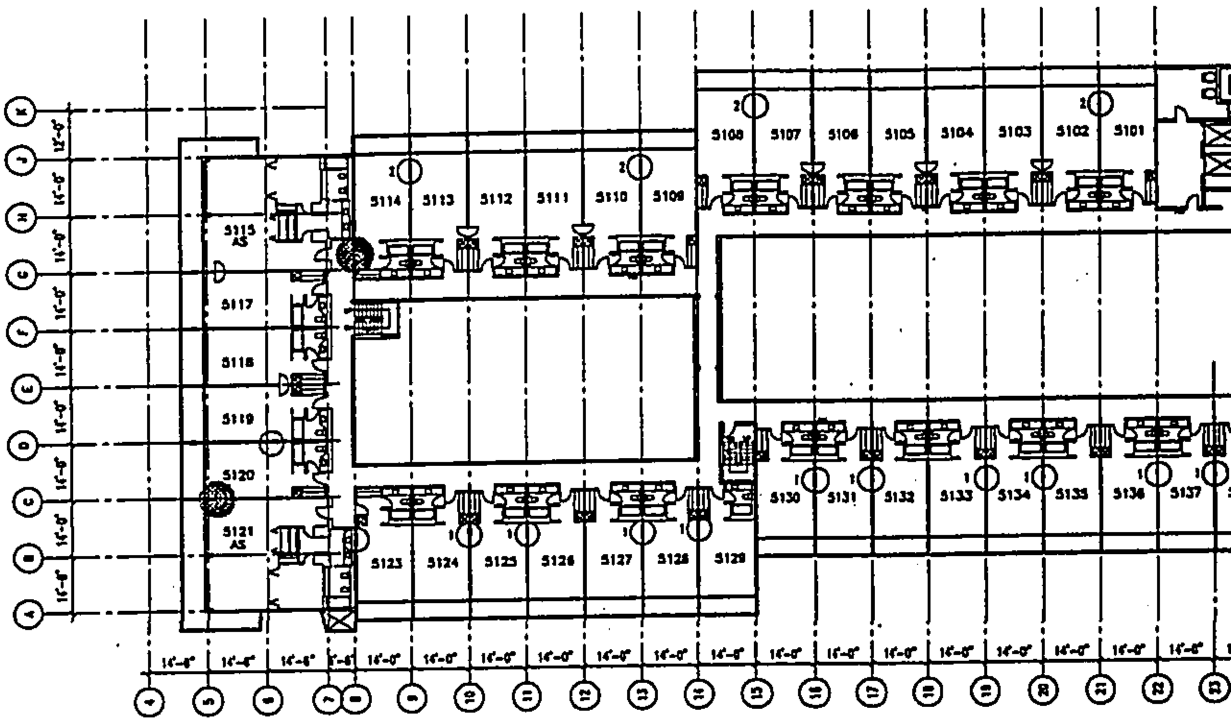


FIFTH FLOOR LANAI WING EXISTING CONDITIONS

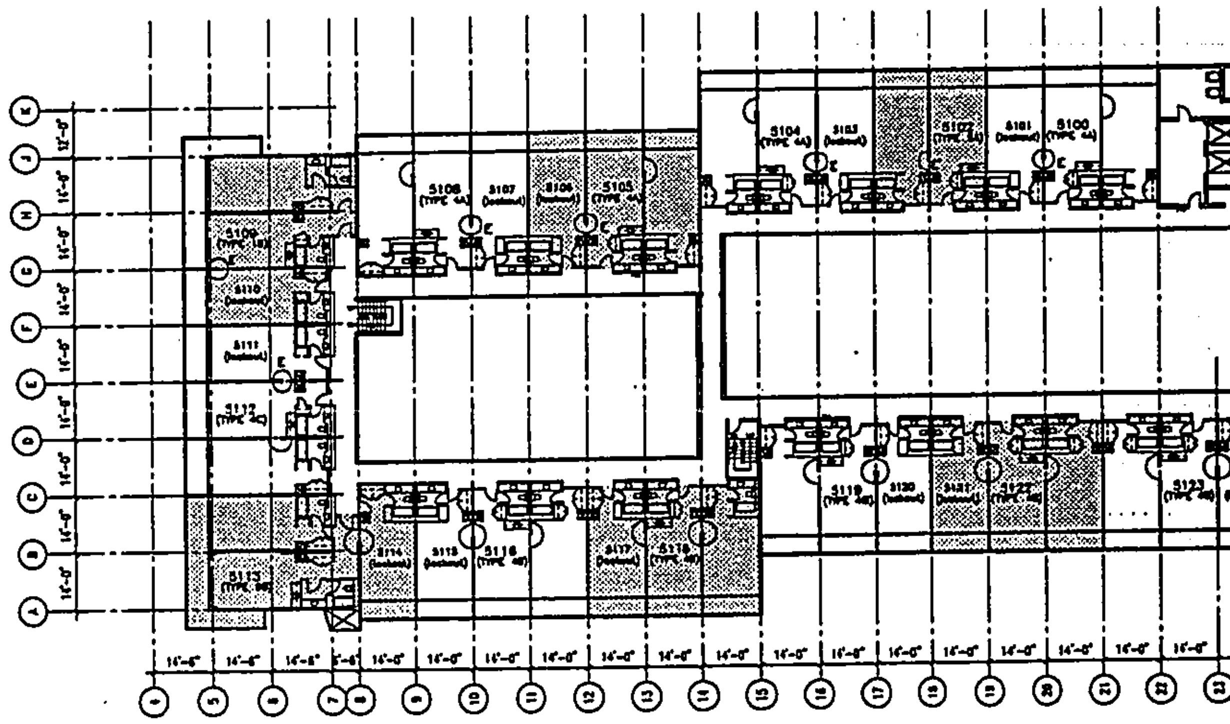
SCALE: 1/16" = 1' - 0"

UNIT NUMBERS ARE EXISTING HOTEL ROOM NUMBERS

1 — ALTERNATE LOCATION NUMBER AS DESCRIBED IN UNIT TYPE PLANS

PROVIDE NEW DOOR OPENING IN CONCRETE WALL AT SPECIFIED ALTERNATE LOCATION

FILL FORMER PASSDOOR OPENING. SEE DETAIL 5/A20.29



FIFTH FLOOR LANAI WING NEW CONFIGURATION

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

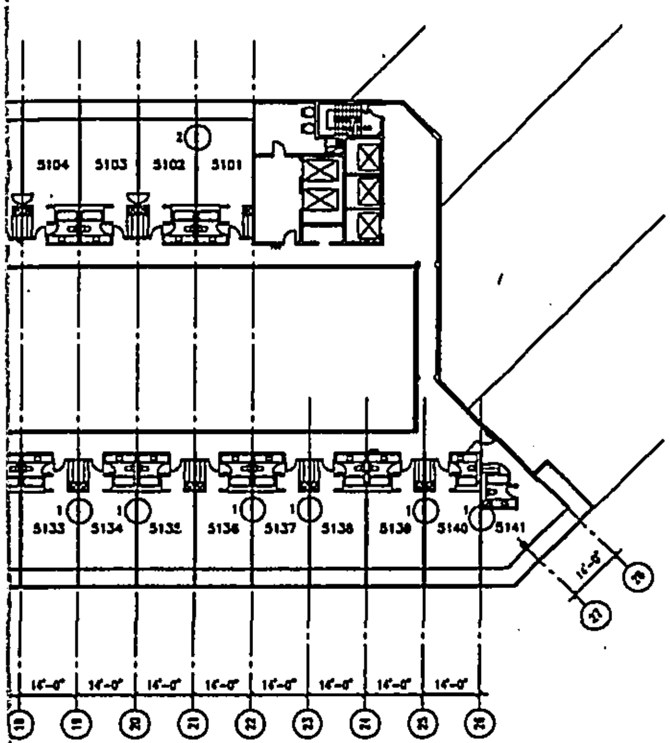
SHADING TO DISTINGUISH ADJACENT UNITS

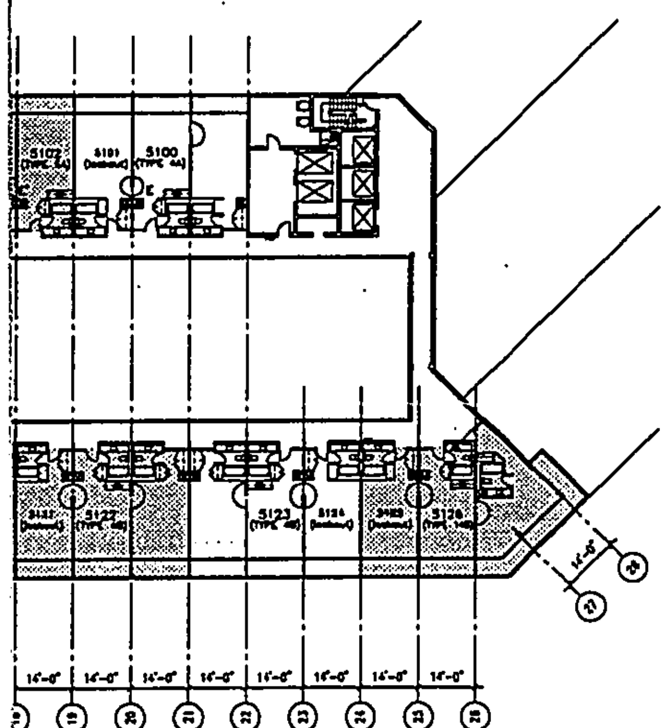
UNIT NUMBERS ARE IN THE LIVING ROOM OF EACH UNIT EXCEPT WHERE LOCKOUT UNITS OCCUR.

E. NEAR DOORWAY INDICATES EXISTING CONNECTING DOOR

E' FABRICATE NEW BEDROOM DOOR FROM ONE LEAF OF FORMER CONNECTING DOOR, REPLACE HARDWARE, AND REMOVE THRESHOLD.

SEE SHEETS A20.31 THROUGH A20.64 FOR UNIT TYPE PLANS



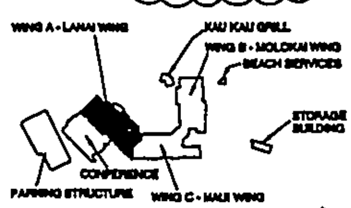


Delta 22 - REMOVED TUBS AT BATHROOM IN LIVING ROOM BAYS. ALL UNITS

Delta 34 - REPLACED TUBS AT BATHROOM IN LIVING ROOM BAYS. ALL UNITS. ADDITIONAL CLOUDS INDICATE CHANGES OTHER THAN TUB REPLACEMENT.

Delta 36 - CHANGED THE UNIT MIX IN THE LANAI WING TO INCLUDE MORE TWO BEDROOM UNITS.

Delta 36 - CHANGED THE UNIT MIX IN THE MAUI WING TO INCLUDE MORE TWO BEDROOM UNITS AND ELIMINATE STEEL REINFORCING IN THE UNITS OVER THE WELCOME CENTER



KEYPLAN

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REVISIONS

No./Date	Description
3/24/00	PHONE UPDATE PRINTING
7/17/00	TIMESHARE VALUE CHG.
1/19/01	TIMESHARE UPDATE
4/19/02	LANAI WING UNIT MIX
8/23/02	MAUI WING UNIT MIX CHANGE

PROJECT TITLE

MAUI OCEAN CLUB

MAUI WING
TIMESHARE
UNIT CONVERSION

FILENAME: 5-ooll

DRAWING TITLE

LANAI WING (A)
FIFTH FLOOR,
EXISTING AND NEW

SCALE: 1/32" = 1'-0"

DRAWN BY:

CHECKED BY:

PROJECT NO. 99031-001

DATE: 19 APR 02

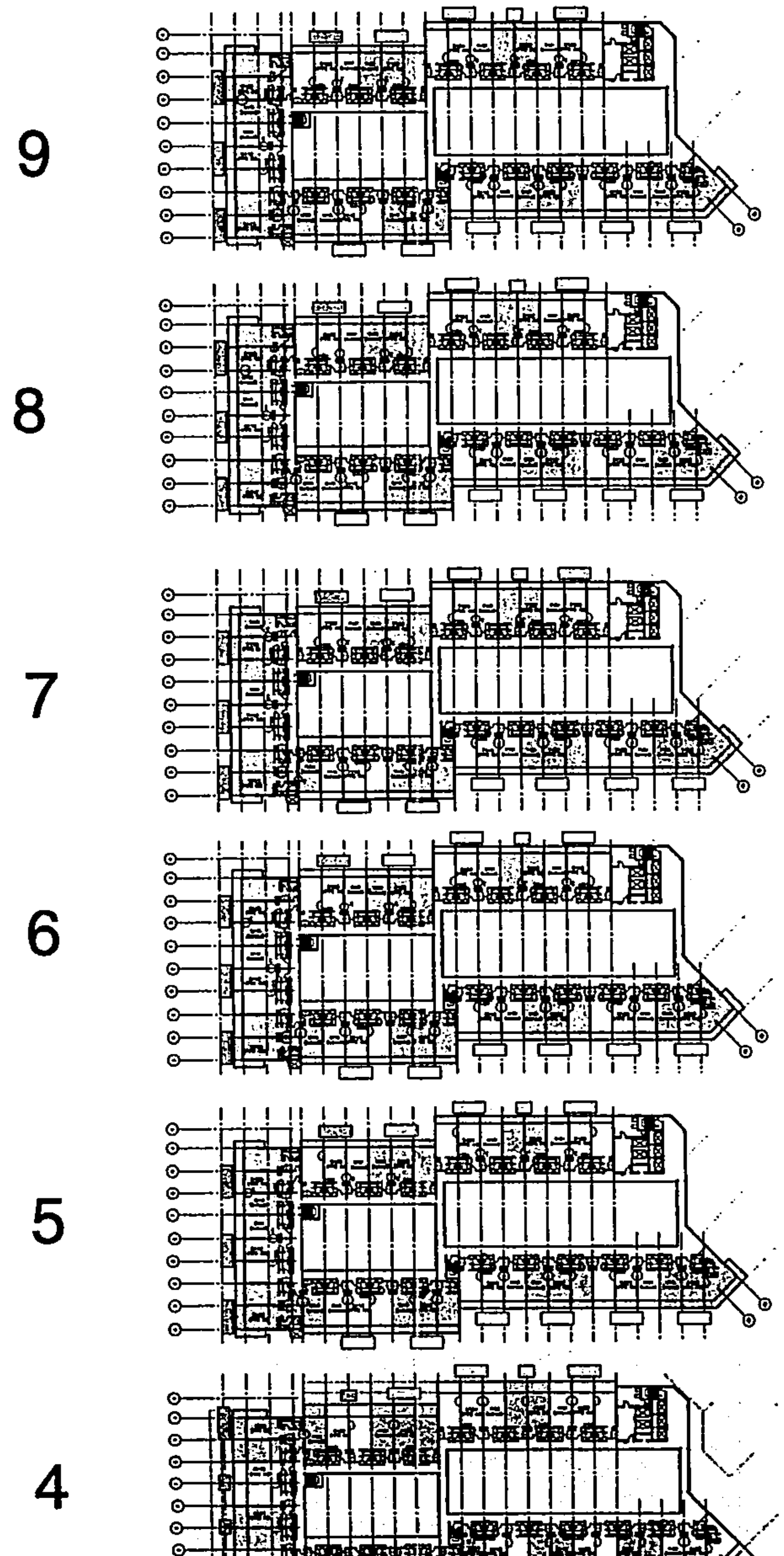
DRAWING NO. A20.14

4:31 PM 12/2/02 5-ooll.dwg - s-frankm

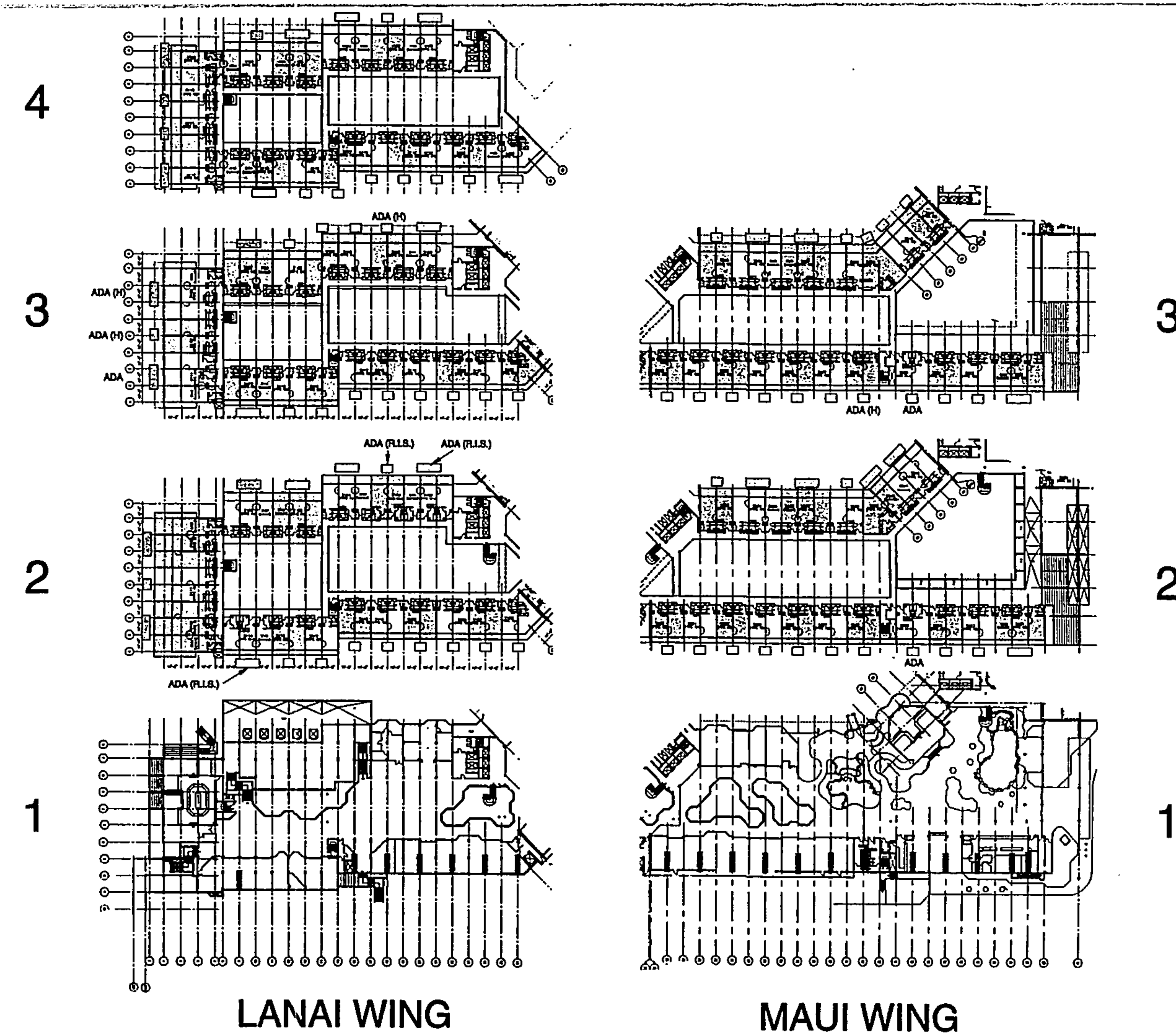
UNIT MIX -- 11 MAR 02

2BR 1BR
OCEANFRONT
OCEANVIEW
MOUNTAIN/GARDEN VIEW
~~LAHAINA VIEW~~ (all changed to mountain/garden view)

LOCATION OF INSTALLED STEEL REINFORCING (verify)

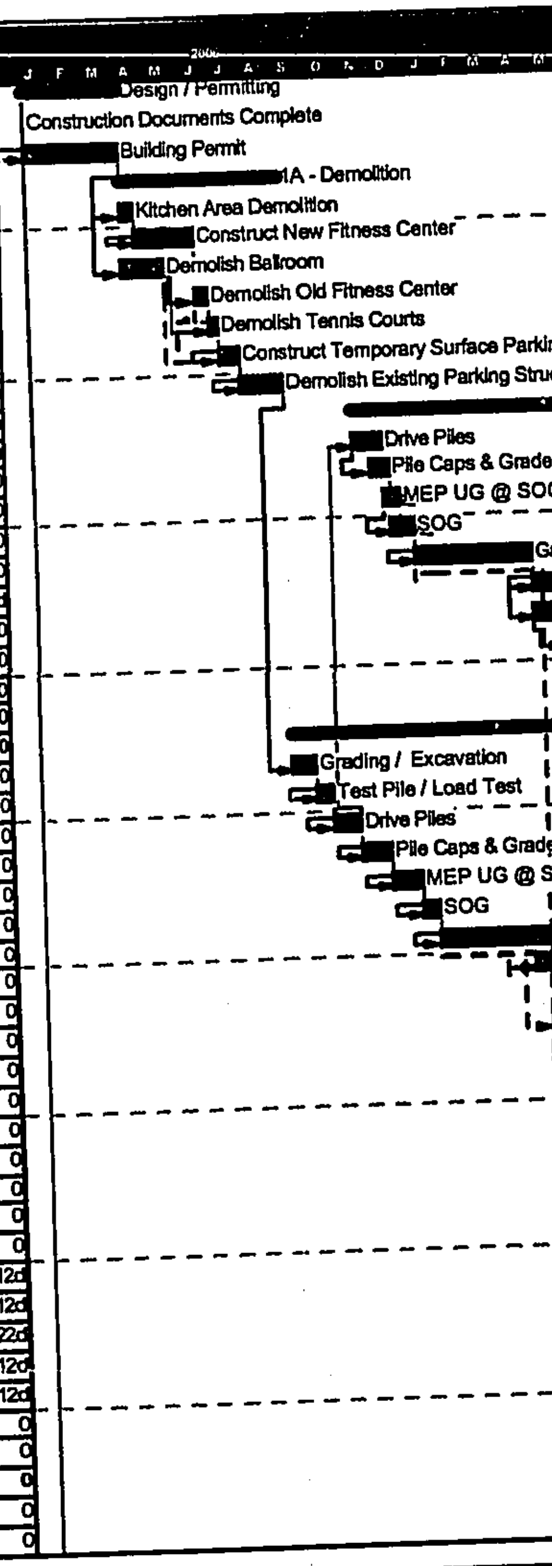


	TOTAL		MOLOKAI	LANAI	MAUI
1 BDRM Oceanfront	18		13	5	0
1 BDRM Oceanview	99		81	11	7
1 BDRM Gardenview	63		21	22	20
1 BDRM Lahainaview	0		0	0	0
1 BDRM total	180	57.88%	115	38	27
2 BDRM Oceanfront	48		20	28	0
2 BDRM Oceanview	44		16	22	6
2 BDRM Gardenview	39		3	34	2
2 BDRM total	131	42.12%	38	84	8
Total Units	311		154	122	35


4
3
2
1
ADA (H)
ADA (H)
ADA (H)
ADA
ADA (R.I.S.)
ADA (R.I.S.)
ADA (R.I.S.)
ADA (H)
ADA
ADA
LANAI WING
MAUI WING

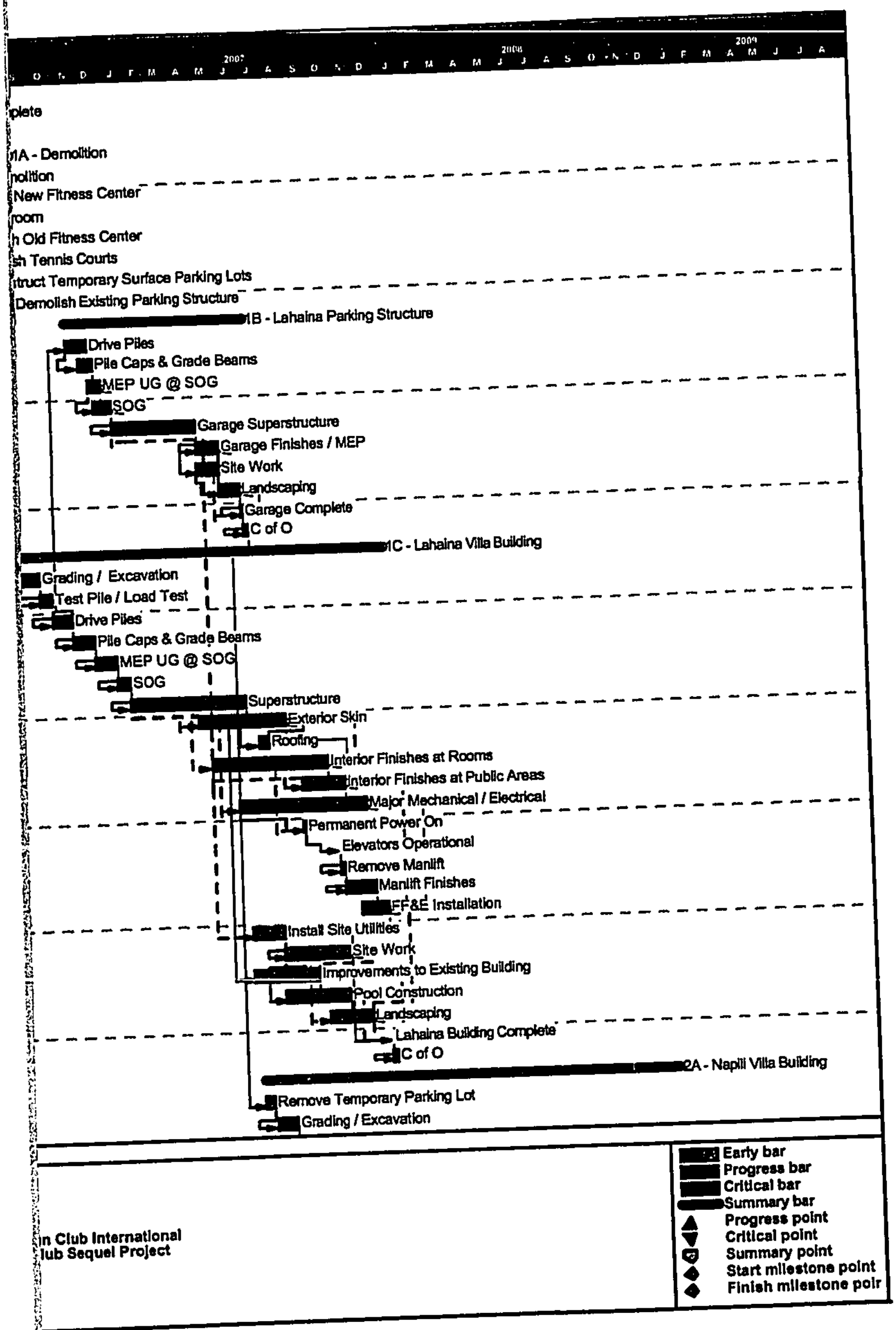
APPENDIX B
Draft Construction Schedule

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
0001	**Design / Permitting**	64 *	01/09/06	04/06/06	0
0002	Construction Documents Complete	1	01/09/06	01/09/06	0
0003	Building Permit	63	01/10/06	04/06/06	0
0004	**1A - Demolition**	110 *	04/07/06	09/07/06	0
0005	Kitchen Area Demolition	10	04/07/06	04/20/06	0
0006	Construct New Fitness Center	40	04/21/06	06/15/06	0
0007	Demolish Ballroom	30	04/07/06	05/18/06	35d
0008	Demolish Old Fitness Center	10	06/16/06	06/29/06	5d
0009	Demolish Tennis Courts	5	06/30/06	07/06/06	0
0010	Construct Temporary Surface Parking Lots	15	07/07/06	07/27/06	0
0011	Demolish Existing Parking Structure	30	07/28/06	09/07/06	0
0012	**1B - Lahaina Parking Structure**	166 *	11/10/06	06/29/07	0
0014	Drive Piles	20	11/10/06	12/07/06	0
0015	Pile Caps & Grade Beams	15	11/24/06	12/14/06	0
0016	MEP UG @ SOG	10	12/08/06	12/21/06	0
0017	SOG	15	12/15/06	01/04/07	0
0018	Garage Superstructure	80	01/05/07	04/26/07	0
0019	Garage Finishes / MEP	20	04/27/07	05/24/07	20d
0020	Site Work	20	04/27/07	05/24/07	0
0021	Landscaping	20	05/25/07	06/21/07	0
0022	Garage Complete	1	06/22/07	06/22/07	0
0023	C of O	5	06/25/07	06/29/07	0
0024	**1C - Lahaina Villa Building**	338 *	09/08/06	12/25/07	0
0025	Grading / Excavation	15	09/08/06	09/28/06	0
0026	Test Pile / Load Test	10	09/29/06	10/12/06	0
0027	Drive Piles	20	10/13/06	11/09/06	0
0028	Pile Caps & Grade Beams	20	11/10/06	12/07/06	0
0029	MEP UG @ SOG	20	12/08/06	01/04/07	0
0030	SOG	10	01/05/07	01/18/07	0
0031	Superstructure	110	01/19/07	06/21/07	0
0032	Exterior Skin	80	04/20/07	08/09/07	0
0033	Roofing	10	07/06/07	07/19/07	0
0034	Interior Finishes at Rooms	110	05/04/07	10/04/07	0
0035	Interior Finishes at Public Areas	40	08/31/07	10/25/07	0
0036	Major Mechanical / Electrical	120	06/08/07	11/22/07	0
0037	Permanent Power On	1	08/31/07	08/31/07	0
0038	Elevators Operational	1	10/15/07	10/15/07	0
0039	Remove Manlift	5	10/16/07	10/22/07	0
0040	Manlift Finishes	30	10/23/07	12/03/07	0
0041	FF&E Installation	25	11/13/07	12/17/07	0
0042	Install Site Utilities	30	06/22/07	08/02/07	12d
0043	Site Work	60	08/03/07	10/25/07	12d
0044	Improvements to Existing Building	60	06/22/07	09/13/07	22d
0045	Pool Construction	60	08/03/07	10/25/07	12d
0046	Landscaping	40	09/28/07	11/22/07	12d
0047	Lahaina Building Complete	1	12/18/07	12/18/07	0
0048	C of O	5	12/19/07	12/25/07	0
0049	**2A - Napili Villa Building**	391 *	07/02/07	12/29/08	0
0050	Remove Temporary Parking Lot	10	07/02/07	07/13/07	0
0051	Grading / Excavation	20	07/16/07	08/10/07	0



Project title	**Maui Ocean Club Seque**
Start date	**01/03/05 8:00AM**
Finish date	**12/30/08 4:59PM**
Data date	**01/09/06 8:00AM**
Run date	**07/01/03 4:00PM**
Page number	**1A**

Marriott Vacation Club International
Maui Ocean Club Sequel Project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plete
1A - Demolition
nolition
New Fitness Center
room
h Old Fitness Center
sh Tennis Courts
truct Temporary Surface Parking Lots
Demolish Existing Parking Structure
1B - Lahaina Parking Structure
Drive Piles
Pile Caps & Grade Beams
MEP UG @ SOG
SOG
Garage Superstructure
Garage Finishes / MEP
Site Work
Landscaping
Garage Complete
C of O
1C - Lahaina Villa Building
Grading / Excavation
Test Pile / Load Test
Drive Piles
Pile Caps & Grade Beams
MEP UG @ SOG
SOG
Superstructure
Exterior Skin
Roofing
Interior Finishes at Rooms
Interior Finishes at Public Areas
Major Mechanical / Electrical
Permanent Power On
Elevators Operational
Remove Manlift
Manlift Finishes
FF&E Installation
Install Site Utilities
Site Work
Improvements to Existing Building
Pool Construction
Landscaping
Lahaina Building Complete
C of O
2A - Napili Villa Building
Remove Temporary Parking Lot
Grading / Excavation
Early bar
Progress bar
Critical bar
Summary bar
Progress point
Critical point
Summary point
Start milestone point
Finish milestone poir
n Club International
lub Sequel Project

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
0052	Test Pile / Load Test	10	08/13/07	08/24/07	0
0053	Drive Piles	40	08/27/07	10/19/07	0
0054	Pile Caps & Grade Beams	20	10/22/07	11/16/07	0
0055	MEP UG @ SOG	20	11/19/07	12/14/07	0
0056	SOG	15	12/17/07	01/04/08	0
0057	Superstructure	126	01/07/08	06/30/08	0
0058	Exterior Skin	80	04/22/08	08/11/08	0
0059	Roofing	20	07/01/08	07/28/08	0
0060	Interior Finishes at Rooms	120	05/06/08	10/20/08	0
0061	Interior Finishes at Public Areas	40	09/16/08	11/10/08	0
0062	Major Mechanical / Electrical	148	05/15/08	12/08/08	0
0063	Permanent Power On	1	09/04/08	09/04/08	0
0064	Elevators Operational	1	10/16/08	10/16/08	0
0065	Remove Manlift	5	10/17/08	10/23/08	8d
0066	Manlift Finishes	32	10/24/08	12/08/08	8d
0067	FF&E	50	10/17/08	12/25/08	0
0068	Install Site Utilities	30	04/28/08	06/06/08	44d
0069	Site Work	60	06/09/08	08/29/08	44d
0070	*Pool / Pool Bar*	60	07/07/08	09/26/08	44d
0071	Landscaping	40	09/01/08	10/24/08	44d
0072	Napili Building Complete	1	12/26/08	12/26/08	0
0073	C of O	1	12/29/08	12/29/08	0
0074	**2B - Napili Parking Structure**	**147 ***	**06/06/08**	**12/29/08**	**0**
0076	Foundations	20	06/06/08	07/03/08	0
0077	MEP UG @ SOG	10	06/27/08	07/10/08	0
0078	SOG	15	07/11/08	07/31/08	0
0079	Superstructure	50	08/01/08	10/09/08	0
0080	Garage Finishes / MEP	30	10/10/08	11/20/08	25d
0081	Install Site Utilities	20	10/10/08	11/06/08	0
0082	Sitework	20	11/07/08	12/04/08	0
0083	Landscaping	20	11/28/08	12/25/08	0
0084	Garage Complete	1	12/26/08	12/26/08	0
0085	C of O	1	12/29/08	12/29/08	0
0095	**Project Complete**	1	12/30/08	12/30/08	0

Project title	Maui Ocean Club Seque
Start date	01/03/05 8:00AM
Finish date	12/30/08 4:59PM
Data date	01/09/06 8:00AM
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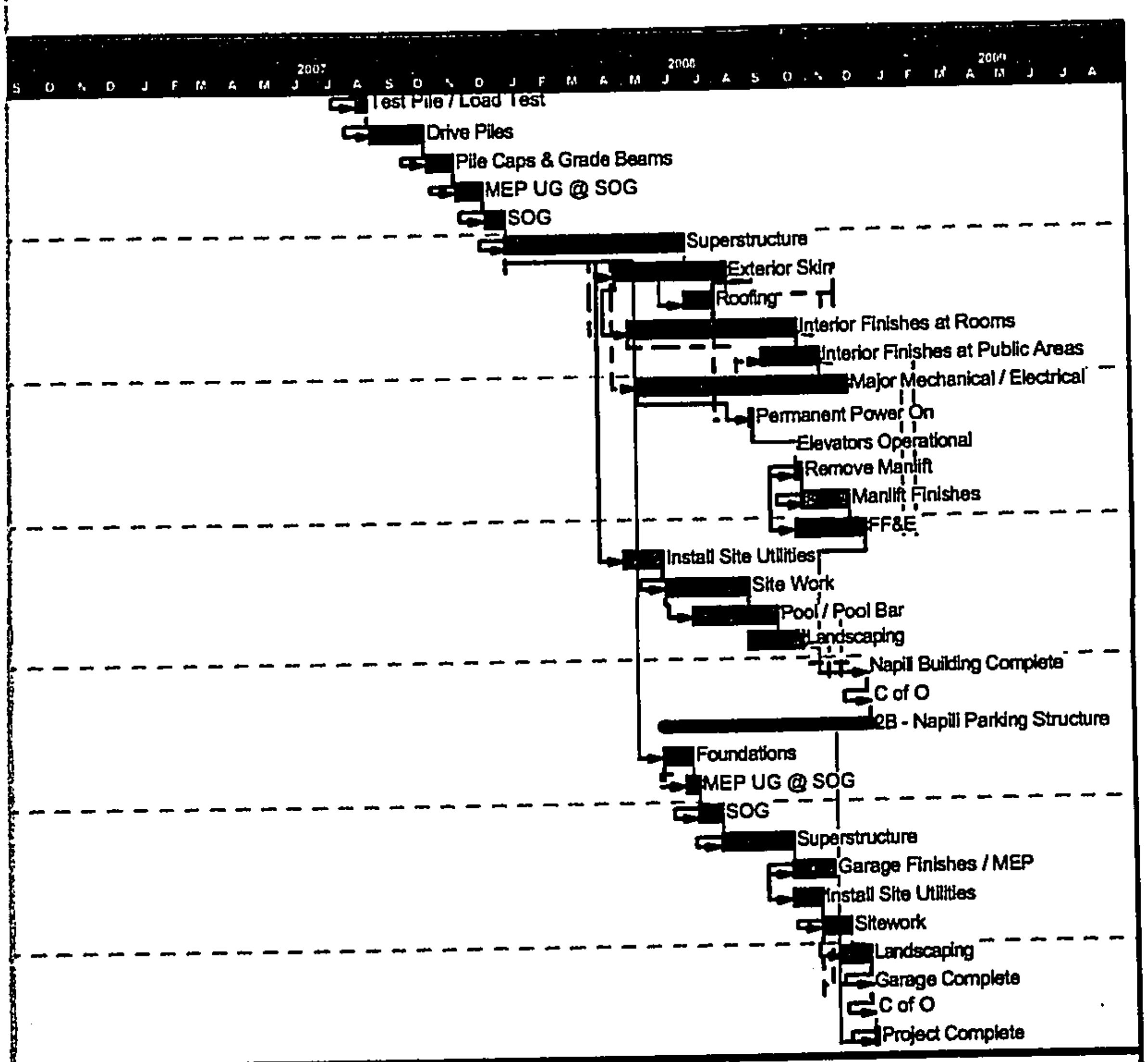

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Early bar
Progress bar
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Summary bar
Progress point
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APPENDIX C
Environmental Noise Impact Assessment <u>&</u> <u>Supplement</u>

D. L. ADAMS ASSOCIATES, LTD.
ACOUSTICAL CONSULTANTS

Project No. 02-46

ENVIRONMENTAL NOISE IMPACT ASSESSMENT
MAUI MARRIOTT HOTEL
KA'ANAPALI BEACH, MAUI, HAWAII

October 2002

Prepared for
Marriott Vacation Club International
Kapolei, Hawaii

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CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 The proposed Maui Marriott development involves construction of two new timeshare unit buildings for vacation ownership on each side of the existing hotel complex, parking structures, site amenities, landscaping, and demolition of some existing facilities.

1.2 The project area and vicinity are currently exposed to daytime ambient noise levels of 43 to 69 dBA, with the dominant noise sources being traffic on Nohea Kai Drive and Ka'anapali Parkway. Other noise sources include wind, birds, and ocean surf.

1.3 Traffic noise levels, due to the project, should not significantly increase along the existing roadways in the vicinity of the project.

1.4 The dominant noise sources during project construction will probably pile driving equipment. Pile driving activities will occur over a period of 6 to 8 weeks and must comply with State DOH noise regulations. Noise from construction activities will occur on the subject property. Noise from other construction activities should be short term and must also comply with State noise regulations.

1.5 Predicted traffic noise level increases due to the project for the year 2007 along local roadways in the vicinity of the completed project were determined to be less than 0.1 dB, which is below the threshold of perceptible change in noise level for most people and not considered significant.

2.0 PROJECT DESCRIPTION

The Maui Marriott project site is a 15.9-acre ocean front parcel located within the 1,200-acre Ka'anapali Beach Resort, a planned resort community located about three miles north of Lahaina on the west coast of the island of Maui, as shown on Figure 1. The proposed development involves demolition of various existing facilities and constructing two new 10-story timeshare unit towers for vacation ownership on both sides of the existing hotel complex. The existing conditions are shown on Figure 2 and the proposed development is detailed on Figure 3. The north side development includes a 96 timeshare unit tower, identified as the Napili Building, a one and a half story parking structure, swimming pool, spas, decks, pool bar, and landscaping. The south side development includes a 50 timeshare unit tower, identified as the Lahaina Building, a five story parking structure, swimming pool, spa, deck, tennis courts, and landscaping. Both the north and south developments will include a 132' shoreline setback landscaped with open lawn and coconut trees.

3.0 NOISE STANDARDS

Various local and federal agencies have established guidelines and standards for assessing environmental noise impacts and set noise limits as a function of land use. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

3.1 U.S. Federal Highway Administration (FHWA)

The FHWA defines four land use categories and assigns corresponding maximum hourly equivalent sound levels, L_{eq}, for traffic noise exposure [Reference 1], which are listed in Table 1. For example, Category B, defined as picnic and recreation areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals, has a corresponding maximum exterior L_{eq} of 67dBA and a maximum interior L_{eq} of 52 dBA. These limits are viewed as design goals, and all projects meeting these limits are deemed in conformance with FHWA noise standards.

3.2 Hawaii Department of Transportation (HDOT)

The HDOT has adopted FHWA's design goals for traffic noise exposure in its noise analysis and abatement policy [Reference 2]. According to the policy, a traffic noise impact occurs when the predicted traffic noise levels "approach" or exceed FHWA's design goals or when the predicted traffic noise levels "substantially exceed the existing noise levels." The policy also states that "approach" means at least 1 dB less than FHWA's design goals and "substantially exceed the existing noise levels" means an increase of at least 15 dB.

3.3 U.S. Environmental Protection Agency (EPA)

The U.S. EPA has identified a range of yearly day-night equivalent sound levels, L_{dn}, sufficient to protect public health and welfare from the effects of environmental noise [Reference 3]. The EPA has established a goal to reduce exterior environmental noise to an L_{dn} not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an L_{dn} not exceeding 55 dBA. Additionally, the EPA states that these goals are not intended as regulations as it has no authority to regulate noise levels, but rather they are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

3.4 State of Hawaii, Department of Health, Community Noise Control

The State of Hawaii Department of Health Community Noise Control Statute [Reference 4] defines three classes of zoning districts and specifies corresponding maximum permissible sound levels due to stationary noise sources such as air-conditioning units, exhaust systems, generators, compressors, pumps, etc., and equipment related to agricultural, construction, and industrial activities. These levels are enforced by the State Department of Health (DOH) for any location at or beyond the property line and shall not be exceeded for more than 10% of the time during any 20-minute period. The specified noise limits which apply are a function of the zoning and time of day as shown in Figure 4. With respect to mixed zoning districts, the statute specifies that the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level.

3.5 U.S. Department of Housing and Urban Development (HUD)

HUD's environmental noise criteria and standards in 24 CFR 52 [Reference 5] were established for determining housing project site acceptability. These standards are based on day-night equivalent sound levels, L_{dn}, and are not limited to traffic noise exposure. However, for project sites in the vicinity of highways, the L_{dn} may be estimated to be equal to the design hour $L_{eq(h)}$, provided "heavy trucks (vehicles with three or more axles) do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10:00 pm and 7:00 am does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours." For these same conditions, Ldn, may also be estimated as 3 dB less than the design hour L_{10}.

HUD site acceptability criteria rank sites as Acceptable, Normally Unacceptable, or Unacceptable. "Acceptable" sites are those where exterior noise levels do not exceed an L_{dn} of 65 dBA. Proposed housing projects on "Acceptable" sites do not require additional noise attenuation other than that provided by customary building techniques. "Normally Unacceptable" sites are those where the L_{dn} is above 65 dBA, but does not exceed 75 dBA. Housing on "Normally Acceptable" sites requires some form of noise abatement, either at the property line or in the building construction, to ensure the interior noise levels are acceptable. "Unacceptable" sites are those where the L_{dn} is 75 dBA or higher. The term "Unacceptable" does not necessarily mean that housing cannot be built on those sites. It means that more sophisticated sound attenuation will likely be needed.

4.0 EXISTING ACOUSTICAL ENVIRONMENT

Ambient noise level measurements were conducted on October 9 through October 10, 2002 to assess the existing acoustical environment at the project site and in the surrounding areas as illustrated in Figure 5. Noise level measurements were taken using Larson-Davis Laboratories Model 824 Sound Level Meter. The results, presented in Table 2, expressed in terms of equivalent sound levels, L_{eq}, and in units of A-weighted decibels, were obtained.

Presently, traffic is the dominant noise source at the measurement locations. Other noise sources include wind, birds, and ocean surf. Traffic volume and vehicle mix were also recorded during the measurements at Locations 1, 2, 8 and 9.

5.0 POTENTIAL NOISE IMPACT DUE TO THE PROJECT AND NOISE MITIGATION

5.1 Project Construction Noise

Development of project areas will involve excavation, grading, and construction of new buildings and infrastructure. The various construction phases of the project may generate significant amounts of noise. The Hyatt Regency Resort and Ka'anapali Ali'i Condominiums may be impacted by the project construction noise due to their close proximity, as shown on Figure 6. The actual noise levels produced during construction will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 7.

In cases where construction noise exceeds, or is expected to exceed the State's "maximum permissible" property line noise levels [Reference 4], a permit must be obtained from the DOH to allow the operation of vehicles, cranes, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible" levels. In the State of Hawaii, noise permits are required for construction projects. Specific permit restrictions for construction activities are:

> "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels . . . before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels . . . before 9:00 a.m. and after 6:00 p.m. on Saturday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

The use of pile drivers, hoe rams, jack hammers 25 lbs. or larger, high pressure sprayers, and chain saws may be restricted to 9:00 a.m. to 5:30 p.m., Monday through Friday. The State DOH requires additional information when pile drivers or hoe rams are used. This additional information includes the number of pile drivers and/or hoe rams to be used, the number of piles to be driven, duration of the pile driving or hoe ram operations, and the name and on-site telephone number of the person responsible for responding to noise complaints. Notification of the surrounding affected areas will be required. In addition, a public information meeting may be required to provide the surrounding community with information pertaining to the pile driving noise. This requirement is subject to the duration of such operations and the extent of the impact area. Pile driving may impact noise sensitive areas within approximately 8,900 feet or 1.7 miles of the pile driving activity. Pile driving activities will occur over a period of 6 to 8 weeks and must comply with State DOH noise regulations. Alternative foundation construction methods should be considered. These include pre-drilling holes for cement piles driven by a shrouded, pneumatic pile driver and drilling holes to utilize poured caissons. Typical sound levels for shrouded pneumatic pile drivers are between 90-100 dBA at a distance of 50 feet as compared to a range of 95-105 dBA for standard pile drivers.

5.2 Project Generated Traffic Noise

Measured traffic noise levels along with traffic volume and vehicle mix counts obtained during the measurements were used to calibrate the FHWA's Traffic Noise Prediction Model [Reference 6]. The noise model, together with the traffic data [Reference 7], was then used to calculate the peak hour traffic noise levels with and without the project. The results are presented in Table 3.

Predicted traffic noise level increases for the year 2007, with and without the project, were calculated and included in Table 3. As can be seen, the predicted maximum traffic noise level increase along the assessed roadways due to the project is 0.1dB, which is below the threshold of change in noise level that is perceptible to most people with normal hearing. The increase in traffic noise level due to project development is not considered significant and is not expected to adversely impact the project site or surrounding areas.

5.3 Noise Due to On-Site Equipment

Noise from pumps, AHU's, compressors, condensing units, and other on-site equipment must be addressed during the design phase of the project. Noise at the property line from on-site equipment must be at a level of 60 dBA or less during daytime hours and at a level of 50 dBA or less during nighttime hours in order to be within the State's maximum permissible sound limit. If on-site equipment exceeds this limit, mitigation in the form of barriers, enclosures, silencers, etc. should be included in the design.

6.0 EXISTING AND PROPOSED NORTH SIDE DEVELOPMENT COMPARISON

Impacts resulting from the proposed north side development of the subject property may affect both on-site facilities as well as the neighboring Ka'anapali Ali'i Condominiums, depending on the actual design of each potential noise element. These potential noise elements include mechanical equipment noise related to the proposed timeshare tower, traffic noise from vehicles entering and leaving the new one and a half story parking structure, noise from people entering and leaving the proposed timeshare tower, and noise originating from the new adult pool area. Compared to the existing ground level parking area, noise levels from the proposed parking structure may be equivalent or higher depending on the construction materials of the structure, e.g., a brushed or broomed concrete finish in lieu of smooth concrete ramps would help reduce tire squeal in the parking structure. Noise from the adult pool area should be roughly equivalent to the noise that emanates from the existing tennis area.

7.0 REFERENCES:

1.*Department of Transportation, Federal Highway Administration Procedures for Abatement of Highway Traffic Noise,* Title 23, CFR, Chapter 1, Subchapter J, Part 772, 38 FR 15953, June 19, 1973; Revised at 47 FR 29654, July 8, 1982.

2.*Noise Analysis and Abatement Policy,* Department of Transportation, Highways Division, State of Hawaii, June 1977.

3.*Toward a National Strategy for Noise Control,* U.S. Environmental Protection Agency, April 1977.

4.Chapter 46, *Community Noise Control,* Department of Health, State of Hawaii, Administrative Rules, Title 11, September 23, 1996.

5.*Department of Housing and Urban Development Environmental Criteria and Standards,* Title 24, CFR, Part 51, 44 FR 40860, July 12, 1979; Amended by 49 FR 880, January 6, 1984.

6.*Federal Highway Administration's Traffic Noise Model,* FHWA-RD-77-108; U.S. Department of Transportation, December 1978

7.Peak Hour Traffic Data, Phillip Rowell and Associates, October 17, 2002.

TABLE 1
Federal Highways Administration Recommended Equivalent Hourly Sound Levels Based On Land Use [Reference 1]

Activity Category	$L_{eq(h)}$	Noise Reduction Exterior-to-Interior
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped Land
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

TABLE 2
Measurement Locations and Equivalent Sound Levels

Measurement Location	Time of Measurement	Duration of Measurement	Equivalent Sound Level (L_{eq} in dBA)
1	4:11 PM	30 Minutes	61.4
2	4:47 PM	30 Minutes	68.8
3	1:05 AM	5 Minutes	43.3
4	1:11 AM	5 Minutes	52.9
5	1:21 AM	5 Minutes	45.5
6	1:28 AM	5 Minutes	58.1
7	1:34 AM	5 Minutes	55.1
8	7:14 AM	30 Minutes	67.2
9	7:55 AM	30 Minutes	60.4
10	10:48 AM	1 Minute	52.6
11	10:51 AM	1 Minute	56.5
12	10:58 AM	1 Minute	58.2
13	11:02 AM	1 Minute	53.9

TABLE 3
Peak Hour Traffic Noise Levels and Predicted Noise Level Increases
(L_{eq} in dBA)

MEASUREMENT LOCATION 2 AND 8 (61 ft from centerline of Kaanapali Pkwy)	Existing		Predicted Year 2007 Without Proposed Project		Predicted Year 2007 With Proposed Project	
	AM	PM	AM	PM	AM	PM
Peak Traffic Noise Level	66.9	69.6	67.7	70.2	67.8	70.2
Predicted Year 2007 Increase Above Existing	---	---	0.8	0.6	0.9	0.6
Predicted Year 2007 Increase Due to Project	---	---	---	---	0.1	0

MEASUREMENT LOCATION 1 AND 9 (28 ft from centerline of Nohea Kai Dr)	Existing		Predicted Year 2007 Without Proposed Project		Predicted Year 2007 With Proposed Project	
	AM	PM	AM	PM	AM	PM
Peak Traffic Noise Level	59.4	61.8	62.3	61.7	62.3	61.7
Predicted Year 2007 Increase Above Existing	---	---	2.9	0	2.9	0
Predicted Year 2007 Increase Due to Project	---	---	---	---	0	0

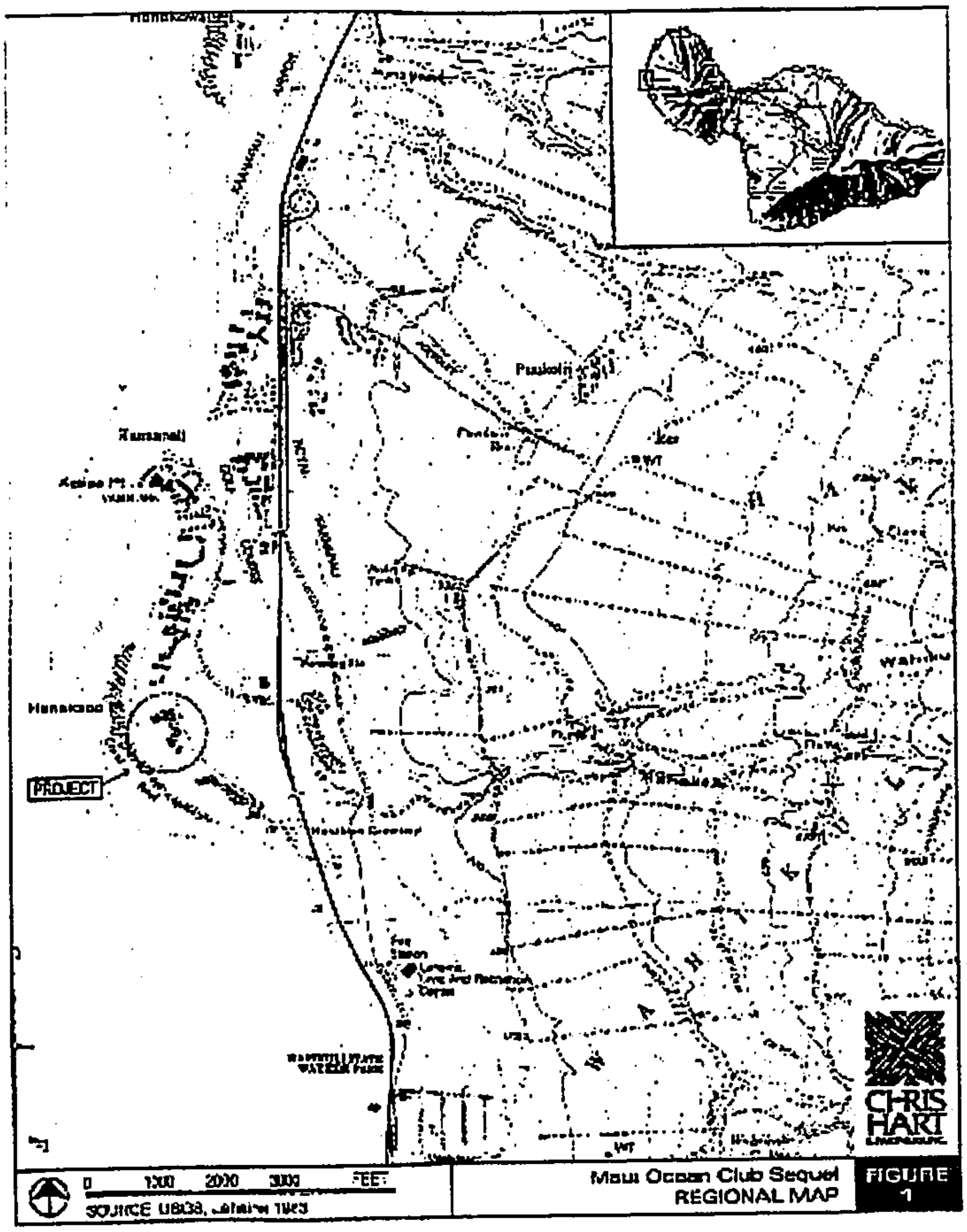

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FIGURE 1 - PROJECT LOCATION AND STUDY AREA

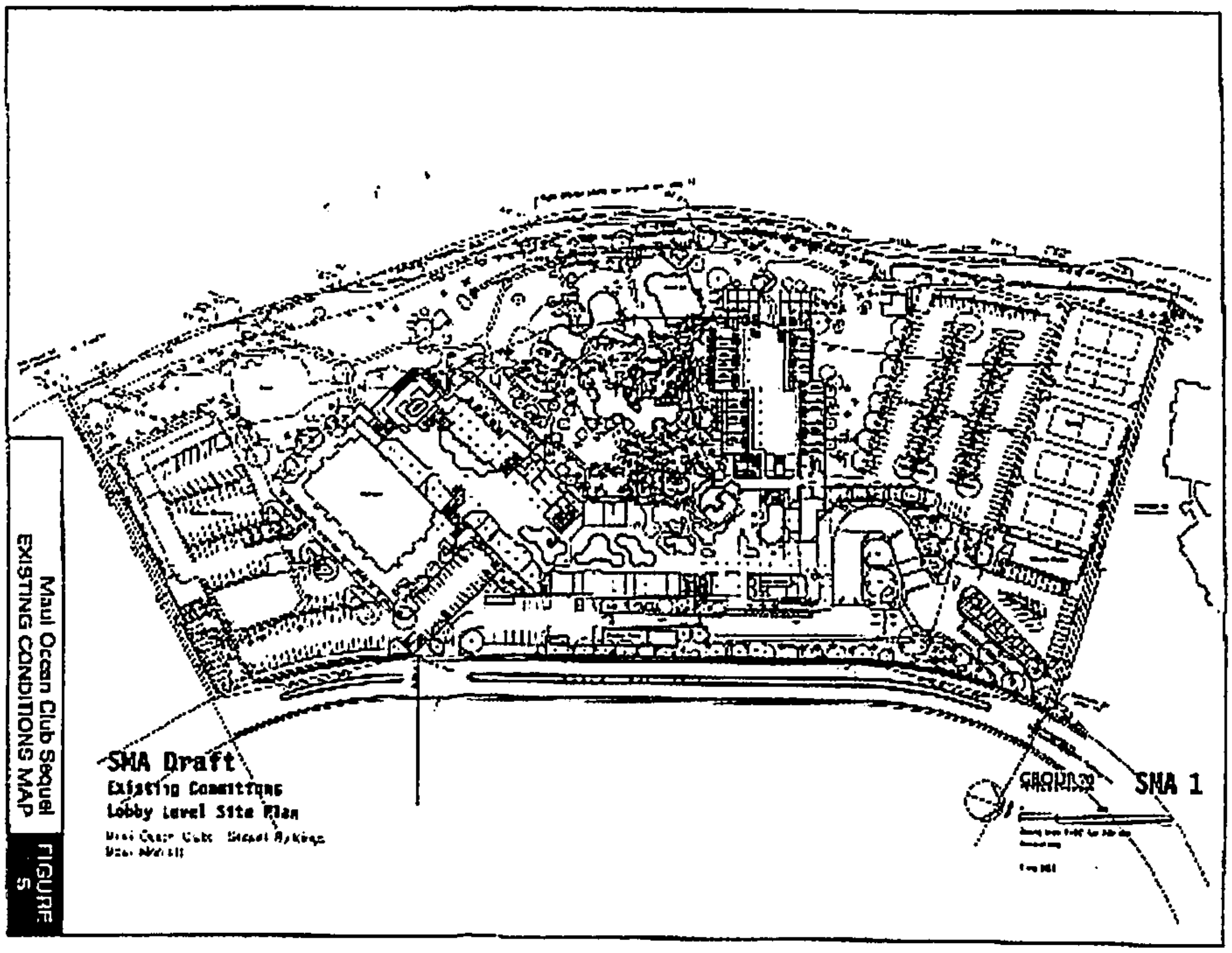

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FIGURE 2- EXISTING CONDITIONS

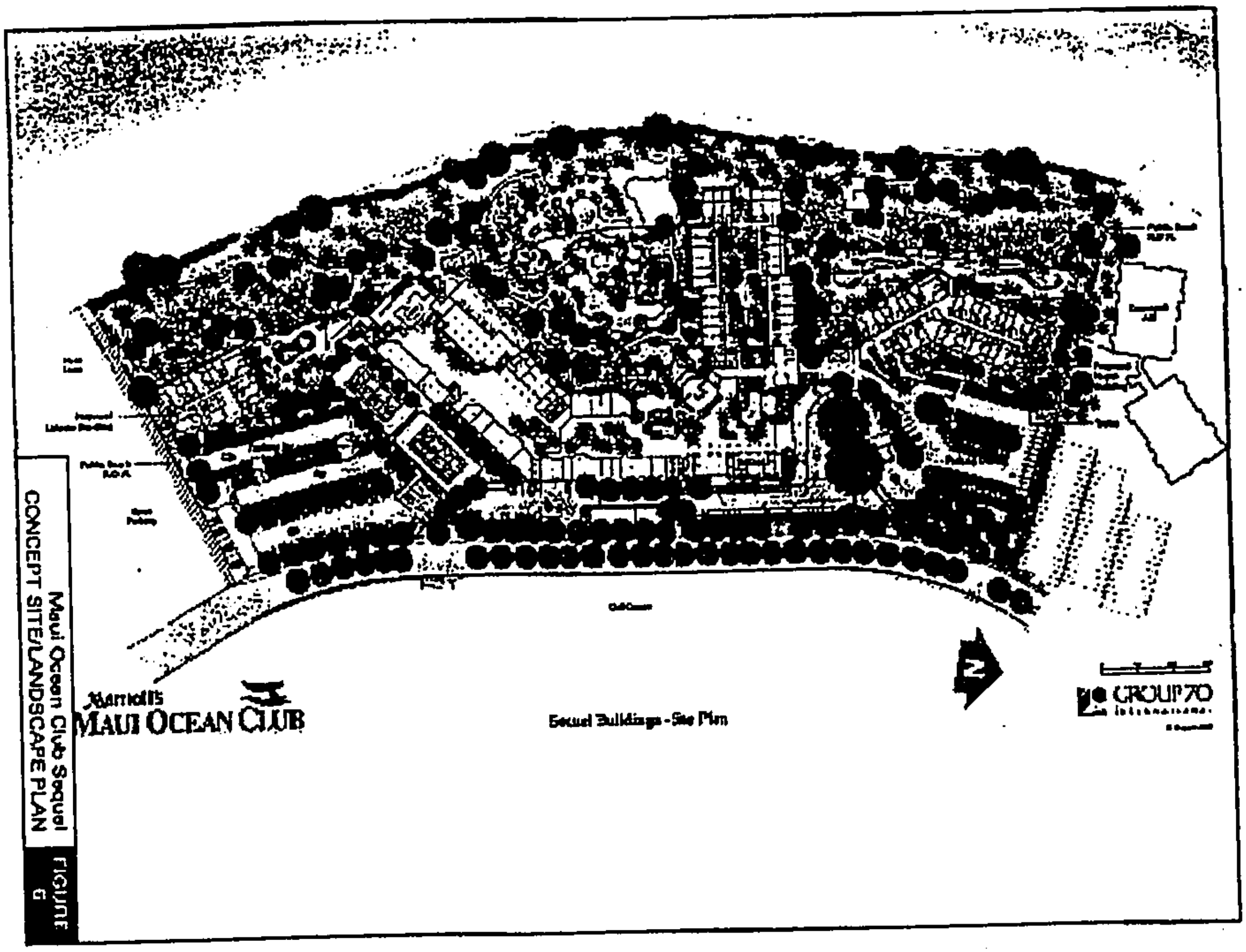

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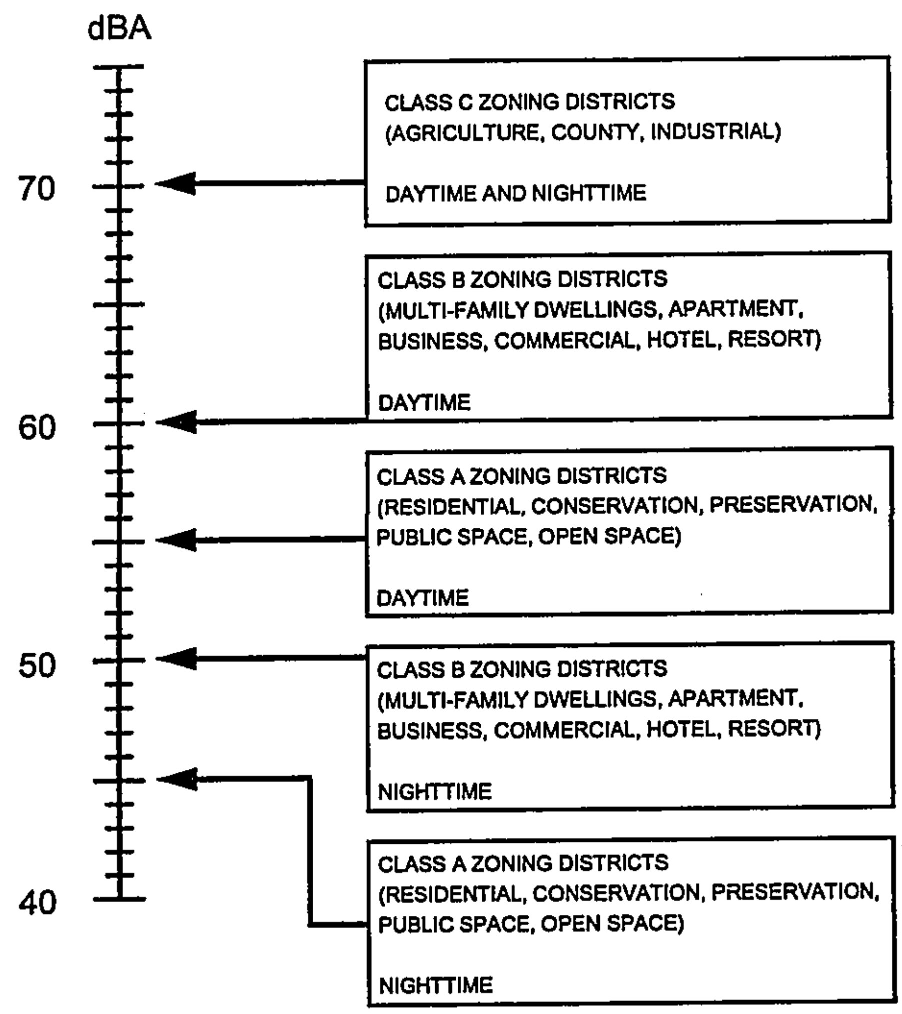
FIGURE 3- PROPOSED DEVELOPMENT



NOTE: SOUND LEVELS INDICATED BY ZONING DISTRICT ARE THE "MAXIMUM PERMISSIBLE" SOUND LEVELS DUE TO EXCESSIVE NOISE SOURCES SUCH AS STATIONARY MECHANICAL EQUIPMENT AND EQUIPMENT RELATED TO AGRICULTURAL, CONSTRUCTION AND INDUSTRIAL ACTIVITIES THAT SHALL NOT BE EXCEEDED FOR MORE THAN 10% OF THE TIME WITHIN ANY 20-MINUTE PERIOD DURING THE TIME PERIOD SHOWN.

(DAYTIME: 7:00 A.M. TO 10:00 P.M., NIGHTTIME: 10:00 P.M. TO 7:00 A.M.)

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FIGURE 4 - STATE OF HAWAII MAXIMUM PERMISSIBLE SOUND LEVELS FOR VARIOUS ZONING DISTRICTS

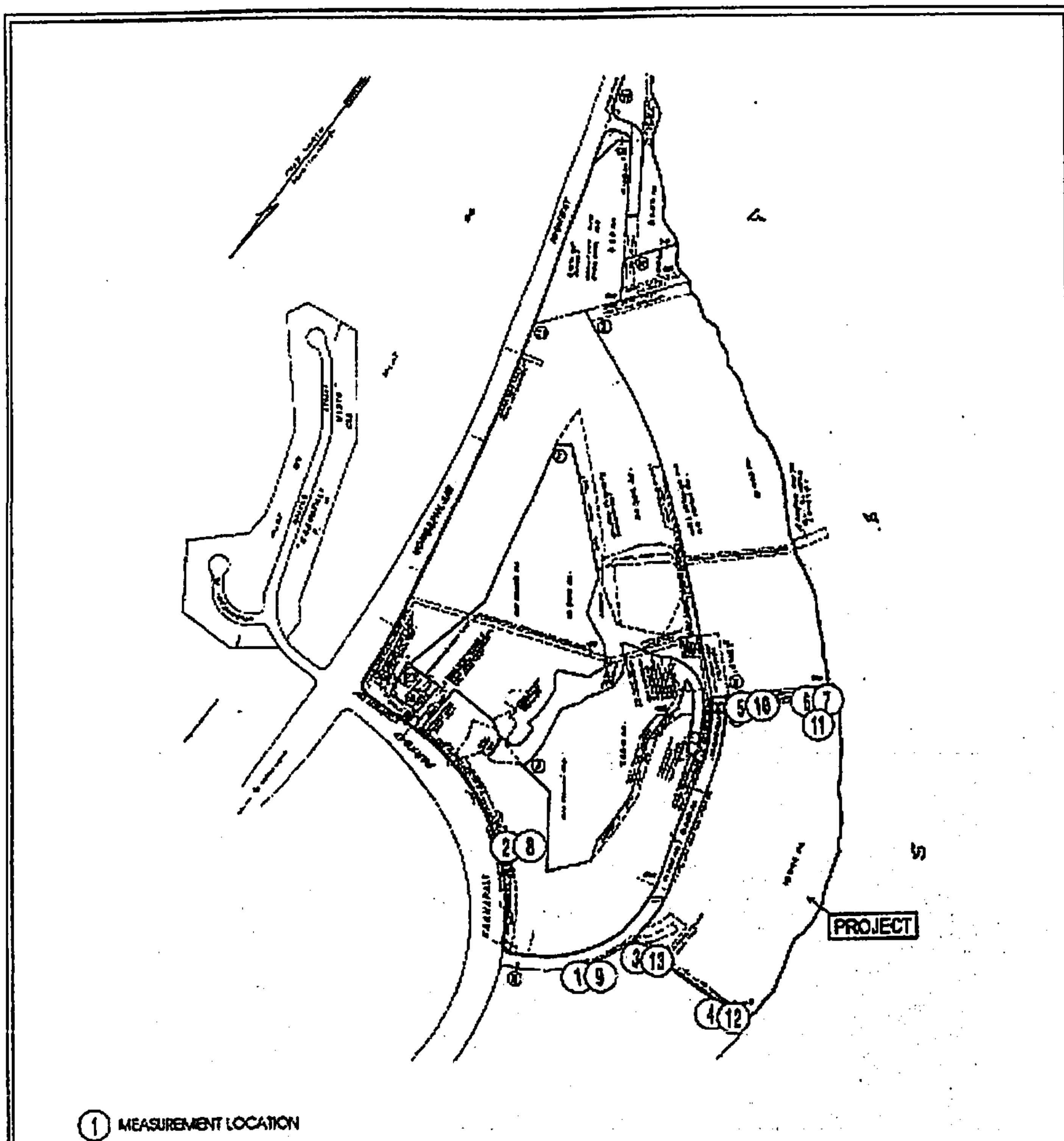

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FIGURE 5 - LOCATIONS OF NOISE MEASUREMENTS

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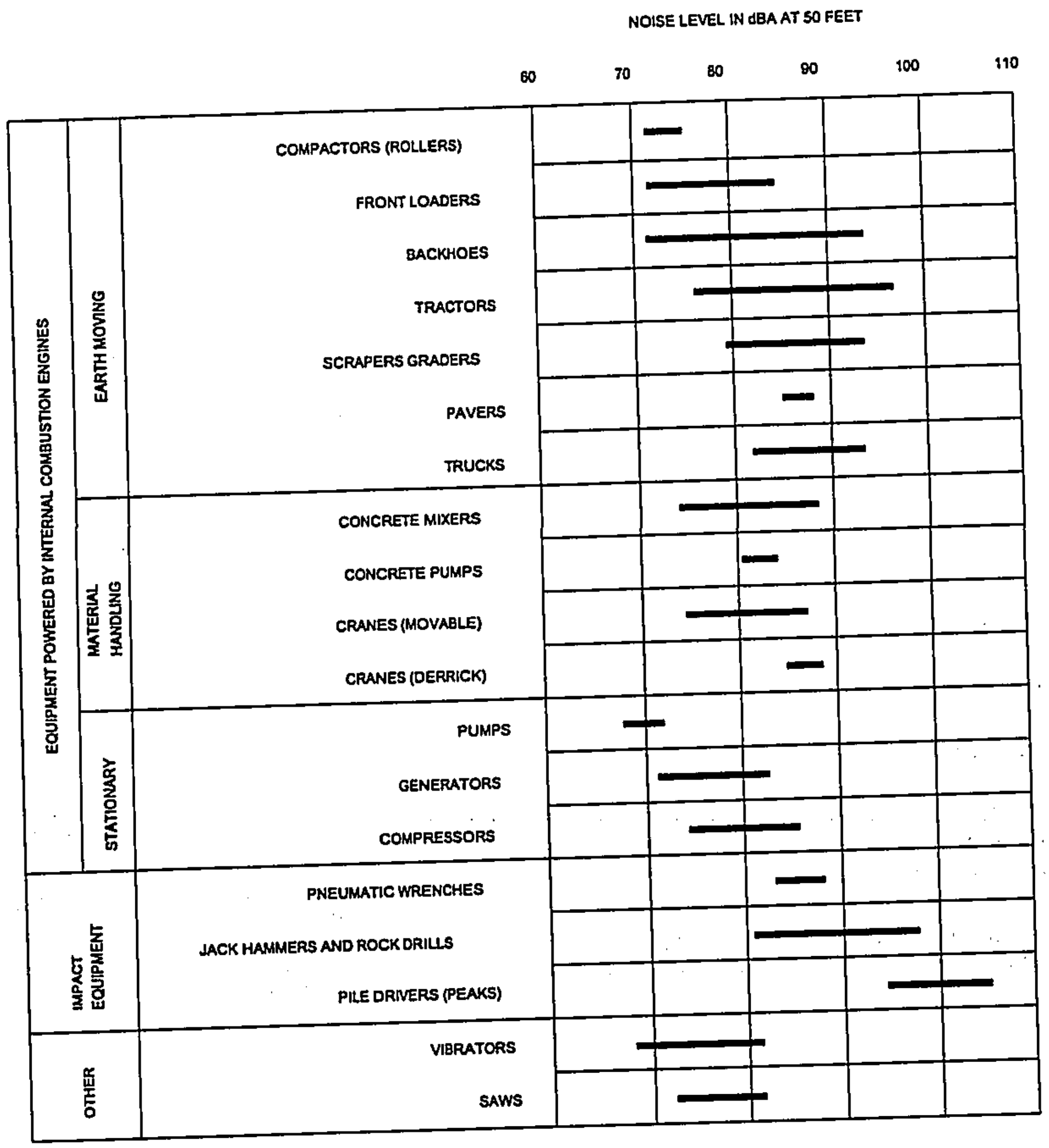
[illegible] FAX: [illegible] EMAIL: [illegible]

FIGURE 6- LOCATIONS OF NOISE SENSITIVE AREAS



NOTE: BASED ON LIMITED AVAILABLE DATA SAMPLES

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FIGURE 7 - TYPICAL SOUND LEVELS FROM CONSTRUCTION EQUIPMENT

Statistical Sound Levels

The sound levels of long-term noise producing activities, such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels developed. It is known as the Exceedence Level, L_n. The Exceedence Level, L_n, represents the sound level which is exceeded for n% of the measurement time period. For example, $L_{10} = 60$ dBA indicates that for the duration at the measurement period, the sound level exceeded 60 dBA 10% of the time. Commonly used Exceedence Levels include L_1, L_{10}, L_{50}, and L_{90}, which are widely used to assess community and environmental noise. Figure A-2 illustrates the relationship between selected statistical noise levels.

Equivalent Sound Level

The Equivalent Sound Level, L_{eq}, represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound being measured over a specific time period. L_{eq} is commonly used to describe community noise, traffic noise, and hearing damage potential. It has units of dBA and is illustrated in Figure A-2.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, L_{dn}, is the Equivalent Sound Level, L_{eq}, measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 pm and 7 am to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations. Qualitative descriptions, as well as local examples of L_{dn}, are shown in Figure A-3.

APPENDIX A

ACOUSTICAL TERMINOLOGY

Sound Pressure Level

Sound or noise consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. It is measured in terms of decibels (dB) using precision instruments known as sound level meters. Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$SPL = 20 \log (P/Pref) \text{ dB}$$

where P is the sound pressure fluctuation (above or below atmospheric pressure) and Pref is the reference pressure, 20 micropascals, which is approximately the lowest sound pressure that can be detected by the human ear. For example, if P is 20 micropascals, then SPL = 0 dB, or if P is 200 micropascals, then SPL = 20 dB. The relation between sound pressure in micropascals and sound pressure level in decibels (dB) is shown in Figure A-1.

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound levels, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined level of 53 dB, not 100 dB; two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of a sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 5 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

The human ear is more sensitive to sound in the frequency range of 250 Hertz (Hz) and higher, than in frequencies below 250 Hz. Due to this type of frequency response, a frequency weighting system, was developed to emulate the frequency response of the human ear. This system expresses sound levels in units of A-weighted decibels (dBA). A-weighted sound levels de-emphasizes the low frequency portion of the spectrum of a signal. The A-weighted level of a sound is a good measure of the loudness of that sound. Different sounds having the same A-weighted sound level are perceived as being about equally loud. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

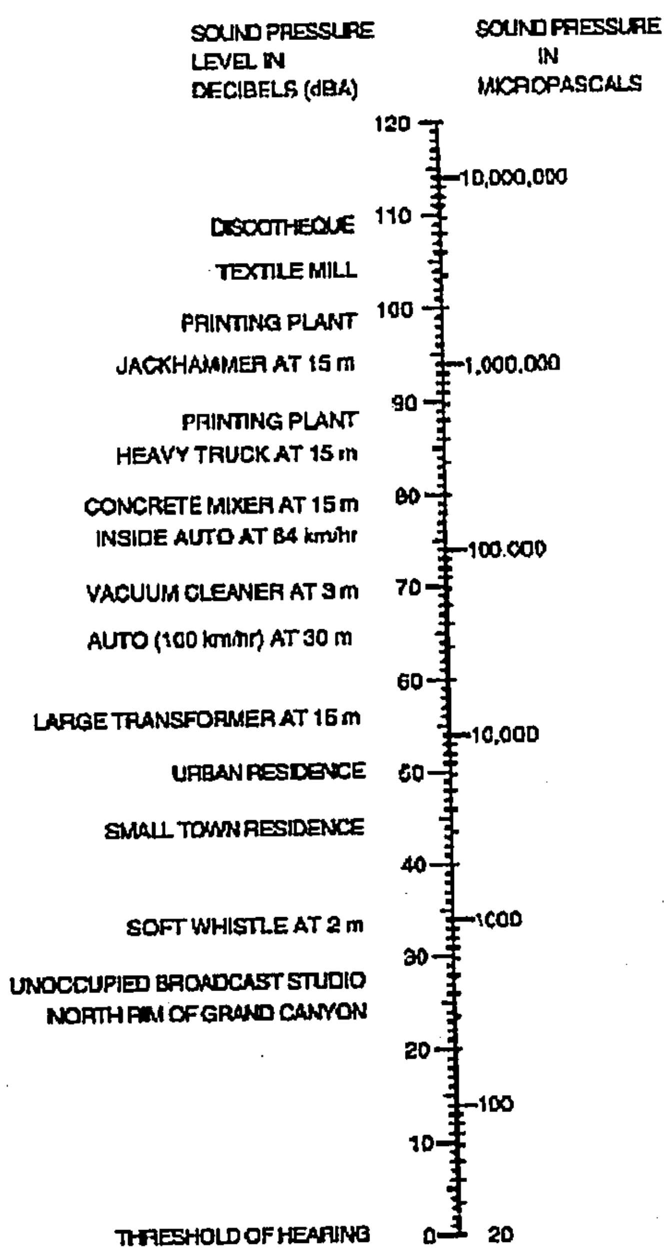

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FIGURE A-1 - THE RELATION BETWEEN SOUND PRESSURE, P, AND SOUND PRESSURE LEVEL, SPL. ALSO SHOWN ARE TYPICAL VALUES OF A-WEIGHTED SOUND LEVELS OF VARIOUS NOISE SOURCES.

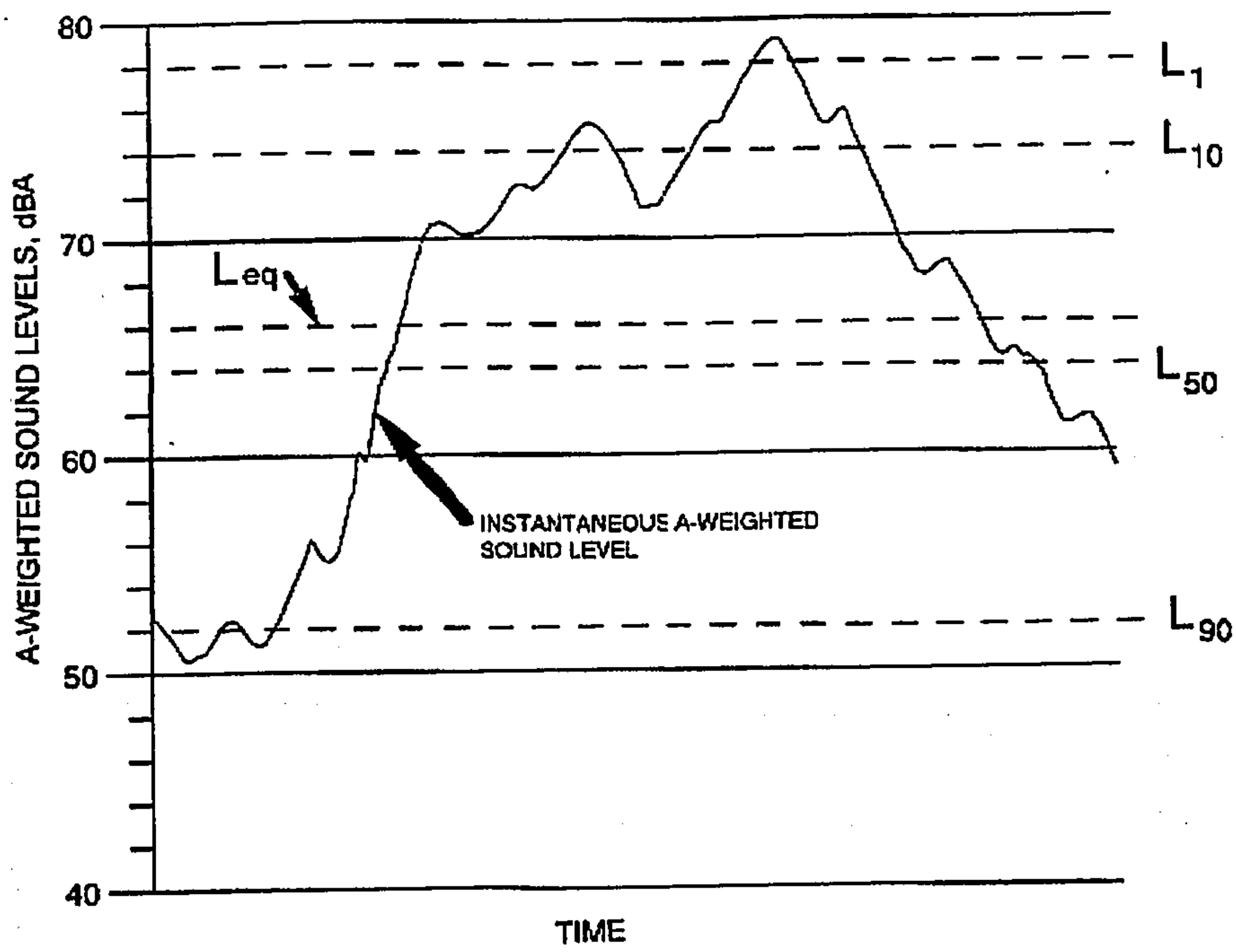

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FIGURE A-2 - COMPARISON OF AN INSTANTANEOUS SOUND LEVEL AND THE CORRESPONDING STATISTICAL SOUND LEVELS

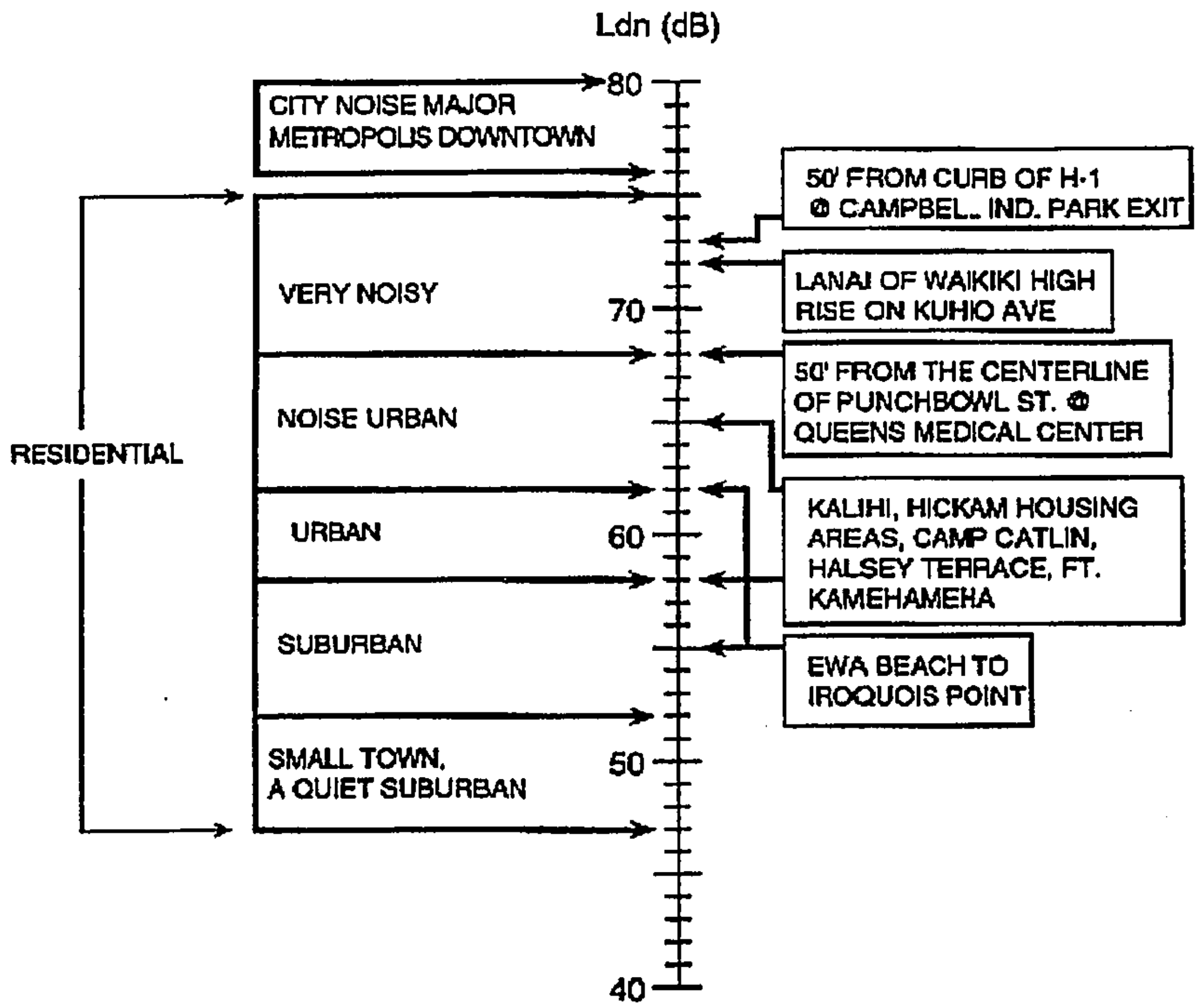

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FIGURE A-3 - QUALITATIVE DESCRIPTION OF THE DAY-NIGHT EQUIVALENT SOUND LEVELS (Ldn) AND EXAMPLE Ldn's AT SELECTED LOCATIONS ON OAHU

D. L. ADAMS ASSOCIATES, LTD.
ACOUSTICAL CONSULTANTS

Project No. 02-46

ASSESSMENT OF PILE DRIVING NOISE LEVELS

April 2003

Prepared for
MARRIOTT VACATION CLUB INTERNATIONAL
Kapolei, Hawaii

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1. INTRODUCTION

For projects with the potential to significantly affect the quality of the human environment, the National Environmental Policy Act requires an evaluation of the potential adverse effects in the form of an Environmental Assessment or Environmental Impact Statement. An Environmental Noise Impact Assessment study[1] was recently completed for the Maui Marriott Ocean Club sequel project. Construction noise, pile driving noise in particular, was identified as the activity with potential to significantly affect the surrounding noise sensitive environment, which includes resorts and luxury time-share condominiums. Wishing to minimize environmental noise impacts, this current investigation was commissioned to conduct sound level measurements at a construction site with active pile driving activities and compare the results with previously published studies and in-house projects files.

2. MEASUREMENTS

Sound level measurements were conducted on March 11, 2003 at the future Wal-Mart project site in downtown Honolulu. The pile driving equipment employed at the construction site was a Junttan Model HHK7A hydraulic impact pile driver, shown in Figure 1, with a 15,400 lb ram and maximum rated energy of 61,600 ft-lbs. Maximum stroke for this model is 48" while minimum stroke is 8". The ram can deliver 40 blows per minute at maximum stroke and 100 blows per minute at minimum stroke.

Figure 1
Junttan Model HHK7a Hydraulic Impact Pile Driver

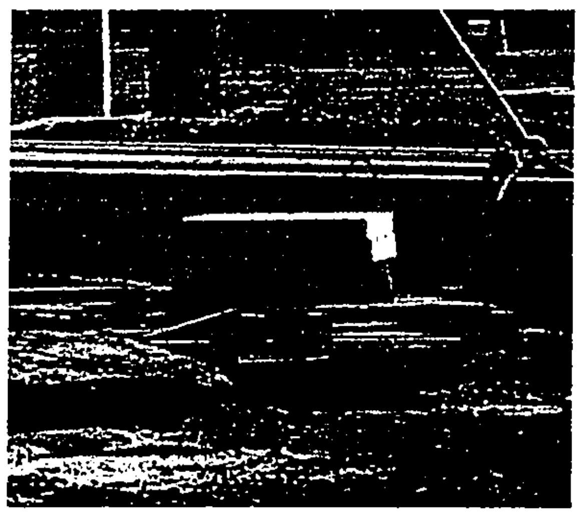

Figure 2
Plywood Cushions

On Oahu, pile driving typically requires driving piles through the topsoil and initial earth crust into a liquid-earth muck in order to reach the coral shelf where the pile will be seated. At this construction site, the reinforced concrete piles were lifted into pre-drilled holes by a crane. Before proceeding with driving each pile, a plywood cushion block, shown in Figure 2, was inserted into the drive cap. A 24" stroke was used to drive the two piles through the crust and muck to and seat them into the coral shelf.

Noise level measurements were taken at the distance of 50', 100', and 150' from the pile using Larson Davis Laboratories Model 820, Model 700, and Model 824 Sound Level Meters, respectively. The three sound level meters were aligned at approximately a 45-degree angle from the right rear of the pile driving operator's cab during the driving of Pile 1. During the driving of Pile 2, the sound level meters at the 100' and 150' locations were aligned at approximately a 45-degree angle with the right rear of the pile driver's cab, as with Pile 1, and the sound level meter at the 50' location was aligned with the left front of the cab at an angle of approximately 45-degrees. Obstructions on the construction site made it impossible to line all three meters up in a row for Pile 2. As would be expected with most construction sites, other equipment, including pre-pile driving drill, crane, loader, and various other pieces of equipment, were in active use while pile driving was in progress. Traffic noise from surrounding streets was audible when construction site noise was low.

3. RESULTS

The results obtained, shown on Figures 3 and 4, are expressed in terms of equivalent sound levels, L_{eq}, in units of A-weighted decibels. Measurements were taken in 10-second intervals simultaneously at the three locations for the duration of driving each pile. The duration was approximately seven minutes and four minutes to drive Pile 1 and Pile 2, respectively. Background sound levels without pile driving were between 67 dBA and 74 dBA.

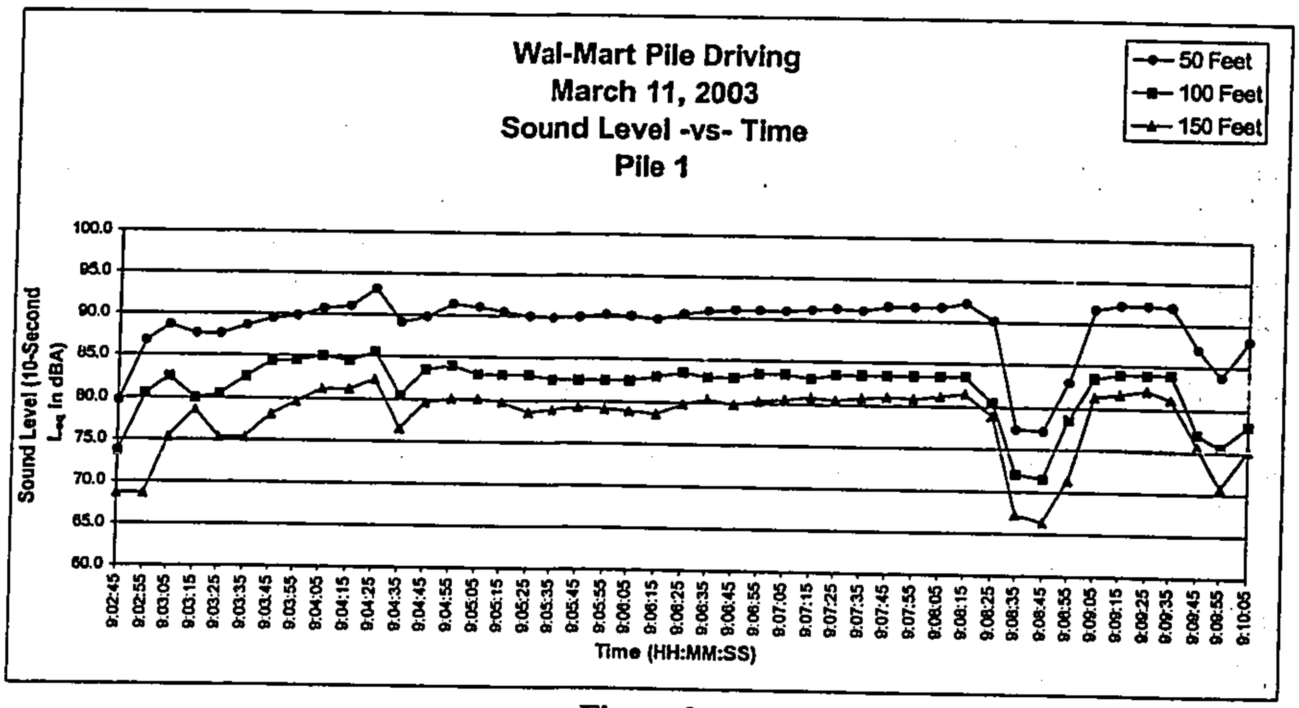

Figure 3
Pile 1

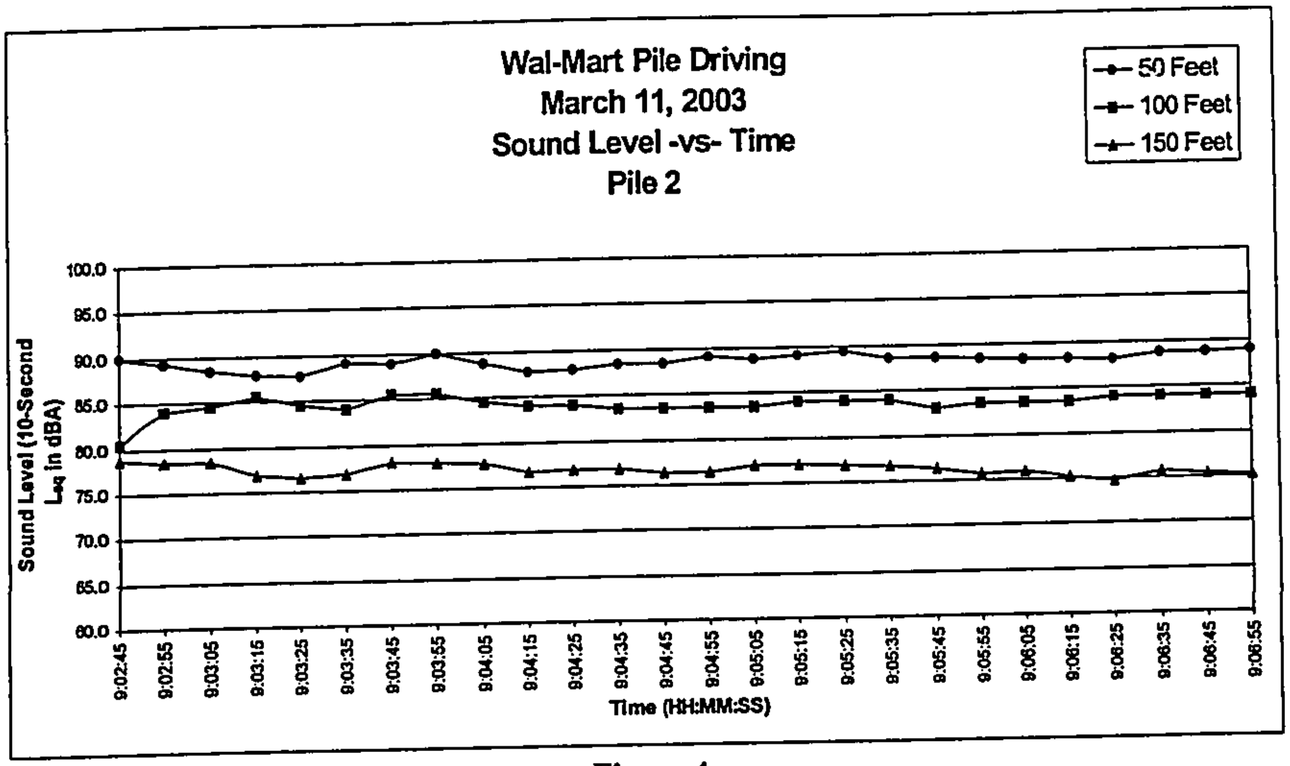

Figure 4
Pile 2

Sound levels are expected to decrease 6 dB for each doubling of distance from a point source outdoors with no obstructions. Upon reviewing the sound level measurement data, sound levels taking during the driving of Pile 1 appears to closely follow the 6 dB decrease for each doubling of distance expectation. Pile 2 driving sound level measurements deviate from the expected 6 dB decrease with each doubling of distance. This deviation could be due to the sound level meter configuration during the driving of Pile 2 or other on-site construction equipment.

4. COMPARISON WITH PREVIOUS STUDIES

4.1 Gill, H., Control of Impact Pile Driving Noise and Study of Alternative Techniques, 1983[2]

H. Gill published a paper in 1983 summarizing the various categories of pile driving equipment including vibratory pile drivers, sonic pile drivers, auguring techniques, and impact drivers that utilize gravity drop hammers, diesel, pneumatic or steam. Gill further categorized impact pile drivers as "Quiet", "Semi-Quiet", and "Conventional" as determined by sound levels measured while driving sheet piles. At a distance of 50', the range of L_{eq} measured for "Quiet" pile divers was 62 to 74 dBA, 76 to 89 dBA for "Semi-Quiet" divers, and 93 to 106 dBA for conventional pile driving equipment. The "Quiet" and "Semi-Quiet" pile drivers were outfitted with noise attenuation measures including cushioning the hammer to avoid metal to metal contact, using nylon rollers to closely fit the driver to the piles, enclosing the pile and hammer assembly with a large rectangular box made of steel or composite material, and employing multiple drop hammers in configuration and technique different than typical drop hammer pile drivers.

Using the sound level data from Pile 1 and Pile 2 at the 50' location, the average 10-second L_{eq} was 89 to 90 dBA. Comparing to the Gill categories, the Junttan Model HHK7a would correspond to the "Semi-Quiet" pile driver classification.

4.2 Greene, R., Greene, M., Pirie, R., Comparison of Pile-Driver Noise and Vibration from Various Pile-Driving Methods and Pile Types, 2002[3]

The publication by Greene, Greene, and Pririe describes noise levels measured during the driving of steel piles with H and AZ configurations using both impact and vibratory pile driving equipment. Short-term measurements resulted in L_{eq}'s of 100 dBA for an H-pile driven by an impact driver, 102 dBA for an AZ-pile driven by an impact driver, 90 dBA for an H-pile driven by a vibratory driver, and 103 dBA for an AZ-pile driven by a vibratory driver.

Although Pile 1 and Pile 2 were reinforced concrete piles, the sound level measurements conducted are comparable to the H-pile driven by a vibratory driver in this report. The sound levels measured for the H-pile configuration and vibratory driver combination were significantly lower than the three other pile configuration and driver combinations studied.

4.3 D.L. Adams Associates, Ltd., In-House Files, 1996[4]

In 1996, D.L. Adams Associates, Ltd. conducted sound level measurements during the driving of two piles by a hydraulic hammer. Efforts were made by both the hydraulic hammer manufacturer and the contractor to reduce the noise of pile driving. The hammer manufacturer drilled holes, approximately 2" in diameter, in the steel striker plate and filled them with lead to reduce the "ring" of the plate. The contractor fabricated a steel frame that bolted to the striker plate area. To this frame, a vinyl-clad, foam rubber material, approximately 1" thick, was attached on all four sides. A shroud, fabricated from a large steel frame supporting a "sound attenuation blanket," was placed between the hammer and noise sensitive locations during various times and states of the pile driving operation. The shroud was 10' tall with a center section 8' wide and two wings each 6' long angled back about 30 degrees. It was concluded that the shroud provided a 3 to 4 dB reduction in the maximum sound levels. However, it was recommended that the shroud be reconfigured to completely encircle the hammer and the "sound attenuation blanket" material be of high density, such as loaded vinyl, for 10 to 12 dB additional noise reduction.

The hammer used to drive Pile 1 and Pile 2 did not include any mitigation measures such as a shroud. It may have been possible to gain additional noise reduction by using a fabricated shroud.

5. CONCLUSION

Although likely be the loudest activity during construction, pile driving sound levels can be reduced from those produced from conventional pile driving, sound levels of up to 105 dB, by employing a hammer designed to produce lower noise levels when combined with the type of pile being driven. In addition to the hammer and pile type choice, placing a sound attenuating material or cushion block between the hammer and pile appears to be a successful noise reduction measure. Further noise mitigation measures could include utilizing a fabricated shroud that encircles the hammer with a "sound attenuation blanket" made of high density material such as loaded vinyl with sound absorbing material on the side facing the pile.

6. REFERENCES

1. Adams, D., Hesedahl, J., *Environmental Noise Impact Assessment, Maui Marriott Hotel, Final Report*. D.L. Adams Associates, Ltd. under contract to Marriott Vacation Club International. Kapolei, Hawaii, October 2002.

2. Gill, H., *Control of Impact Pile Driving Noise and Study of Alternative Techniques*, Noise Control Engineering Journal March-April 76-83, Institute of Noise Control Engineering.

3. Greene, R., Greene, M. Pirie, R., *Comparison of Pile-Driver Noise and Vibration from Various Pile-/Driving Methods and Pile Types*, Inter-Noise 2002 N545, URS Corporation.

4. D.L. Adams Associates, Ltd., 1996. In-House Files.

APPENDIX D
Shoreline Evaluation Report

SHORELINE EVALUATION

MAUI MARRIOTT HOTEL

Prepared For:
Chris Hart & Partners
Wailuku, Hawai`i

Prepared By:
Sea Engineering, Inc.
Waimānalo, Hawai`i

March 1999

#99-05

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I EXECUTIVE SUMMARY

The Maui Marriott Hotel, located near the center of Hanaka`ō`ō Beach, is proposing to implement minor structural and landscaping changes, and some of them are within the shoreline setback area. This study was conducted to describe the historical vegetation line changes at the site and to predict, to the extent possible, the vegetation line position 30 years from now.

The north and middle sectors of Hanaka`ō`ō Beach are dynamic, responding to the seasonally varying wave climate. In the summer, the sand moves from Hanaka`ō`ō Point to the north due to the influence of the prevailing south swell. The pattern reverses in the winter when the north Pacific swell is present. While the seasonal changes at Hanaka`ō`ō Point are pronounced, the vegetation line is relatively stable.

Hanaka`ō`ō Beach was included in a study which evaluated long term shoreline changes on many of the beaches in the State of Hawai`i (Makai Ocean Engineering, Inc. and Sea Engineering, Inc., 1991). The method involved computer rectification of available aerial photographs, followed by digitization and plotting of the vegetation line. That 1991 study was updated for this evaluation by adding two additional photos and three shoreline certification surveys to the data base.

The results of the analysis show a relatively stable vegetation line at the hotel, with a range of movement of only 25 feet over the 50 year record period. The net change since 1949 at the three transects selected for evaluation was less than 5 feet. The historical vegetation line changes were used as a basis for the prediction of the vegetation line position in 30 years. Since future storms and wave patterns that affect the vegetation line cannot be predicted, a probabilistic model was utilized to calculate the probability distribution of future vegetation line positions.

The mean predicted position of the vegetation line at the project site in 30 years is within 3 feet of its present position. Fluctuations about the mean position corresponding to those that have occurred in the past should be anticipated.

II COASTAL SETTING

The Maui Marriott Hotel is located along the middle sector of Hanaka`ō`ō Beach on the northwest coast of the island of Maui. Hanaka`ō`ō Beach extends south from Keka`a Point to Hanaka`ō`ō Beach Park, a distance of approximately 8,000 feet. The coastal sector between Lahaina and Kapalua is one of the major resort areas on Maui and Hanaka`ō`ō Beach is one of several long, narrow sandy beaches in this area. Extensive construction has taken place along the beach in the past 30 years and, except for Hanaka`ō`ō Beach Park, the backshore is fully developed with resort hotels and condominiums.

The Maui Marriott was built in 1980-1981. The hotel consists of a single large horseshoe shaped structure, with the open side facing the ocean. The hotel property extends along approximately 1,400 feet of the shoreline. Minor hotel structures (beach center, grill and swimming pool) are located in the open central area between the two wings of the hotel. The Kā`anapali Ali`i condominium is located on the each north of the hotel, with the Westin just north of the Alii. The Hyatt Regency Maui is the neighboring property to the south.

As along most of Kā`anapali Beach, there is a concrete sidewalk, located just behind the vegetation line, which provides easy lateral access along the shoreline.

Hanaka`ō`ō Point, a seasonally varying sand feature, is located directly off the hotel's tennis courts, which are next to the north property line. A fringing reef lies off Hanaka`ō`ō Point and the central part of the beach. The reef extends along the length of the hotel shoreline, with typical widths ranging from 200 to 300 feet. The reef has numerous sand pockets and small channels (Clark, 1980).

Photos 1 to 6 show typical shoreline conditions observed during a site visit conducted on March 16, 1999. Photos 1 and 2 were taken from Hanaka`ō`ō Point just off the south end of the hotel tennis courts. Photos 1 and 2 were taken looking north and south, respectively. The measured beach width (vegetation line to high water line) at this location was approximately 120 feet. The beach is widest at Hanaka`ō`ō Point, and narrows steadily with distance to the south along the hotel property. This tendency can be seen in Photo 2.

Photo 1: View to North from Hanaka`ō`ō Point

Photo 2: View to South from Hanaka`ō`ō Point

Photos 3 and 4 were taken looking north and south, respectively, from the beach off the center of the property. The beach width at this point was approximately 55 feet.

Photos 5 and 6 were taken looking north and south, respectively, from the south property line. The beach width at this location was approximately 25 feet. The beach in this area also becomes noticeably steeper, as shown in Photo 6. The beach remains narrow from the south end of the Marriott property to the start of Hanaka`ō`ō Beach Park.

The Beach Management Plan for Maui (1997) identified erosion hotspots and watchspots. An erosion hotspot was defined as a location where erosion has threatened shoreline development or infrastructure. A watchspot was defined as an area where the coastal environment will soon be threatened if shoreline erosion trends continue. Along Hanaka`ō`ō Beach the Hyatt Regency was identified as a hotspot and the Maui Surf - Westin was identified as a watchspot. Both these areas have undergone localized erosion and in the past applied for emergency shoreline protection permits. The areas affected were small, and the erosive events were associated with specific wave occurrences. The Maui Marriott has never applied for an emergency shoreline protection permit.

III COASTAL PROCESSES AND SHORELINE HISTORY

Hanaka`ō`ō Beach is a dynamic beach, and portions of it undergo pronounced seasonal changes. The beach is exposed to North Pacific swell and Kona storm waves in the winter and south swell in the summer. The waves approach the beach at an angle and the breaking waves generate longshore currents which transport sand along the shoreline. The predominant transport direction in the winter months is to the south, under the influence of the prevailing north Pacific swell. This southward transport moves sand from the north end of the beach toward the south; the north end of the beach erodes while the south end accretes. There is one important exception to this winter pattern. Waves generated by irregularly occurring winter season Kona storms approach from the south and southwest and move sand northward along the beach, temporarily reversing the pattern. The alongshore transport direction reverses in the summertime, with the prevailing south swell moving the sand to the north. This seasonally varying wave climate results in pronounced shifts in the winter/summer sandy beach widths. The effects are most apparent at the north end of the beach near Keka`a Point and at Hanaka`ō`ō Point. Hanaka`ō`ō Point accretes during the winter months and erodes during the summer months. Moberly and Chamberlain in their 1964 report noted that the beach at the point would narrow to 30 feet in the summer. During the summer of 1963 the northward transport resulted in a 15 foot high scarp at the beach. Seasonal variations of 100 to 150 feet in sandy beach width at this location are not unusual. Correspondingly large changes also occur at the north end of the beach, fronting the Sheraton Maui Hotel. Seasonal changes in beach width in other locations along the beach are usually not as pronounced. Although the varying seasonal wave climate results in large changes in the sandy beach widths at some locations, the long term changes in the vegetation lines have typically been more subtle.

The above description of the seasonal shoreline variations at Hanaka`ō`ō Point agrees with anecdotal reports from long term staff members at the Maui Marriott Hotel. They have observed the seasonal transport of sand toward the Sheraton in the summer, and the accumulation of sand at the point in the winter months. One of the most severe recent erosive events occurred during the summer of 1995 when the beach retreated to the vegetation line and 6 to 10 feet of the vegetation line was lost from a small area just south of the hotel pool. According to staff reports, the summer season south swell typically causes more shoreline retreat than during the occurrence of Kona storms or the offshore passage of hurricanes. During the passage of Hurricane `Iwa in 1982 and `Iniki in 1992, the shoreline landscaping was damaged by salt water "burn" but there was only minor erosion of the vegetation line.

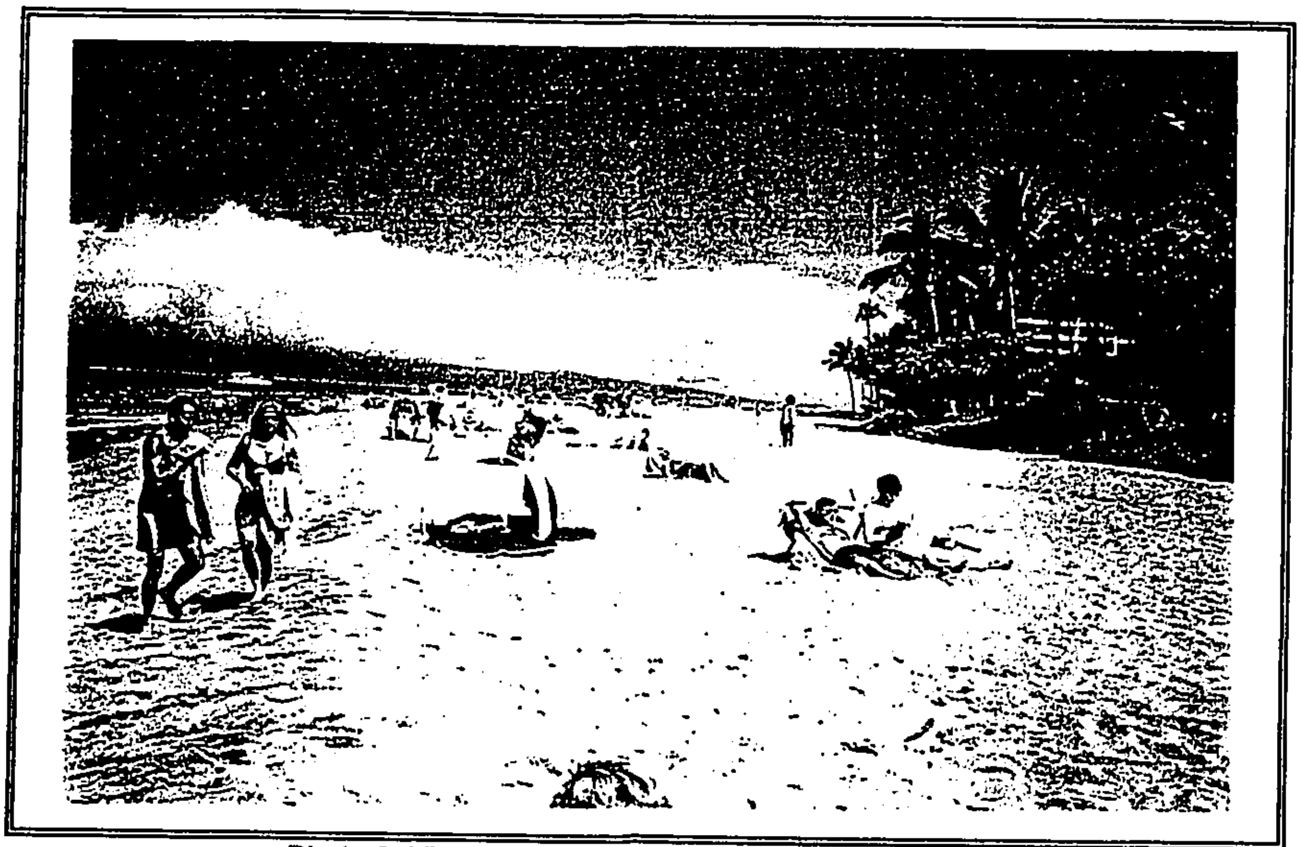

Photo 3: View to North from Center of Hotel Property

Photo 4: View to South from Center of Hotel Property

Photo 5: View to North from South Property Line

Photo 6: View to South from South Property Line

III COASTAL PROCESSES AND SHORELINE HISTORY

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The recent El Nino event caused severe erosion of the north end of the beach during the winter of 1997-1998. In spite of the large seasonal variations in width at the north end of the beach, the vegetation line fronting the Maui Sheraton Hotel had been stable over a 40 year period from 1949 to 1988 (Makai Ocean Engineering, Inc. and Sea Engineering, Inc, 1991). By March 1998 the hotel vegetation line had eroded as much as 50 feet, and the concrete sidewalk providing lateral access along the shoreline was undermined and collapsed. The winter of 1997-1998 was one of unusually large north Pacific swell, due at least in part to the strongest El Nino event on record. The frequent occurrence of large waves from the north resulted in more sand transport to the south than usual. During the same period, there were no Kona storms to temporarily slow down or reverse this seasonal transport. The shoreline at Hanaka`ō`ō Point accreted at the same time that the Sheraton shoreline eroded.

With the arrival of the summertime south swell, the sand moved rapidly back to the north. Between May 4 and August 6, 1998, the width of the sandy beach fronting the Sheraton Maui Hotel increased by up to 140 feet. During the same period, the width of the beach at Hanaka`ō`ō Point decreased by up to 160 feet. No erosion of the vegetation line at Hanaka`ō`ō Point occurred during this shift of sand.

The southern part of the beach, below Hanaka`ō`ō Point, also undergoes seasonal changes, but they are more subtle than those described above. During the winter of 1997-1998, while the middle and north sectors of the beach were dramatically changing, no significant changes occurred south of Hanaka`ō`ō Point.

Photos 7 and 8, taken in October 1982 and May 1997, respectively, were used to analyze vegetation line changes for this report. The two photos illustrate the pronounced seasonal changes that occur at Hanaka`ō`ō Point. Photo 7 represents typical end of summer conditions and Photo 8 represents typical end of winter conditions. Photo 7 also illustrates the extreme angle at which incoming waves can approach the point. Sand transport volumes are a function of wave height and approach angle. The waves shown approaching the north side of Hanaka`ō`ō Point in Photo 7 would have resulted in a significant transport of sand to the south.

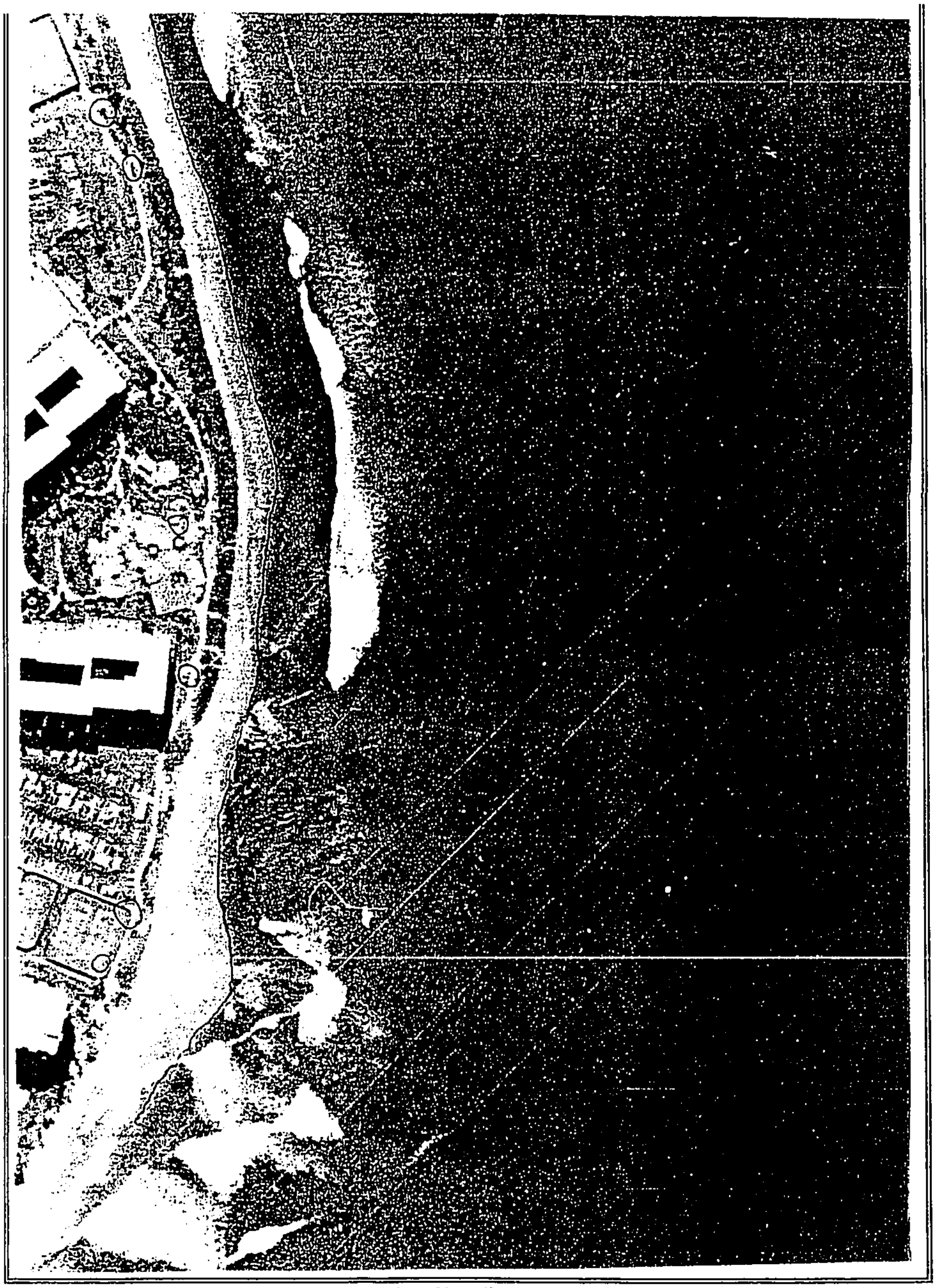


Photo 7: Project Shoreline, October 1982

Photo 8: Project Shoreline, May 1997

IV ANALYSIS OF COASTAL EROSION AND ACCRETION RATES

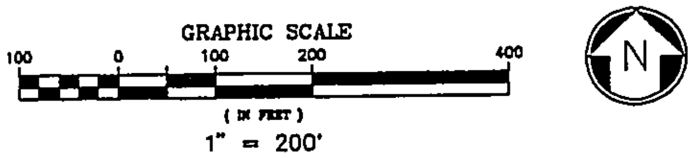
Long term beach changes are best represented by the position of the vegetation line. While sandy beach widths may fluctuate rapidly in response to seasonal or other short term events, the vegetation line typically responds to longer term or extreme changes. Vegetation line changes were evaluated for many of the sandy beaches in the state, including Hanaka`ō`ō Beach, in a study conducted for the State of Hawai`i, Office of State Planning, Coastal Zone Management Program (Makai Ocean Engineering, Inc. and Sea Engineering, Inc., 1991). The study included computer rectification of available aerial photographs, followed by digitization and plotting of the vegetation line.

The 1991 study evaluated the first available vertical aerial photograph of the Ka`anapali coastline, taken in 1949, and subsequent photographs taken in 1961, 1975, 1987 and 1988, and therefore represented 40 years of beach changes. Although the study resulted in digitized shoreline maps for each photographic series, transects were selected in specific locations to represent and describe the vegetation line changes. Figure 1 summarizes the study results for the south and central portion of Hanaka`ō`ō Beach. The transects north and south of Maui Marriott Hotel show relatively stable vegetation lines, with net changes over the 40 year period of 14 feet or less. Transect 7, located at the "hotspot" at the Hyatt Regency Maui showed the greatest net change, and erosion of 23 feet.

The 1991 report was updated for this shoreline evaluation by adding two aerial photographs (October 1982 and May 1997) and a 1998 shoreline certification surveys to the data base. The new photographs were computer rectified and the vegetation line from the photographs and surveys were digitized and added to the data base, which now represents a 49 year period. The information was summarized for an additional transect (transect 8A) in the center of the hotel property in order to provide more detail on the area of interest.

The digitized shoreline positions and the data for the individual transects are shown on Figure 2. In addition, the beach toe was digitized from the 1982 and 1997 photos, and this information is also shown on Figure 2.

The digitized shorelines and the transect data indicate that the vegetation line has been relatively stable over the past 49 years, compared to some other locations along the beach and compared to the dynamic changes exhibited by the sandy beach. The total range of movement at each transect, and the maximum shoreward and seaward excursions of the vegetation line relative to the present positions are summarized below:



SHORELINE ACCRETION (FT)

	Tran−8	Tran−8A	Tran−9
1949	Baseline		
1961	−9	−12	+9
1975	−9	−16	−11
1982	+6	−9	−8
1987	+16	+8	+14
1988	+13	−2	+6
1997	−10	−12	−6
1998	+5	−5	−2
Ave. Rate (ft/yr)	+0.10	−0.10	−0.04
2028 Estimate (Relative to 1998)	+3	−3	−1
Standard Dev.	18	17	18

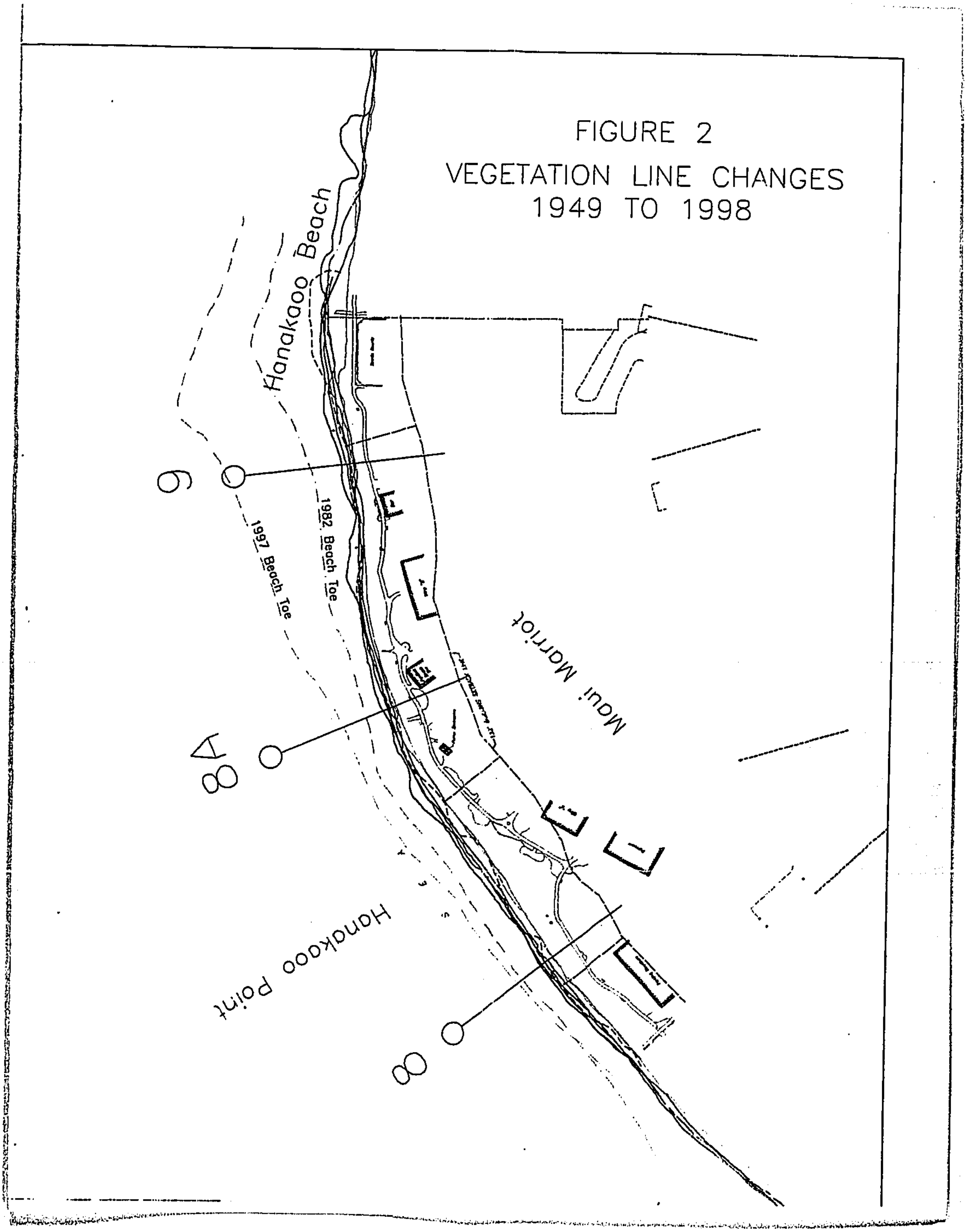


FIGURE 2
VEGETATION LINE CHANGES
1949 TO 1998

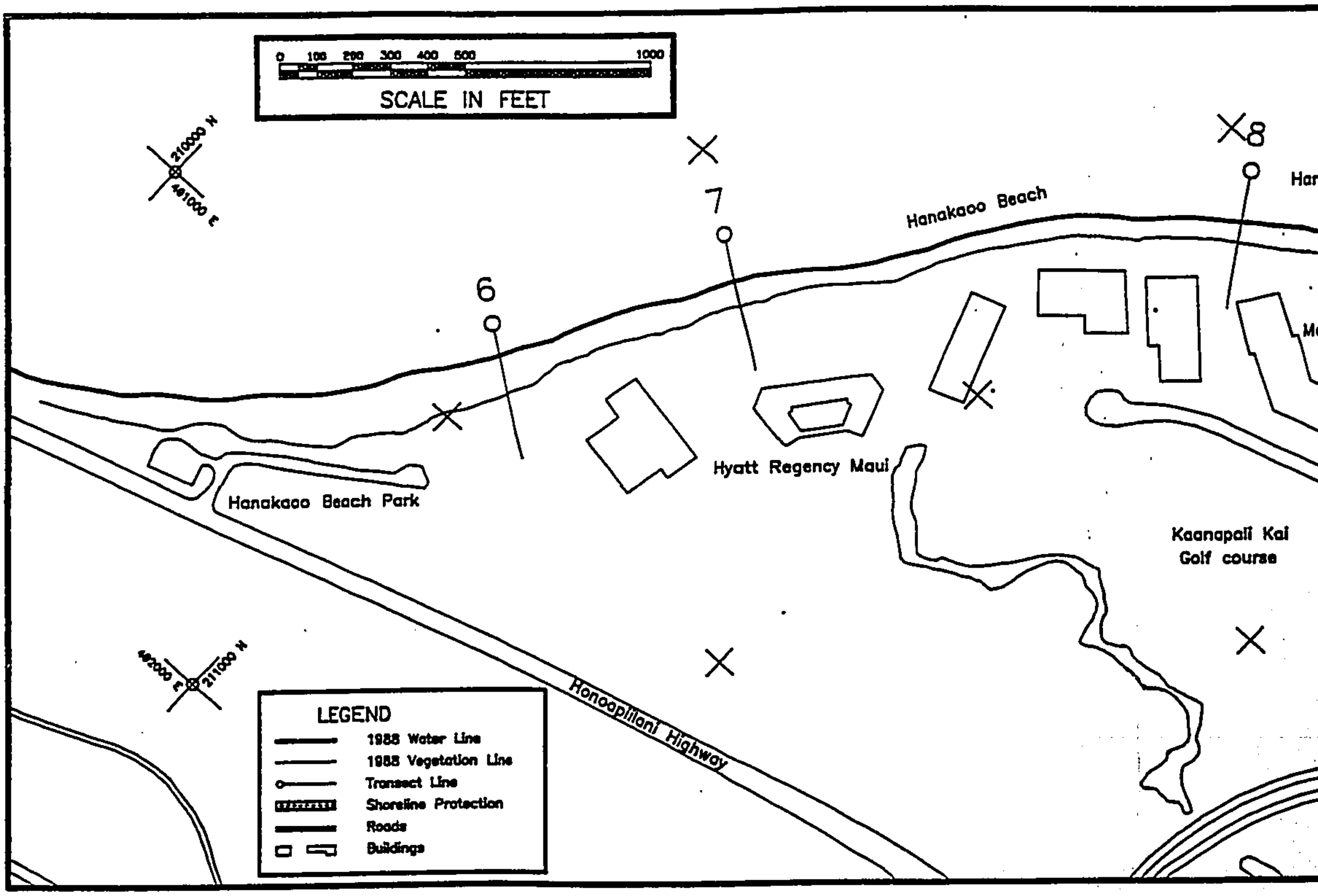
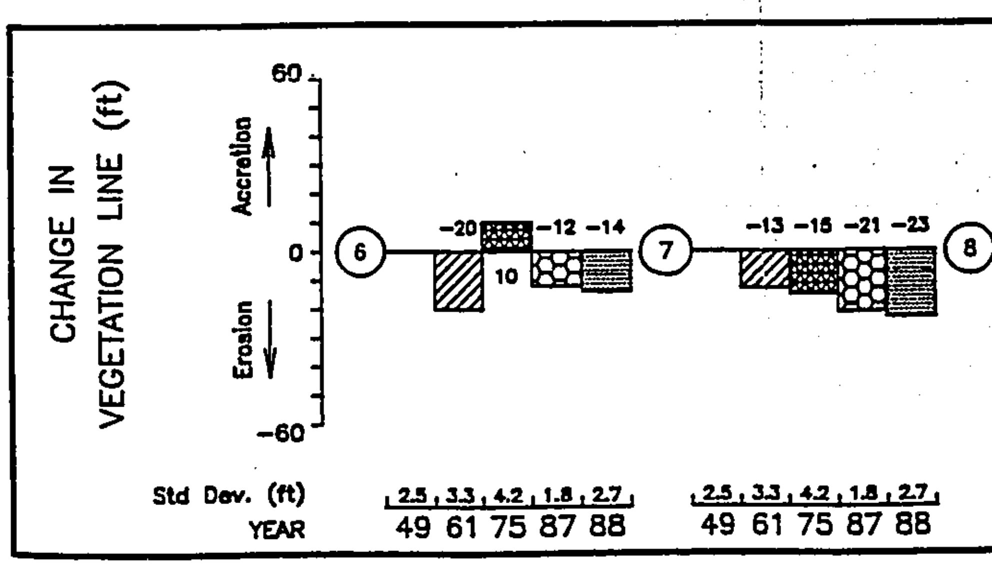
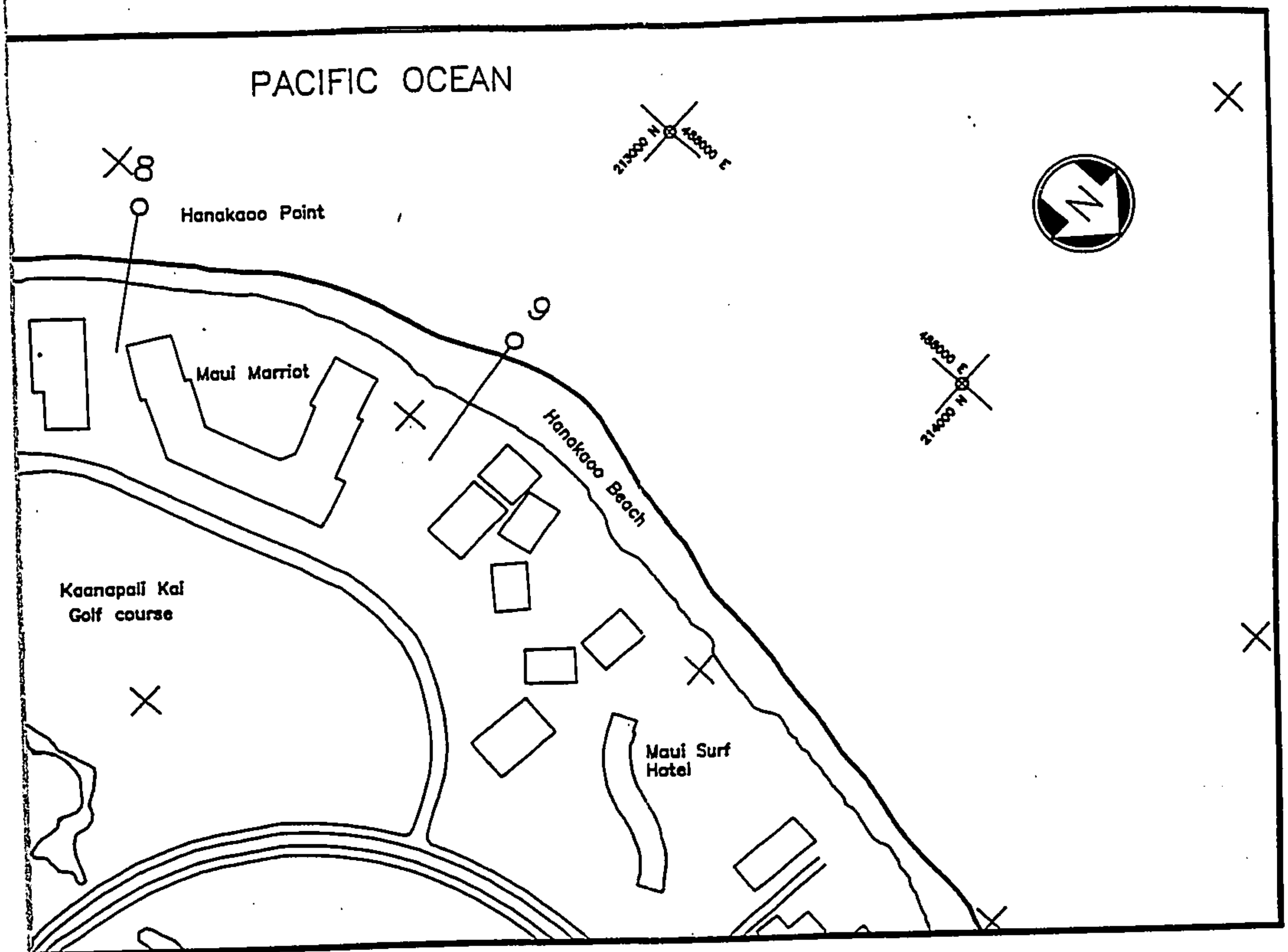


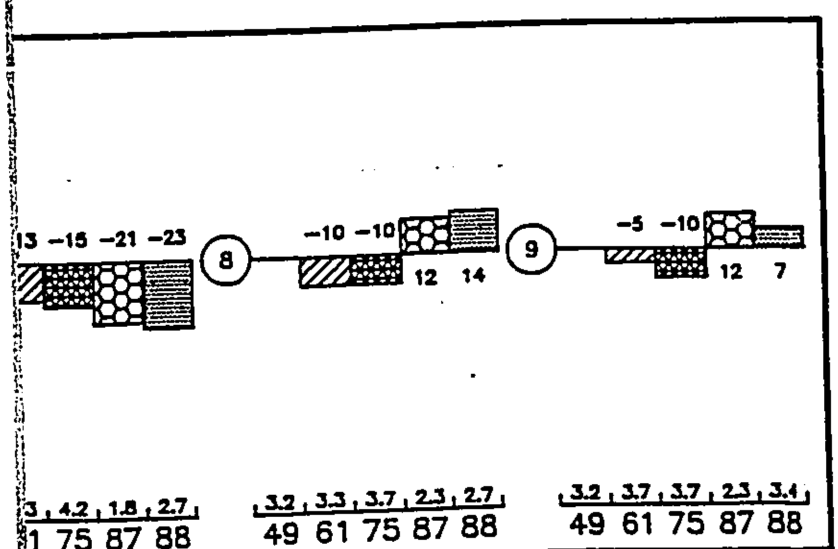
FIGURE 1. SUMMARY OF VEGETATIO



GRAPH **Region Number vs Char**



GETATION LINE CHANGES, 1949-1988



er vs Change in Vegetation Line

PHOTOS USED
November, 1949
December, 1961
March, 1975
July, 1987
March, 1988

Transect #	Maximum Range (ft.)	Max. Seaward From Present Position (ft.)	Max. Landward From Present Position (ft.)
8A	24	13	11
9	25	16	9

The maximum range of movement over the 49 year period is very similar for all three transects.

V PREDICTION OF FUTURE SHORELINE POSITION

The 1997 Beach Management Plan for Maui recommends that historical erosion rates be determined for an area and then used to project future erosion hazard areas. Historical erosion rates must be used for this type of projection, since future vegetation line positions cannot be determined on a cause and effect basis. Wave action that affects the vegetation line positively or adversely cannot be predicted in advance. A probabilistic model, the Markov Process, was therefore selected to calculate the probability distribution of future vegetation line positions. This model uses the historical data base for predictions of future vegetation line positions, and is the same as the one used for the 1991 study. This approach has also been used to predict future vegetation line positions at the Hyatt Regency Maui and the Ka`anapali Beach Hotel.

Several assumptions were made in constructing the model:

- That the behavior of the beach in any year is independent of the previous year's behavior. The model therefore ignores multi-year cyclic trends.
- That the relative changes in the vegetation line position are independent of its absolute position. In other words, the position of a vegetation line at the end of any year does not have any impact upon the next year's behavior. This assumption may not be applicable where the shoreline erodes to rock benches, where seawall have been constructed, or where onshore variations in sediment composition affect the erosion rate.
- That the past record of vegetation line changes are representative of what will occur over future years. This may or not be the case. The historical record reflects seasonal waves, Kona storms, the offshore passage of hurricanes and some tsunamis, but does not include the impact of predicted sea level rise.

The first step in calculating the 30 year probability distribution was to divide the historical record into two year periods to construct a histogram of vegetation line changes. The Markov Process is similar to a random walk through the data set, with the probability of occurrence of any single step equal to the frequency of occurrence of that size step in the data base histogram. Each step therefore represents a two year period.

Matrix calculations simulating thousands of random walks were then used to produce a 30 year probability curve, from which the mean predicted vegetation line and the standard deviation of the prediction could be determined. The mean prediction corresponds very closely to the average annual rate. The standard deviation reflects the variability of the results of the model calculations. Vegetation line positions subject to wide swings of erosion and accretion have large standard deviations and those with steady trends have smaller standard deviations.

The results of the model are presented with the transect data on Figure 2. For transect 8A, the one closest to the proposed project area, the predicted change of the vegetation line over a 30 year period is an erosion of 3 feet; the standard deviation of the prediction is 17. All three transects show a projected changes of 3 feet or less over the next 30 years.

Although the predicted changes are small, there will be fluctuations of the vegetation line about the mean positions, with the range of the fluctuations probably corresponding to those that have been observed in the past.

Questions have been raised about the effect of the landscaping of the hotel grounds on the analysis of the shoreline changes. The landscaping that occurred during the building of the hotels along the beach may have somewhat masked the naturally occurring shoreline variations. This original landscaping and ongoing maintenance might have the effect of stabilizing the vegetation line during mild conditions, but not during extreme erosion events. Severe erosive events would quickly cut back the vegetation line, as occurred at the Sheraton Maui in 1998. The aerial photographic analysis should therefore provide a reliable indicator of risk, as the 49 year record reflects several potentially erosive events due to Kona storms, El Nino events and offshore passage of hurricanes.

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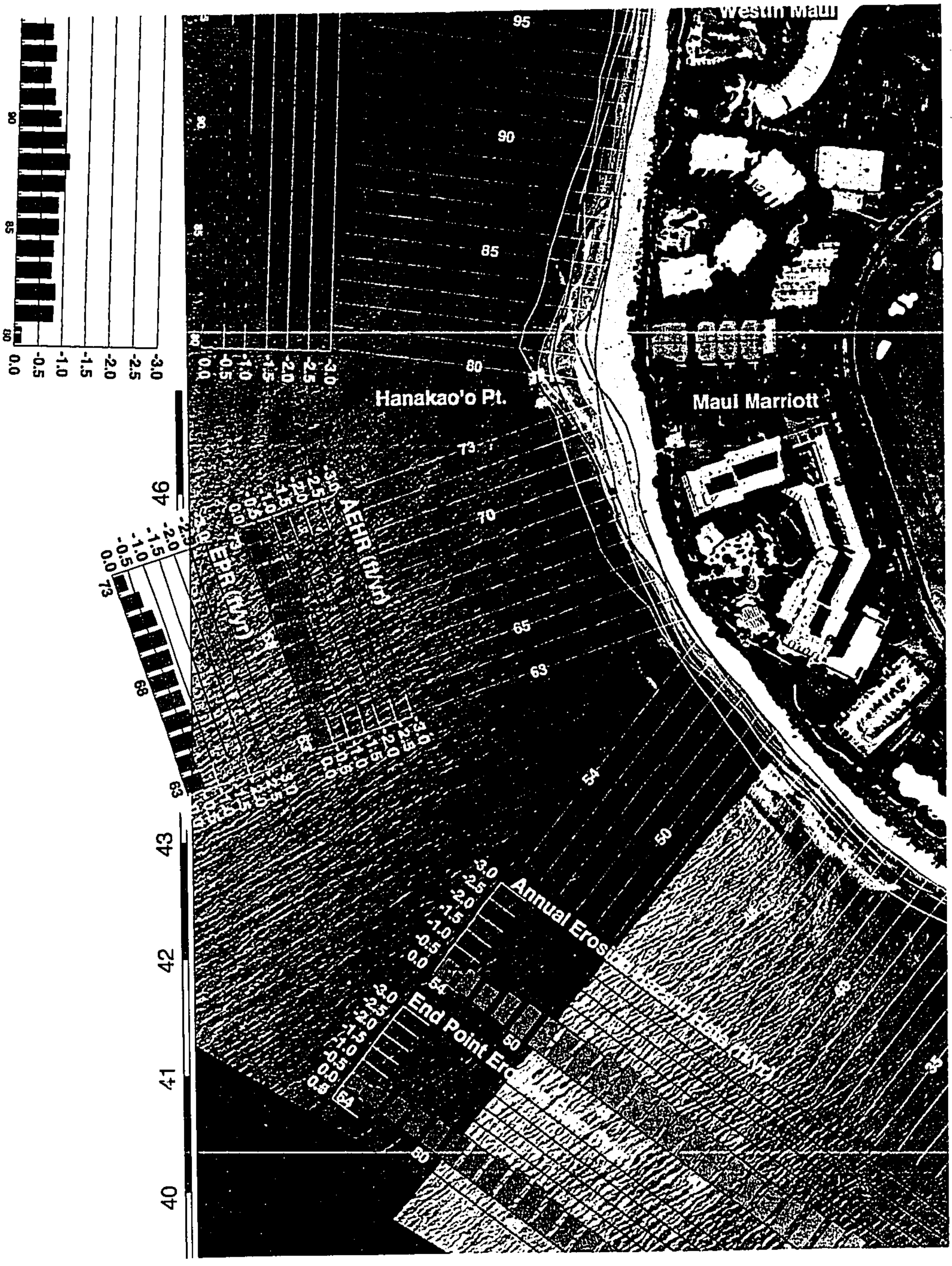
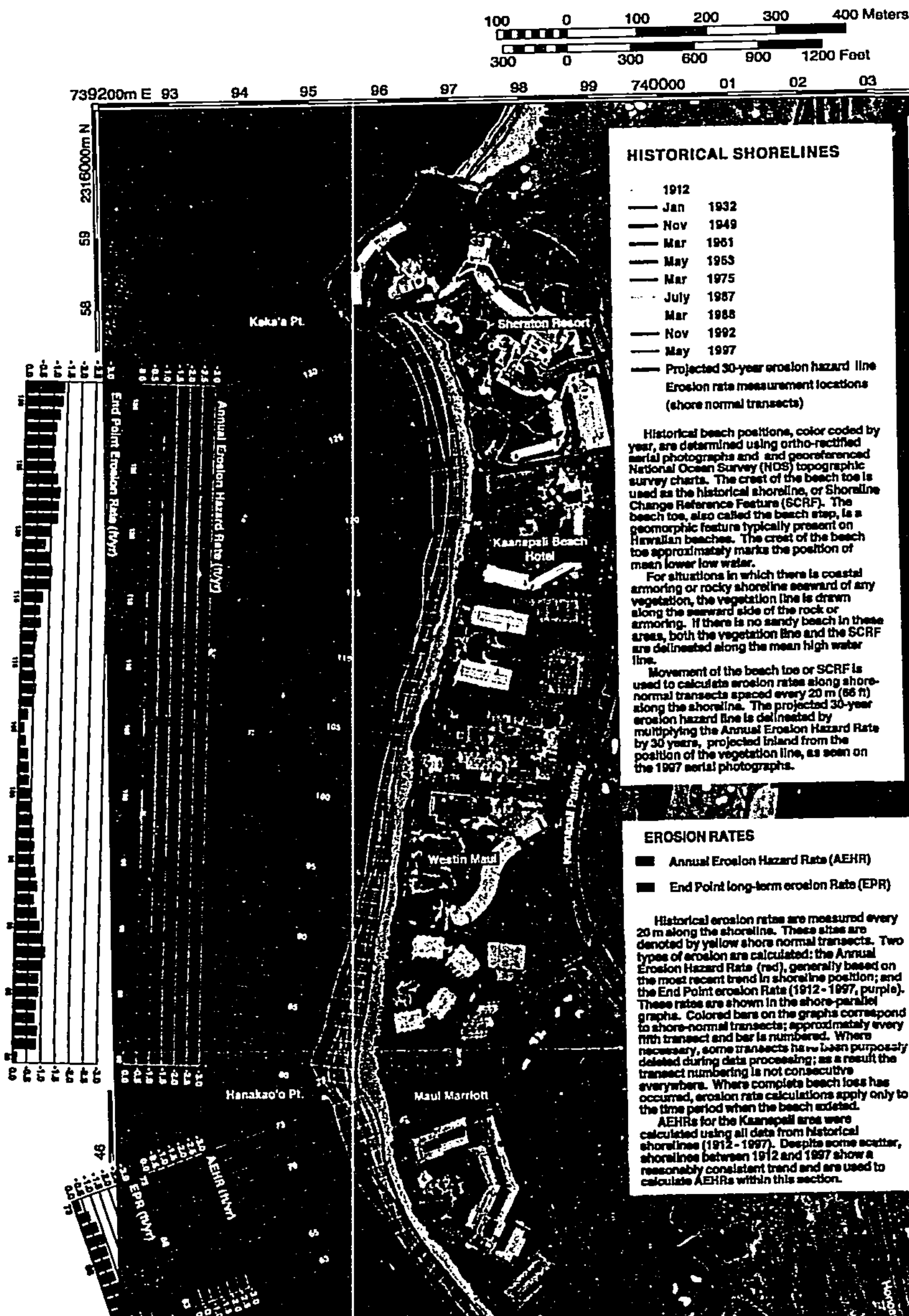
APPENDIX E
UH Coastal Erosion Map for Ka`anapali


Westin Maui
Maui Marriott
Hanakao'o Pt.
AEHR (ft/yr)
EPR (ft/yr)
Annual Eros
End Point Ero
40
41
42
43
46

Kaanapali, Maui, Hawaii



HISTORICAL SHORELINES

- 1912
- Jan 1932
- Nov 1949
- Mar 1951
- May 1953
- Mar 1975
- July 1987
- Mar 1988
- Nov 1992
- May 1997
- Projected 30-year erosion hazard line
- Erosion rate measurement locations (shore normal transects)

Historical beach positions, color coded by year, are determined using ortho-rectified aerial photographs and and georeferenced National Ocean Survey (NOS) topographic survey charts. The crest of the beach toe is used as the historical shoreline, or Shoreline Change Reference Feature (SCRF). The beach toe, also called the beach step, is a geomorphic feature typically present on Hawaiian beaches. The crest of the beach toe approximately marks the position of mean lower low water.

For situations in which there is coastal armoring or rocky shoreline seaward of any vegetation, the vegetation line is drawn along the seaward side of the rock or armoring. If there is no sandy beach in these areas, both the vegetation line and the SCRF are delineated along the mean high water line.

Movement of the beach toe or SCRF is used to calculate erosion rates along shore-normal transects spaced every 20 m (66 ft) along the shoreline. The projected 30-year erosion hazard line is delineated by multiplying the Annual Erosion Hazard Rate by 30 years, projected inland from the position of the vegetation line, as seen on the 1997 aerial photographs.

EROSION RATES

- Annual Erosion Hazard Rate (AEHR)
- End Point long-term erosion Rate (EPR)

Historical erosion rates are measured every 20 m along the shoreline. These sites are denoted by yellow shore normal transects. Two types of erosion are calculated: the Annual Erosion Hazard Rate (red), generally based on the most recent trend in shoreline position; and the End Point erosion Rate (1912 - 1997, purple). These rates are shown in the shore-parallel graphs. Colored bars on the graphs correspond to shore-normal transects; approximately every fifth transect and bar is numbered. Where necessary, some transects have been purposely deleted during data processing; as a result the transect numbering is not consecutive everywhere. Where complete beach loss has occurred, erosion rate calculations apply only to the time period when the beach existed.

AEHRs for the Kaanapali area were calculated using all data from historical shorelines (1912 - 1997). Despite some scatter, shorelines between 1912 and 1997 show a reasonably consistent trend and are used to calculate AEHRs within this section.

Kaanapali Beach is a highly developed resort area consisting of a 1.5 mile long continuous carbonate beach. The entire area has undergone a mean long-term erosion rate of ~1 ft/yr, with local variations. The area is bounded by Keka'a Point (Black Rock) to the north and Hanakao'o Beach Park, to the south. Kaanapali Beach can be split into northern and southern sections around Hanakao'o Point fronting the Maui Marriott tennis courts. The point itself has experienced mean long-term erosion of approximately of 1 ft/yr. This shoreline exhibits strong seasonal fluxes due to the change in dominate wave direction, with particularly large seasonal beach width changes (up to 195ft) observed at Hanakao'o Point.

The Kaanapali shoreline is generally characterized by moderate to fairly high erosion, with an overall mean long-term end point erosion rate of -0.89 ft/yr and an AEHR of -0.99 ± 0.4 ft/yr. Erosion rates have not been consistent over time however. Shoreline positions from different years tend to be scattered around the trend, suggesting that this is a dynamic coastline. Erosion (AEHR and EPR) is concentrated in the southern portion of the study area around Hanakao'o Beach Park. Significant erosion rates are also observed at Hanakao'o Point and at the Sheraton Resort adjoining Keka'a Point. The maximum AEHR (2.61 ± 0.77ft/yr) is observed at the southern end of Hanakao'o Beach Park while the shoreline fronting the Westin Maui is the only area without a significant AEHR (no net erosion). Our results ~(-1.0 ft/yr) generally agree with the -1.45 ft/yr average erosion rate for the Kaanapali area calculated by Sea Engineering, 1991*. The Sea Engineering results indicate a more dynamic pattern of erosion and accretion. This is likely due to their use of a different time series of photos and the use of the vegetation line rather than the toe of the beach as a reference feature of shoreline change.

End point rates reveal a similar trend as the AEHR, with the most pronounced erosion concentrated at the southern portion of the study area in Hanakao'o Beach Park. The EPRs also reveal that the shoreline at Hanakao'o Beach Park exhibits a bimodal long-term behavior. The southern half of the park has eroded at a mean of 2.1 ft/yr while the northern half of the beach fronting the stream mouth has accreted at a mean rate of 0.06 ft/yr. The area fronting the Hahakea steam mouth at Hanakao'o Park is the only segment of shoreline in this study area to exhibit long-term (EPR) accretion. This is likely due to the seasonal offset of the1932 shoreline, lack of any 1912 shoreline data in this area and littoral deposition by the stream. The extreme southern extent of the beach at Hanakao'o Park disappeared following hurricane Iniki in 1992 and is currently making a slow recovery.

Mean beach width, the average horizontal distance between the vegetation line and the crest of the beach toe, for the Kaanapali area has decreased significantly (29%) between 1949 and 1997. Hanakao'o Point exhibits the widest beach with a maximum mean beach width of 231 ft, followed by Hanakao'o Park and the beach fronting the Sheraton Resort (162 and 154 ft, respectfully). The narrowest mean beach width (48.2 ft) is observed along the shoreline fronting the Hyatt Regency, just north of Hanakao'o Park. Change in the mean beach width is calculated by taking the ratio of the 1997 mean to the 1949 mean beach width. The area south of Hanakao'o Beach Park has exhibited the largest change in mean beach width with a 65% loss. The area fronting the Westin Maui is the only segment of beach exhibiting a net increase in mean beach width with a 6% gain.

Seasonal uncertainty, (calculated as the mean of the seasonal beach width change of the entire study area from the summer of 1987 to the winter of 1988) is estimated to be ~45 ft. Seasonal uncertainty is most pronounced at Hanakao'o Beach Park, Hanakao'o Point and fronting the Kaanapali Beach Hotel, while the other areas fall significantly below the mean. The dynamic nature of the seasonal uncertainty plays an important part in estimating long-term beach loss for this study area and requires that interpretation of beach width be carried out with this non-uniform seasonal variation in mind.

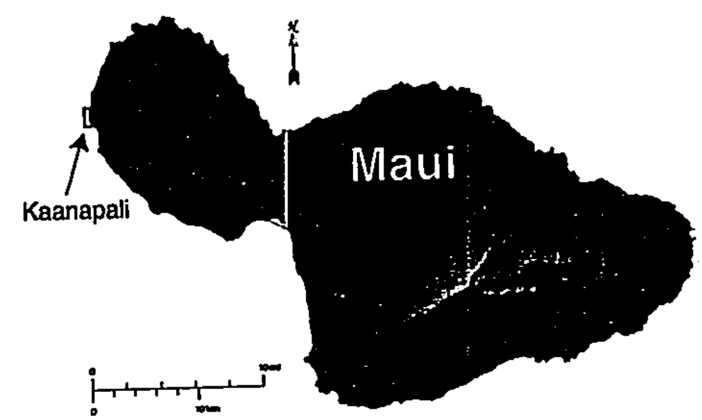
necessary, some transects have been purposely deleted during data processing; as a result the transect numbering is not consecutive everywhere. Where complete beach loss has occurred, erosion rate calculations apply only to the time period when the beach existed.

AEHRs for the Kaanapali area were calculated using all data from historical shorelines (1912 - 1997). Despite some scatter, shorelines between 1912 and 1997 show a reasonably consistent trend and are used to calculate AEHRs within this section.

... ratio of the 1997 mean to the 1949 mean beach width. The area south of Hanakao'o Beach Park has exhibited the largest change in mean beach width with a 65% loss. The area fronting the Westin Maui is the only segment of beach exhibiting a net increase in mean beach width with a 6% gain.

Seasonal uncertainty, (calculated as the mean of the seasonal beach width change of the entire study area from the summer of 1987 to the winter of 1988) is estimated to be ~45 ft. Seasonal uncertainty is most pronounced at Hanakao'o Beach Park, Hanakao'o Point and fronting the Kaanapali Beach Hotel, while the other areas fall significantly below the mean. The dynamic nature of the seasonal uncertainty plays an important part in estimating long-term beach loss for this study area and requires that interpretation of beach width be carried out with this non-uniform seasonal variation in mind.

* Makai Ocean Engineering and Sea Engineering, 1991 Aerial Photograph Analysis of Coastal Erosion on the Islands of Kauai, Molokai, Lanai, Maui and Hawaii. State of Hawaii Office of Planning Coastal Zone Management Program.



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APPENDIX F
Botanical Assessment Report

CHAR & ASSOCIATES
Botanical/Environmental Consultants
4471 Puu Panini Ave.
Honolulu, Hawaii 96816
(808) 734-7828

14 October 2002

Marriott Vacation Club International
c/o Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, Maui, Hawaii 96793-1706

Attention: Christopher L. Hart

SUBJECT Maui Ocean Club Sequel Project
Botanical (Flora) Resources Assessment

Dear Mr. Hart:

The project site consists of 15.4 acres (TMK 4-4-13: 01) located within the Ka'anapali Beach Resort. On the west, the property abuts Ka'anapali Beach at Hanaka'o'o Point. It is bound to the south by the Hyatt Regency Maui, to the north by the Ka'anapali Ali'i Condominium, and to the east by Nohea Kai Drive. Existing property development includes a 10-story building that contains the guestrooms, lobby, ballrooms and restaurants, and associated features including: parking lots, a parking garage, tennis courts, and a recently redeveloped pool and luau facilities.

The proposed sequel project will involve the demolition of the existing ballroom, parking structure and the luau area on the south end of the property; and the tennis courts, exercise facility, and most of the on-grade parking lot on the north end of the facility. A new timeshare building, identified as the Napili Building, will be located on the area of the tennis courts and surface parking area. A parking structure will be added mauka of the Napili Building. On the south side, a new timeshare building, identified as the Lahaina Building, will be located in the area of the existing parking structure; a new 5-story parking structure will be located mauka of the Lahaina Building. The area makai of both buildings will have a setback of 132 feet and will be landscaped with open, grassy lawns and coconut trees.

An assessment was made of the botanical resources on the two areas proposed for the new buildings and parking structures on 11 October 2002. The primary objectives of the site survey were to provide a general description of the vegetation on the site, search for threatened and endangered species as well as species of concern, and identify areas of potential environmental problems or concerns.

Description of the Vegetation: The plant names used in the following discussion follow St. John (1973) for the ornamental species and Wagner et al. (1990) and Wagner and Herbst (1999) for the naturalized species.

A number of palm species are planted on the Lahaina (south) side of the property. Areca or golden-fruited palm (Chrysalidocarpus lutescens) is the most commonly planted species and fronts Nohea Kai Drive and borders the beach right-of-way. Coconut palms (Cocos nucifera), 25 to 50 ft. tall, are found alongside the ballroom and the makai end of the parking structure. Other taller woody components include a few hala or pandanus trees (Pandanus tectorius), Singapore plumeria (Plumeria obtusa), travelers palm (Ravenala madagascariensis), weeping fig (Ficus benjamina), monkeypod (Samanea saman), hau (Hibiscus tiliaceus), and black palm (Normanbya normanbyi).

Hanging planters around the existing parking structure support purple bougainvillea (Bougainvillea spectabilis). Other frequently observed shrubs include a number of hybrid ti (Cordyline fruticosa), croton (Codiaeum variegatum) and Hibiscus cultivars, and Tahitian or tiare gardenia (Gardenia taitensis). Clumps of red ginger (Alpinia purpurata) and shell ginger (Alpinia zerumbet) as well as several Heliconia cultivars can also be found.

Ground cover consists primarily of laua'e or maile-scented fern (Phymatosorus scolopendria) with smaller plantings of wedelia (Sphagneticola trilobata), and dwarf Natal plum (Carissa macrocarpa).

On the Napili (north) side of the property, the tennis courts and parking lot dominate the landscape, so it is primarily asphalt pavement or the like. Monkeypod trees, 25 to 30 ft. tall, are planted in the parking lot. On the makai side is a row of areca palm, coconut, ti, and a ground cover of beach morning glory (Ipomoea pes-caprae). Around the tennis courts and excercise facility, there is a grassy lawn -- Bermuda grass (Cynodon dactylon) hybrid turf and plantings of a red-flowered plumeria (Plumeria rubra). Along the beach right-of-way are croton, Joannis palm (Veitchia joannis), natal plum, and black palm.

Discussion: The vegetation on the areas proposed for the sequel project are landscaped and maintained. A few native species such as beach morning glory, hau, beach naupaka (Scaevola sericea), and hala are found on the property, but these have all been planted there. All of these native species are indigenous, that is, they are native to Hawai'i and elsewhere. None of the plants observed on the property is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1999a, 1999b; Wagner et al. 1999).

In the schematic landscape planting plan as many of the existing specimen trees as possible will be transplanted and used to landscape the newly developed areas. A temporary nursery/holding area will be established to maintain the plants.

Given these findings, the proposed project is not expected to have a significant negative impact on the vegetation on the site, or in the general region. It is recommended that some of the smaller material, i. e., shrubs and ground cover, also be transplanted and reused in the new landscaping.

Please do not hesitate to contact me should you have any questions regarding this report.

Sincerely,

Winona P. Char

Winona P. Char

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APPENDIX G
Maui Coastal Scenic Resources Study (Selection)

MAUI COASTAL SCENIC RESOURCES STUDY

MAUI COASTAL SCENIC RESOURCES STUDY

Prepared for

County of Maui
PLANNING DEPARTMENT

by
Bruce Bebe, Glenn Hontz and Andrea Swanander of
ENVIRONMENTAL PLANNING ASSOCIATES INC.
PO Box 400
Kihei, Maui, Hawaii 96753
(808) 874-0911

August 31, 1990

The preparation of this study was financed in part by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration, United States Department of Commerce, through the Office of State Planning, State of Hawaii.

4.4 LAHAINA TO KAPALUA

This area is characterized by extensive resort development with most land mauka of Honoapiilani Highway in agriculture and most development occurring makai of the coastal highway. As a result, the remaining views of the West Maui Mountains and its several valleys dominate the attention for long stretches. In several areas, public beach parks have been developed that provide visual connection to the ocean. In other areas, where Honoapiilani Highway comes close to the shoreline, sweeping ocean vistas include the islands of Lanai and Molokai. Driving south along the highway past Kaanapali, Mala Wharf is visible from Wahikuli Park.

The Lahaina area is predominantly urban makai and agricultural mauka until Kaanapali. At the entrance to Kaanapali a golf course with a water feature provides visual relief. Continuing north, the area remains mostly urban resort, with some relief provided makai by the golf course, and occasional mauka views of sugar cane and pineapple fields fronting the West Maui Mountains. Where the ocean is visible, there are beautiful vistas of the islands of Lanai and Molokai, many boats moored offshore, and occasional whales breaching or spouting in season.

Between Kaanapali and Honokowai lies the former site of the Kaanapali Airstrip. This area is scheduled to be developed with several hotels in the near future. Significant views could be maintained from the highway if the proposed developments were planned properly.

Grouped hotel and condominium development occurs at Honokowai, Kahana, and Napili, with some noteworthy ocean views in between. This area is being rapidly developed with single and multi-family residential projects that tend to eliminate coastal views. Mauka views are good, with the area changing from sugar to pineapple fields fronting the West Maui Mountains at Honokowai. At Napili, the highway tends mauka, where it continues until Kapalua. The development makai of the highway is well hidden because of the slope of the land and the compatible colors and design of the buildings; however, the actual shoreline is not visible. North of the entrance to Kapalua the highway again opens to an excellent view of Honolua Bay and the island of Molokai.

4.4.1 VISUAL RESOURCES: LAHAINA TO KAPALUA

COASTAL LAND FORMS	DISTINCTIVE	NOTEWORTHY
Mala Wharf from Wahikuli Park to Fleming Road		●
Hanakaoo Point-Fleming Road to Wahikuli Park		●
Lipoa Point at Honolua Bay-Kapalua entrance to Fleming Beach	●	
COASTAL VIEWS	**DISTINCTIVE**	**NOTEWORTHY**
Wahikuli-Fleming Road to Kaanapali/Hanakaoo Park	●	
Lanai–PuaMana Park		●
Molokai from Honokowai, Kahana, Napili and Kapalua		●
Kaanapali- across golf course north of 2nd entrance to Kaanapali		●
MAUKA VIEWS	**DISTINCTIVE**	**NOTEWORTHY**
West Maui Mountains-Puamana to Lahainaluna, Kahoma Stream,		
Honokowai to Kapalua.	●	
IMPORTANT OPEN SPACES	**DISTINCTIVE**	**NOTEWORTHY**
Cane Fields		●
Wahikuli Park 1, 2 and 3 and Hanakaoo Beach Park	●	
Kaanapali Golf Course just north of second entrance to Kaanapali		●
Old Kaanapali Airport		●
SITES OF NATURAL BEAUTY	**DISTINCTIVE**	**NOTEWORTHY**
Beach - Black Rock to Old Kaanapali Airstrip		●

MAP LEGEND
8.1.6 LAHAINA — KAANAPALI


OPEN SPACES


MAUKA VIEWS


AREA OF SCENIC BEAUTY


COASTAL VIEW


COASTAL LAND FORM

5. RECOMMENDATIONS

The following recommendations have been compiled in two ways:

1. Recommendations gleaned from the CZM legal framework (Federal CZMA, HCZM, SMAs, General Plan, etc.)

2. Conditions observed during field work.

A recommended revision of the SMA boundary is presented first. General recommendations are then presented which apply to all of Maui and specifically to the three target areas. Then specific recommendations are listed by target area and organized into three categories:

1. The natural environment

2. The constructed environment

3. Landscaping

5.1 SMA BOUNDARIES

The SMA boundaries were studied to determine if any changes were necessary. It is recommended that the SMA boundary be relocated in the Wailuku - Paia area to include agricultural lands between Hana Highway and the Kahului Airport from Dairy Road to Stable Road in Spreckleсville. Development in this area would affect coastal view resources, particularly the view towards the West Maui Mountains from Hana Highway.

5.2 GENERAL RECOMMENDATIONS

The following general recommendations can be applied to the entire island of Maui to enhance and preserve the island's scenic and open space resources.

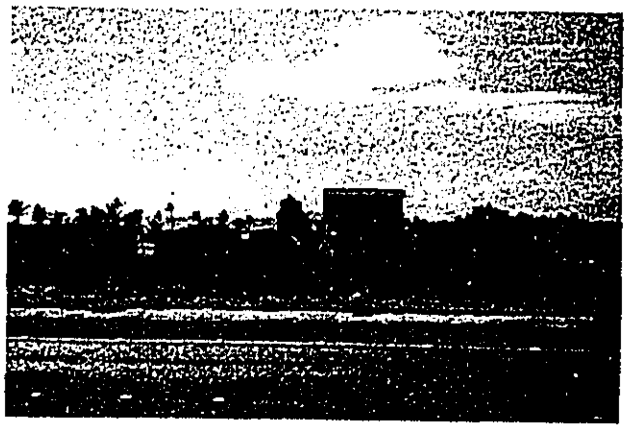
1. Obtain a thorough knowledge of the regulatory network and its overall intent as outlined in the design manual of this study.

2. Apply this study to the proposed SMA development projects as follows:

   A. Investigate developments on a specific property from the point of view of existing scenic resources, and take into account the preservation and protection of these resources.

   B. Review the Principles of Design and the Guidelines in Chapter 6, and apply them to the development proposal in question.

3. Design buildings to run mauka-makai where buildings built parallel to the highway would block coastal views.



4. Walls which obscure visual resources are discouraged. Design landscaping to soften their impact in places where walls are deemed necessary.

5. Locate new utility lines underground where they impact visual resources. See specific recommendations for each area.

6. Plant open parking facilities with canopy trees to produce shaded parking areas. Landscape parking perimeters to enhance the visual image along the street.

7. Maintain agricultural lands as a major scenic resource and open space element. Recognize the scenic contributions of agriculture when evaluating proposed developments.

8. Preserve the shoreline sand dune formations.

9. Landscape stream channels and drainage ways in lieu of concrete channelization.

10. Design proposed State and County Parks appropriately to enhance visual resources and preserve open space.

11. Maintain an open space system of parks, utility easements, shoreline areas, and drainage ways as a framework for the built environment.

12. A large percentage of open space should be incorporated into future development plans.

13. Require appropriate landscaping along major travel routes. "Appropriate" landscaping, meaning varieties of trees and shrubs that serve the desired purpose without blocking views. For example, false wiliwili along the cane fields provide a windbreak but block some good mauka views.

5.3 WAILUKU TO PAIA

1. The Natural Environment

   A. Protect Kanaha wetlands as important visual and open space resources.

2. The Constructed Environment

   A. Future development be compatible in scale relationships to existing low-scale town character.

   B. Require sufficient spacing between higher buildings in order to preserve mauka-makai views.

   C. Where urban development is allowed, sensitively design taller buildings to take into account potential scenic views and desired town character.

   D. Visually maintain and enhance the low-density town character of Paia town.

E. Relocate utility poles and lines underground:

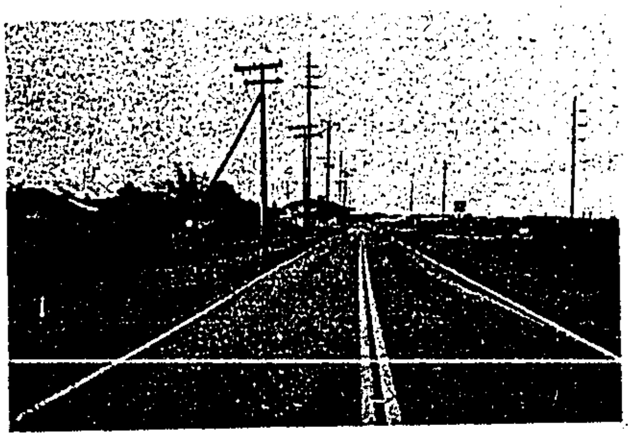
1. Along Kaahumanu Avenue.

2. Hana Highway from Dairy Road to Haleakala Highway be put underground or relocated to the airport side of Hana Highway.

3. Landscaping

A. Landscape the corridor from Kahului Airport to Wailuku Town with appropriate plantings and in such a manner so as to preserve existing views.

B. Appropriately landscape Dairy Road from Haleakala Highway to Puunene Avenue.



C. Develop a landscape plan for Kahului Harbor that beautifies the area and is sensitive to the makai view potential.

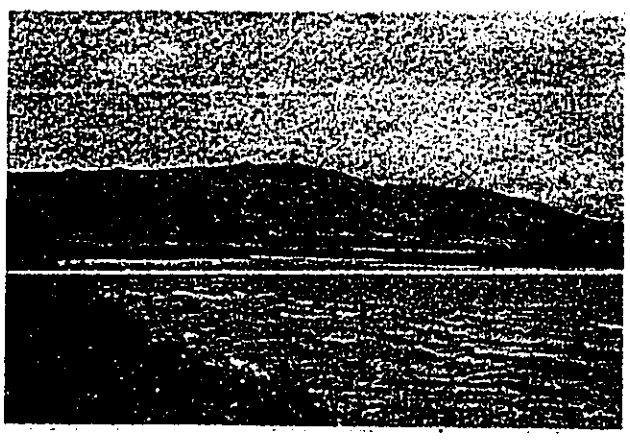
D. Landscape the campground at Baldwin Park with windbreak trees and screen plantings along that portion of Hana Highway.

E. More appropriately landscape the Spreckelsville Wall to lessen its harsh impact on the scenic environment.

5.4 MAALAEA TO MAKENA

1. The Natural Environment

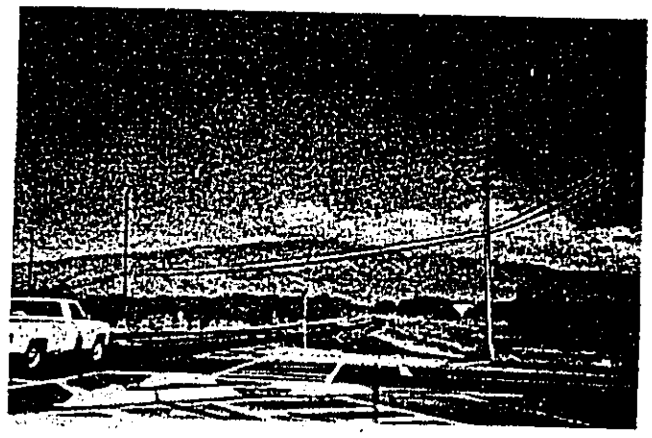
A. Protect wetland and open space resources both mauka and makai of North Kihei Road at Kealia Pond.



B. Protect what is left of the existing wetlands in Kihei Town to preserve open space.

2. The Constructed Environment

A. Relocate existing utility lines underground where they cross Piilani Highway twice near the intersection of Uwapo Road.



3. Landscaping

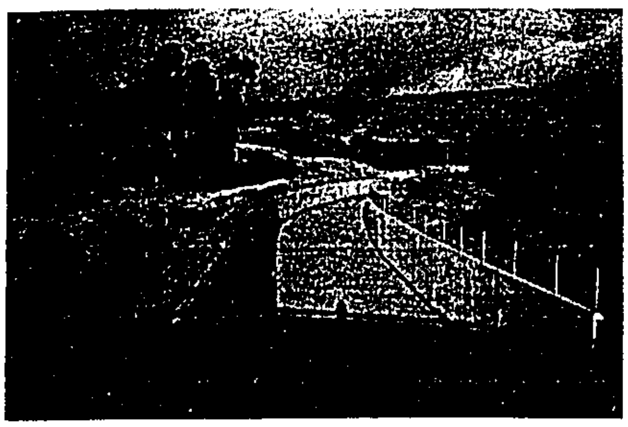
A. Develop South Kihei Road to "parkway" standards.

B. Provide landscaped buffer areas between Piilani Highway and adjacent communities to mitigate noise and to reduce the visual impact of development through appropriate landscaping to preserve existing views.

5.5 LAHAINA TO KAPALUA

1. The Natural Environment

   A. Appropriately landscape natural drainage ways in lieu of concrete channelization for open space visual relief. Examples of violation of this principle are Kahoma Stream and Honokowai stream which have recently been channelized. Specific drainage channels this principle applies to are: Wahikuli Gulch, Mahinahina Gulch, Kahana Stream, Kaopala Gulch, Honokeana Stream and Napili Stream.



   B. Appropriately landscape the cemetery at Honokahoo to improve scenic beauty.

2. The Constructed Environment

   A. Existing power lines be put underground, especially within Lahaina town.

3. Landscaping

   A. Appropriately landscape the strip of land at sewage pumping station Lahaina side of Wahikuli Park No. 3.

B. Heavily landscape the drainage ways that have already been channelized at Kahoma stream and Honokowai stream to mitigate some of the visual impact.

5.6 CONCLUSION

Scenic and open space resources can be preserved and enhanced by applying the methods outlined in this study to aid in harmonizing the built and natural environments. Landscaping is a major part of enhancing the scenic environment of an area and softening the impact of the built environment.

CHAPTER

6

SCENIC RESOURCES DESIGN MANUAL

6. SCENIC RESOURCES DESIGN MANUAL

This Chapter was prepared for use by Maui County officials in establishing and implementing design standards for the County's special management areas. The Manual is also intended to provide guidance to those seeking County approval for developments in the Special Management Area.

6.1 INTRODUCTION

The Manual provides a set of basic design principles, a statement of underlying values and a list of practical guidelines. Additionally, it includes a summary of the relevant portions of the regulatory network. In combination, these provide a clear basis for managing Maui's coastal scenic resources. Each of these components is discussed in greater detail below.

6.2 PRINCIPLES OF DESIGN

The principles of design presented here are intended for use in connection with the evaluation of natural and man-made features found in the target areas addressed in this study. The application of such design principles in evaluating the aesthetic quality of any subject is strongly influenced by our underlying values. Accordingly, values are also examined in this report as a factor in evaluation. Finally, to provide a transition from the theoretical premises of design to the realistic application of these elements, a list of practical guidelines is provided regarding: green belts and open space buffers, avoiding major visual intrusion, site plan configuration, building design and height limitations, roof appendages, establishing flexible setback standards, enhancing viewpoints, enhancing view corridors, landscape treatments, traffic, parking, utilities, night lighting, signs, pedestrian orientation, encouraging community involvement and community plan recommendations.

These principles, values and guidelines are applied to each of the three target areas of this study for the purposes of:

1. evaluating the resources in each of these areas and;

2. creating recommendations for preserving, protecting and/or restoring these resources. Examples are offered in the following section to illustrate the relevance between these principles and their application in practical settings. Additionally, various graphic, photographic and descriptive elements are included here and in Chapters 4 and 5 to enhance understanding and clarity.

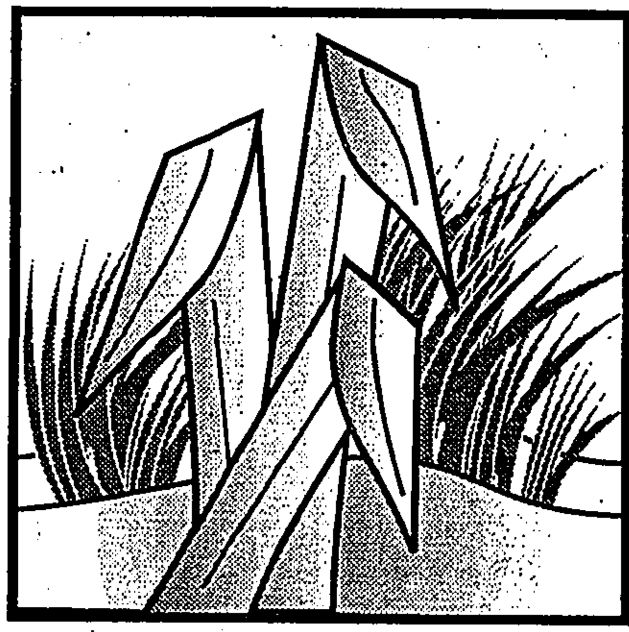
These principles are drawn from a variety of sources but primarily from the work of Duane and Sarah Preble and their book entitled Artforms (Harper & Row, New York, 1989) which has been adopted as a text for art and design courses in over 300 colleges and universities throughout the United States. Professor Preble, who teaches in the Department of Art at the University of Hawaii at Manoa, provided direct personal consultation in the selection and preparation of the design principles presented in this report.

The following design principles are intended to provide a basis for:

- Comparative evaluations of existing visual coastal resources
- Planning and guiding developments to insure visual results of high quality
- Evaluating proposed projects in the SMA to determine how they affect scenic resources
- Creating means for enhancing, protecting and preserving scenic resources

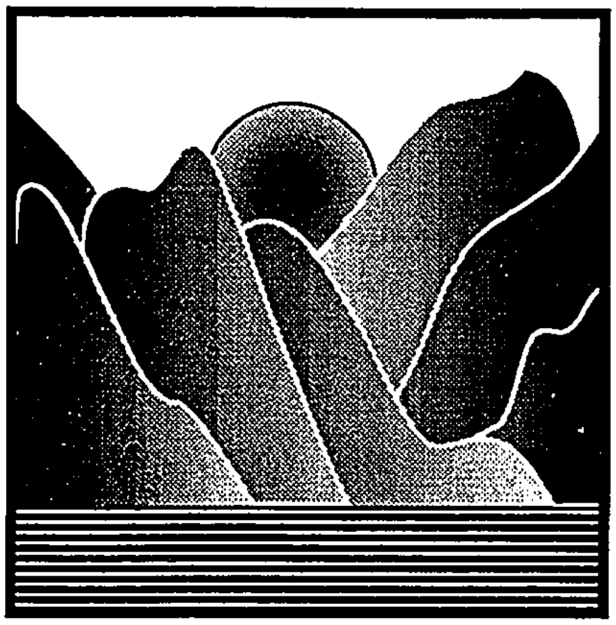
When the design principles are used in conjunction with the guidelines offered in this Manual a theoretical and practical basis for scenic resources management is established.

THE DESIGN PRINCIPLES:



1. SCALE AND PROPORTION

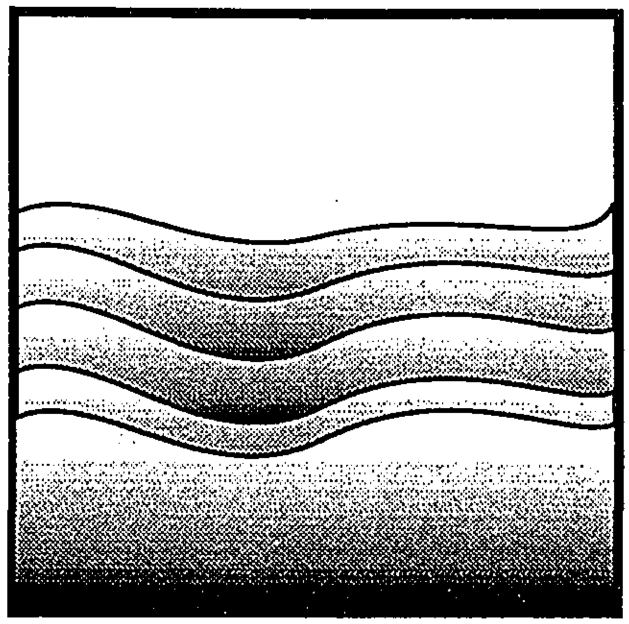
Both relate to size. Scale refers to the size of an object seen in relation to other objects. Proportion is the size relationship of parts to a whole and to one another. We tend to see only in terms of relationships (a small familiar object helps us to perceive the size of a larger unfamiliar object, etc.) The concept of proportion has been a key element in design since the era of the Greeks (i.e. the harmonic proportion as reflected in the Parthenon). Although style has changed since this era, our underlying sense of proportion has remained the same. There seems to be universal agreement regarding this principle.



2. UNITY AND VARIETY

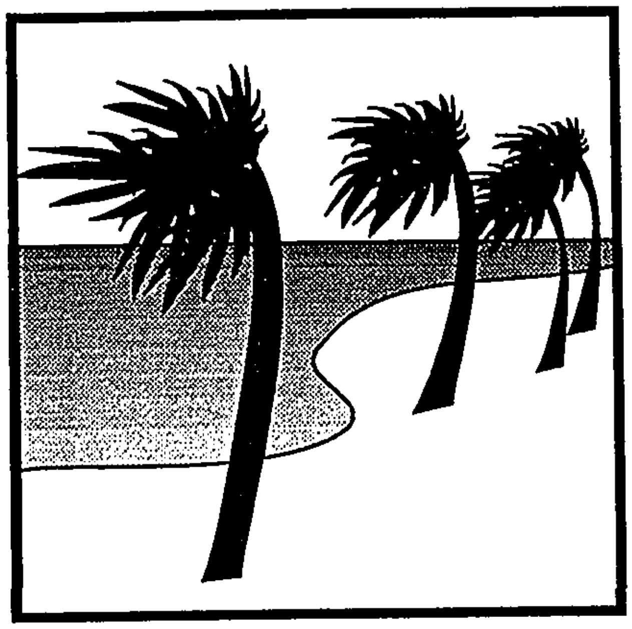
Unity is achieved through the integration of varied elements causing them to appear as parts of a whole form. Unity is the appearance or condition of oneness, usually brought about by a single motivating process or idea. When unity is present, there is integrity — the work affects us as complete in itself — a homogeneous, inseparable whole to which nothing can be added or taken away without a loss of quality.

Variety is diversity; but without unity, it is confusion. Unity results in part from similarity of visual characteristics, while variety is provided by dissimilar properties. The dynamic balance between the boredom of too much uniformity and the chaos of uncontrolled variety creates continuity, vitality and interest in both art and life.



3. REPETITION AND RHYTHM

The recurrence of a design element provides continuity, flow and dramatic emphasis. Repetition may be exact or varied, and it may establish a regular or irregular beat. Visual rhythm, like audible rhythm, operates when there is ordered repetition. Rhythm may simply be repetitive. It may provide variations on a basic theme, or it may indicate a progressive development.

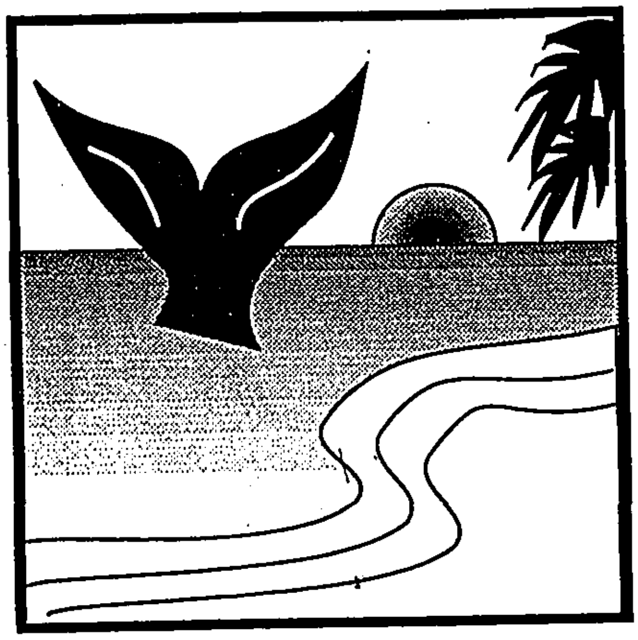


4. BALANCE

Balance is the achievement of equilibrium. Lack of balance is contrary to our sense of order and need for stability. The two basic types of balance are: symmetrical (or axial balance as achieved by equal distribution of identical or very similar parts on either side of a central axis) and asymmetrical balance (or informal balance as achieved when a felt or implied center of gravity brings opposing or dissimilar elements into equilibrium).

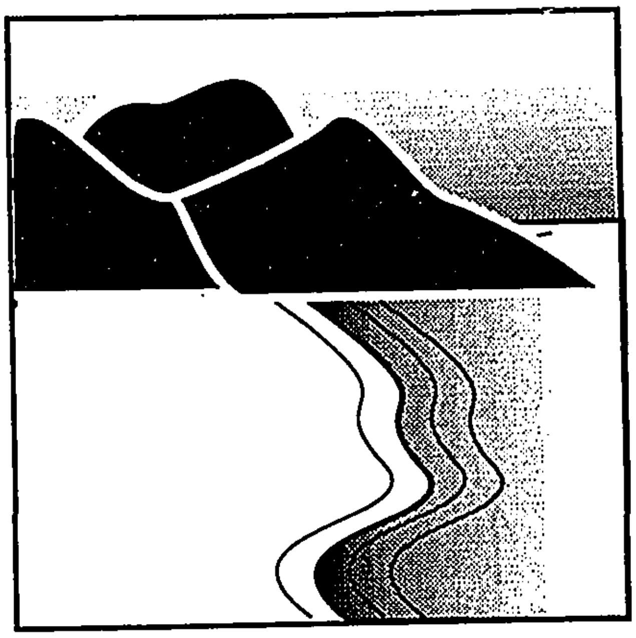
5. DIRECTIONAL FORCES

Implied or actual lines produce directional lines or forces which determine the basic structure of a work or scene. Implied lines are those we feel, rather than see. They may be suggested by the imagined connection between similar or related adjacent forms, or by the implied continuation from the ends of actual lines. An implied line may also be the unseen axis line that indicates the dominant direction of a single form. (As we look at a work of art or a scene, our eyes tend to follow both implied and actual directional lines.)



6. EMPHASIS AND SUBORDINATION

Emphasis of certain features and subordination of others creates centers of interest that focus the viewer's attention.



7. CONTRAST

Contrast is the interaction of elements that express the dualities seen in opposites such as large and small, light and dark, simple and complex. Color contrasts are seen in a variety of ways according to variations in hue, intensity and value. Up to a point, such contrasts serve to emphasize certain features and provide visual interest.

Within each specific context the interaction of these design principles results in what we consider a "good" or "bad" design. Often only a few of these principles are present in a "good" design. A "bad" design usually results when one or more of these principles are violated.

Achieving an understanding of design principles and learning to apply them effectively is not a matter of "formulas" or "rules" but rather a process of both training and experience by which one develops a personal sense of "good design."

6.3 VALUES

Personal and social values are underlying and often hidden factors that determine how we actually apply principles of design in evaluating the aesthetic quality of any subject or view. When these values are made clear, they serve to expand our understanding of the basis upon which a visual resource is evaluated.

Numerous elements combine to produce the value which a viewer assigns to any scene. For example, as one views a valley stream on Maui the various elements comprising this scene would include the water, the rocks, the trees and other plants, the terrain, the background, the sky, etc. When all of these elements are compatible, they each contribute in their subtle way to the intrinsic sense of place (i.e. in this case "a Maui valley stream"). If any of the elements are incongruous (for example a concrete drainage way would be inappropriate in this natural scene) the integrity of the scene is diminished and the aesthetic value is reduced; the sense of place is compromised.

Although this quality of "sense of place" is subtle, and often difficult to define, it is the integrating force in any natural scene and is the force which expresses the character of that scene. It can be achieved and maintained consciously or unconsciously in human-modified or human-dominated settings.

Maui's unique sense of place stems from its character as a Hawaiian island community. This quality is maintained and can be enhanced when man-made features give emphasis to an "island life style" and display a respect for the history and environmental uniqueness of the island. Features which seem most compatible with Maui's "sense of place" would include: buildings that reflect design features of the Hawaiian and other Pacific peoples; pathways that encourage walking as a means of access; plantings which emphasize native tropical flora; beaches that are natural and uncluttered, with buildings set far back from the shoreline, thus reflecting respect for the unpredictable power of the sea, and providing for the traditional right of public access and usage. In general, major areas of the coast would be protected from the intrusion of the technological culture and preserved for the enjoyment of residents and visitors alike in the manner of the local culture. Man made features which are incongruous with this sense of place would be avoided.

Unfortunately, some of the features expressed in Maui's coastal developments in recent decades have not reflected the island's intrinsic "sense of place." This is understandable because the planning principles and approaches of mainland development are well established, seemingly successful and familiar to those investors who are promoting major commercial enterprises in Hawaii. Accordingly, even those developments which have sought to reflect a "Hawaiian character" have often been overshadowed by the grandiose "world class" approach. This approach seems to produce structures similar to those that can be found in any major city anywhere. If this trend continues, Maui will not only lose its unique character and "sense of place" but will be indistinguishable from Manhattan or Tokyo.

Now that planning on Maui has matured, we are able to deal with these problems by expressing what is in fact appropriate for Maui.

The values underlying many of the recommendations of this report support developments which are "island scale," that is ones which are small, low profile and dispersed. Additionally, these recommendations are intended to encourage renovation and re-development in a manner compatible with the integrity of island-style living.

Two major features that contribute to Maui's unique quality are its coastal and mountain views. These features are an integral part of Maui's sense of place and represent a valuable aesthetic resource to be preserved. Accordingly, developments should be tied to these features in their orientation and should be compatible with these features in their design. Man-made features which are created with the clear intention of enhancing the natural environment that they occupy can contribute significantly to our visual appreciation of that environment.

6.4 GUIDELINES

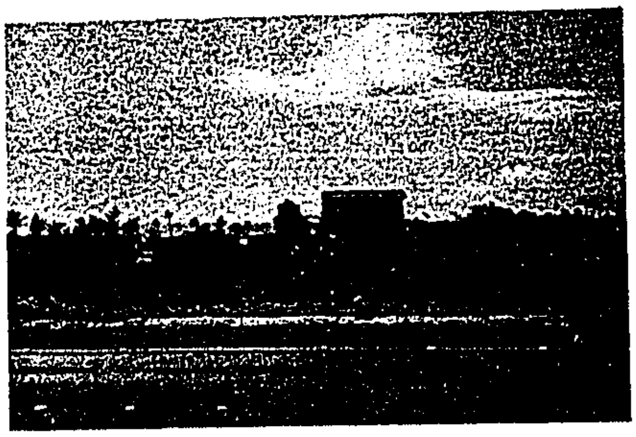
The following guidelines are offered as reference points for use in evaluating proposed developments in the coastal management zone.

GREENBELTS AND OPEN SPACE BUFFERS

Maintain or provide for greenbelt or open space buffers between sectors of non-similar land use (i.e. keep residential areas separate from commercial in this manner, to provide transition from one type of area to another.) These greenbelt/open space areas may additionally provide supplementary recreational lands or park facilities and can serve as drainage ways during periods of high rainfall, storm waves or tsunami activity.

AVOIDING MAJOR VISUAL INTRUSION

Maui is an island on which the residents have a strong visual relationship with the mountains and the sea. Thus, developments should be designed to avoid "walling-off" ocean or mountain views; there are always acceptable alternatives. The recommended approach is to insist that developments for both urban and rural areas restrict the degree of visual obstruction. Such restrictions should be greater in rural areas, the same principle of "honoring the view for all" should also be observed in urban design. Establishing hard and fast policies in this matter is not only difficult but tends to restrict creative approaches. In contrast, it seems desirable to maintain a clear understanding of the general principle, and to insist that it be observed both in new developments and in redevelopment projects.



SITE PLAN CONFIGURATION

The arrangement of various features in the site plan of any development in the coastal zone should reflect an awareness of the desirability of creating appropriate view planes from within and from outside the site. For example, any one building should not unnecessarily obstruct the view from another. Collectively, the buildings and landscaping features of the site should enhance the view from outside the site. Additionally, running buildings mauka-makai instead of across the view plane would be an example of the application of this guideline. When appropriate approaches are used, the site plan often creates inviting view corridors or provides a foreground framing of a significant natural view in the background.

BUILDING DESIGN AND HEIGHT LIMITATIONS

The overall features of building design, size, shape, height and other qualities should be required to reflect a consistency with their natural setting. Although height limitations may vary depending upon the particular location, no structure should be permitted to block or substantially obscure significant coastal or mountain vistas from places or points of common public view. Clustering buildings to create open spaces and "crenelating" or varying the roof profiles are examples of this guideline.

ROOF APPENDAGES

Roof appendages (i.e. stairway or elevator towers, air conditioning units, ventilation equipment, etc.) should be screened from view or integrated into the design of the roof structure (rather than as a "box on top").

ESTABLISH FLEXIBLE SET-BACK STANDARDS

Because actual coastal conditions and existing man-made features vary, it is difficult to establish arbitrary set-back standards. However, in general it is clear that deeper set-backs are more consistent with the spirit of preserving Maui's coastal view resources. Accordingly, the requirement of deeper set-backs should be applied to most new developments. A graduated, four-step set-back concept should be encouraged to include:

1. a natural terrain corridor along the ocean front,
2. a landscaped belt which is consistent with the natural sector and provides a transition to the next corridor,
3. then a corridor in which the structures not exceed one story and finally;
4. a sector in which higher structures may be allowed.

ENHANCING VIEW POINTS

Small landscaped plazas, mini-parks, shaded walkways and similar features enhance the coastal zone in both residential and commercial areas. Street tree plantings and other beautification programs are encouraged. Preservation of existing trees is a high priority. If removal is necessary, relocation or replacement in alternative locations should be required. Sidewalk features and textures enhance the overall consistency of the area. Fixed benches, picnic tables, shaded lanais and other open-air features in appropriate locations allow enjoyment of the coastal landscape.

ENHANCING VIEW CORRIDORS

Buildings and clusters of buildings and their related landscaping features should be designed to enhance the view corridor and to facilitate visual access to both coastal and mountain features. This should be accomplished by height limitations, building size/scale, set-back requirements, landscaping, plan configurations and other measures which respect the integrity of the view and the sense of place in its relationship to the ocean and mountains. Abrupt differences in scale, changes in level, color or shape should be avoided.

LANDSCAPE TREATMENTS

Landscaping should connect the structure to the environment which it occupies. Effective landscaping softens the impact of manmade features and integrates these with their surroundings. The use of endemic species is especially recommended for these purposes. Roof plantings, large window boxes and other interior or exterior planters can be used to achieve a desirable connection to and integration with the natural surroundings. A general rule that no building be taller than a palm tree serves to soften the impact of the built environment.

TRAFFIC

Developments should be avoided which would adversely affect traffic in areas that are currently free from congestion (i.e. existing commercial districts which are already appropriate in scale). Additionally, as opportunities occur for future renovation or urban re-design in areas currently experiencing congestion, approaches should be encouraged which will reduce traffic and parking problems in these areas. The basic concept is to encourage the preservation of "human scale" commercial and residential districts and to avoid "sprawl" and "strip commercialism" as a pattern of growth. The concept of planned unit development (such as project districts) offers an approach which can be utilized to contain or to redesign various residential or commercial areas to a more human scale. Such planned development also offers the opportunity to create new residential communities or commercial facilities rather than expanding existing ones beyond an acceptable scale. Alternative means of access to shoreline features should also be encouraged.

PARKING

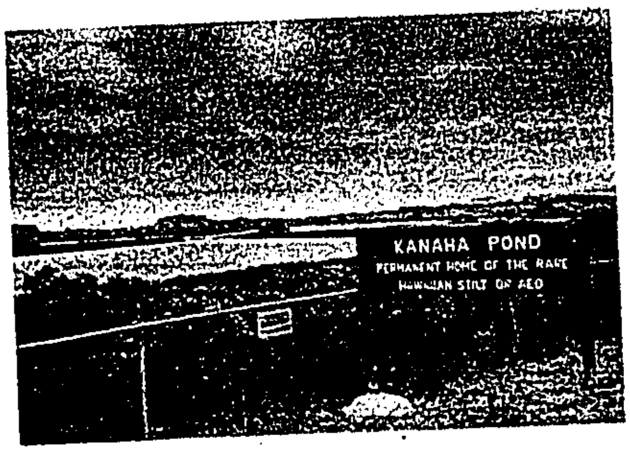
Parking facilities should be designed (and/or redesigned) to be unobtrusive parts of the landscape through canopy and peripheral screening, landscaping, plantings and any other measures that make them as attractive as possible. Off-street parking in front of commercial buildings or shops should be discouraged. Parking should be designed to go behind buildings or to other lower visibility areas. Relocating street parking when possible, wherever it intrudes upon the coastal view is recommended.

UTILITIES

Utility lines should be placed underground whenever possible. This is especially important in historic areas, such as Lahaina, where community character predates the development of utility lines. Incongruous structures such as pump stations, utility yards and buildings can be made more acceptable by approaches such as painting or plantings designed to blend with other features of the region.

NIGHT LIGHTING

Selective night-lighting can be used to enhance the quality of the visual experience in certain coastal areas. Lighted ocean-front walkways, trees, coastal features, foundation plantings and other attractive natural and man-made features can add significantly to the night-time enjoyment of Maui's coastline, especially in areas which are recreational in nature. Similarly, the absence of lighting can be a planned feature to enhance the enjoyment of the night-time sky. In situations where lighting is necessary, the sensitive design of such lighting (i.e. low lighting, limited directions, etc.) can serve to minimize its impact on neighboring areas.



SIGNS

Use informational signs to enhance the visual experience (i.e. signs which describe historical, cultural and environmental features). Such informational signs not only contribute to public education and enjoyment but also increase public support for programs to preserve scenic resources. Similarly, avoid signs which intrude into the space of a significant view.

PEDESTRIAN ORIENTATION

Give emphasis to a pedestrian orientation to scenic views in shoreline areas. This method of mobility affords the greatest appreciation of coastal resources. It does not preclude the provision of attractive vistas from the highway, but a casual walk along a beach side pathway is often more personally rewarding than experiencing this same view from a moving vehicle.

ENCOURAGING COMMUNITY INVOLVEMENT

Develop cooperative efforts with neighborhood organizations and environmental groups to participate in special "clean-up" and beautification campaigns. The Community Work Day Program is a successful example of such a program and exhibits the enthusiasm of the community to participate in such programs. Encourage other such programs as "adopt-an-access" and "adopt-a-park" as a means of increasing public understanding and support. Promoting the general sense of "stewardship" for Maui's coastal scenic resources on the part of individuals, groups and even visitors will pay rich dividends in such areas as expanded public support, curtailment of vandalism and reduced maintenance costs.

6.5 REGULATORY REQUIREMENTS

The regulatory requirements pertaining to Maui's coastal visual resources are very direct and straightforward. They provide the legal basis for implementing and enforcing sound approaches to environmental management of Maui's coast. Each portion of the network is interconnected and, in combination, they are mutually supportive. These regulations provide planners and developers with a set of powerful tools to create coastal developments which are environmentally appropriate.

Planners and developers will benefit from a thorough and detailed review of each document in the regulatory network. For purposes of this Manual the key elements of these documents and their applicability to scenic and open space resources are summarized below. (These documents are available in their complete form from appropriate governmental agencies on the Federal, State and County levels.)

6.5.1 FEDERAL COASTAL ZONE MANAGEMENT ACT OF 1972

The Coastal Zone Management Act was originally passed by the U.S. Congress in 1972. It encourages the individual states to develop Coastal Zone Management programs consistent with Federal policy, but specific and appropriate to their particular location. The Act promotes a balance between coastal dependent development and environmental protection. It also provides assistance to the states in developing individual coastal zone management programs consistent with the national policy. Broad guidelines and requirements were established urging the states to:

1. Identify and evaluate coastal resources that require management or protection, and accordingly.

    - Determine specific uses and special geographic areas that are to be subject to the management program.

    - Establish the uses of these resources on the basis of resource capability and suitability analysis, socio-economic considerations and public preferences.

2. Protect the special natural and scenic characteristics that are being damaged by ill-planned development.

    - Give full consideration to the aesthetic values of coastal resources.

    - States may obtain assistance in the redevelopment of aesthetic coastal features.

3. Reexamine existing policies and/or develop

new policies to manage these resources.

- Policies must be specific, comprehensive and enforceable.

- Policies should provide an adequate degree of predictability as to how coastal resources will be managed.

4. Provide for the consideration of the national interest in the planning for and siting of facilities that meet more than local requirements.

The Federal CZMA is the enabling act for the Hawaii State Coastal Zone Management Act (HCZMA), which, in turn is the enabling legislation for the Special Management Areas (SMA) rules and regulations.

6.5.2 HAWAII COASTAL ZONE MANAGEMENT ACT OF 1978

(Act 188, SLH 1977; Ch. 205A, HRS as amended)

The Hawaii Coastal Zone Management Act (HCZMA) was passed in 1977 by the Hawaii State Legislature and establishes the Office of State Planning as the lead agency in carrying out the provisions of the act. It also provides for the involvement of the State Land Use Commission, Department of Agriculture, Department of Business and Economic Development, Department of Health, Office of Environmental Quality Control, Department of Transportation, Department of Land and Natural Resources, and the County governments.

The HCZMA establishes basic state policy to guide State agencies and County government in the area of coastal zone management. This act establishes specific objectives and policies for:

1. Provision and protection of recreational opportunities

2. Protection and restoration of historic resources

3. Improvement of scenic and open-space resources

4. Protection of coastal ecosystems

5. Provision for coastal-dependent economic uses

6. Reduction of coastal hazards

7. Improvement of the review process involving development activities, including permit coordination and opportunities for public participation

Under the authority of the HCZMA, Counties were required to amend their Special Management Areas (SMA's) to include the foregoing policies and objectives.

In terms of Hawaii's scenic and open space, the HCZMA is intended to;

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

Accordingly, this legislation establishes the following policies:

1. Identify valued scenic resources in the coastal zone management area.
2. Insure that new developments are compatible with their visual environment by designing and locating developments to minimize the alteration of natural land forms and existing public views to and along the shoreline.
3. Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources.
4. Encourage developments which are not coastal dependent to locate inland.

The HCZMA adopted the existing Special Management Area (SMA) framework as the main vehicle for administering and enforcing these policies on a local level. The Counties were required to amend their SMA Rules and Regulations to become consistent with the objectives and policies of the act.

6.5.3 SPECIAL MANAGEMENT AREA RULES AND REGULATIONS

The Special Management Area Rules and Regulations of the County of Maui (SMA) were originally passed by the County Council in 1975. The Maui Planning Commission is established as the authority to carry out the intent of these rules and regulations in the target areas of this study.

The SMA Rules and Regulations encompass the objectives, policies and guidelines of the Federal and State Coastal Zone Management Policy, and are the main vehicle for enforcement of the State and Federal Acts.

The purpose of the SMA is "to preserve, protect and where possible, restore the natural resources of the coastal zone of Hawaii. The rules and regulations in this article implement the State policy by establishing special controls on development within the areas along the shoreline so as to avoid the permanent loss of valuable resources and the foreclosure of land use and management options...."

The SMA does not specifically impact other legislation, but is used concurrently with the Shoreline Setback Ordinance, Zoning Ordinance, Maui General Plan and the Community Plans.

The SMA requires each Planning Commission, as the responsible authority, to:

- Identify valued scenic resources in the coastal zone management area.
- Insure that new developments are compatible with their visual environment by designing and locating developments to minimize the alteration of natural land forms and existing public views to and along the shoreline.
- Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources.
- Encourage developments which are not coastal dependent to locate inland.

The SMA Rules further state: "Alterations to existing land forms and vegetation ...and construction of structures shall cause minimum adverse effect to ...scenic and recreational amenities." They further direct that the Planning Commission "shall seek to minimize where reasonable any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast, or from existing public views to and along the shoreline."

6.5.4 SHORELINE SETBACK RULES AND REGULATIONS

The Shoreline Setback Rules and Regulations (SSR&Rs) were passed in 1970 by the County Council and establish the Planning Commission as the authority for management.

The SSR&Rs were established in response to the increasing demands and pressures upon Maui's shoreline. They hold that uncontrolled massing of buildings is contrary to the preservation of the natural shoreline, that unrestricted mining or depositing of unnatural materials near the shoreline deteriorates the natural environment and that tsunamis and other high wave action endanger structures built too close to the shoreline. For these reasons, it was declared in the best interest of the public to establish shoreline setbacks, and to regulate uses along the shoreline.

The SSR&Rs do not directly impact other legislation, but are used concurrently with the SMA, Zoning Ordinance, General and Community Plans to make decisions regarding land use and building permits.

The SSR&Rs seek to:

- Preserve the natural shoreline environment.
- To prevent uncontrolled massing of buildings and structures along the shoreline.
- Require that landscape developments en-

hance the natural shoreline character through the addition of trees, shrubs or ground-cover and by selected trimming and pruning of existing vegetation, and by the construction of unpaved walkways and other similar treatments as may be permitted by the Director upon finding that such activity, in accordance with submitted plans, will not substantially alter the character of the existing shoreline.

- Prevent the granting of any variance unless appropriate conditions are imposed to minimize adverse impacts on public views to, from and along the shoreline.

6.5.5 MAUI COUNTY GENERAL PLAN

The Maui County General Plan, originally passed by the County Council in 1980, establishes that all agencies of the County of Maui shall be guided in their official acts, decisions and program planning by this General Plan.

The Maui County General Plan was written with the understanding that the preservation of the land is also the key to preserving the quality of life on Maui, and also with a recognition of the need for improvement, growth, change, social evolution and for the harmonious integration of all segments of the community. Such factors as land ownership, agriculture, resort development, industry and commercial land uses are addressed, with the intent of bringing about a balance between these various sectors of the community.

The General Plan is a guide to which all community plans, zoning ordinances, subdivision ordinances and administrative actions by county agencies shall conform. The following excerpts from the General Plan illustrate its impact on the various factors of community development which are relevant to the coastal scenic resources.

LAND USE

- Guide land use development patterns so that they sympathize with natural topographic features, eliminate as much as possible environmental hazards and enhance scenic amenities, without depleting natural resources.
- Promote land use in accordance with the individual character of the various communities and regions of the County.

ENVIRONMENT

- Preserve for ourselves, our children and our children's children the opportunity to experience the natural beauty of our islands.
- Encourage the preservation of scenic vistas.
- Establish programs to beautify both public and private facilities.

- Evaluate all land based development relative to its impact on the ocean environment and ecology.

VISITOR INDUSTRY

- Locate buildings to retain scenic vistas.
- Encourage the preservation of open beach space by maximizing the use of lands presently classified urban for visitor facilities and severely limit rezoning of other lands to visitor industry use.
- Promote water, beach and open space conservation in areas devoted to services for visitors.

URBAN DESIGN

- To see that all developments are well designed and are in harmony with their surroundings.
- Establish urban design guidelines and standards which will meet our unique local needs.
- Encourage the creation of distinctive community identity in both new and existing developments.
- Prepare and support appropriate urban design principles, standards and guidelines.

TRANSPORTATION

- Encourage landscape planting programs along all public highways and rights of way.

HUMAN SERVICES

- Accelerate the expansion and upgrading of Maui County's beach access facilities.

6.5.6 WAILUKU-KAHULUI COMMUNITY PLAN

The Wailuku-Kahului Community Plan was passed by the Maui County Council in 1987. It is intended to provide a detailed plan for implementing the Maui General Plan objectives and policies in the Wailuku-Kahului area. In particular, it establishes a basis for determining how future growth should be accommodated. It also discusses means to deal with impacts of growth on agricultural resources, preservation of rural and agricultural communities, availability and prices of housing, and the revitalization needs of Wailuku Town.

Concern was expressed regarding the visual quality of the community, especially in terms of the lack of street trees, and the cluttered visual image of the entry road to Wailuku and Kahului from the airport.

The desire for community character was also expressed, along with a desire for enhanced public services, improved infrastructure, improved circulation and protection of the community's visual and natural resources.

The Wailuku-Kahului Community Plan provided recommendations as follows:

1. Preserve agricultural lands as a major element of open space.

2. Protect shoreline wetland resources and flood plain areas.

3. Preserve shoreline sand dune formations.

4. Maintain the State Conservation District Boundary, with the exception of Waihee, where boundary changes should reflect shoreline environmental resources. (Boundary changes are required for wetland resources, topographic features, and shoreline open space.) No other changes are anticipated for regional conservation needs over the 20 year planning period.

5. The low-rise character of the central business area should be maintained. Higher building forms up to six stories should be sited in the central portions of commercial blocks.

6. Building heights along the perimeter of commercial blocks should provide a transition in scale to adjacent public and quasi-public uses.

7. Commercial uses along the perimeters of central business area blocks should be low-rise and provide sufficient setbacks to allow landscaped buffers along street frontages.

8. A coordinated landscape theme should be established from the airport to Kahului, with landscape buffers established along Keolani place, Hana Highway, and Kaahumanu Avenue.

9. Landscaping along Dairy Road between Keolani Place and Puunene Avenue should be established and coordinated with the landscaping of the airport-Kahului roadway approach route.

10. A parkway character should be established along Kaahumanu Avenue from Kahului to Wailuku.

11. Open parking areas should be landscaped to provide visual screening and shade.

12. The perimeters of the central business area blocks should provide landscape buffers as part of a coordinated landscape theme to enhance their visual image.

13. The mature landscape character of Kahului Shopping Center should be preserved and incorporated into future development plans.

14. The landscape treatment along streets within the central business area should be extended along major collector roads serving adjacent residential neighborhoods, including Puunene, Kamehameha and Lono Avenues.

15. Building heights for the hotel designated district fronting the ocean side of Kaahumanu Avenue range from six to ten stories in order to provide a dynamic skyline and identifiable hotel district.

16. Establish a second golf course at Waiehu with adequate provisions for continued shoreline recreation.

17. Consider changes in land use district boundaries and Conservation type land uses (i.e. expanded at Waihee) to protect important shoreline resources.

18. Design guidelines to address needed improvements to vehicular and pedestrian circulation patterns; landscaping to improve the area's visual image and provide pleasant open spaces for passive recreation; and building form guidelines for compatible building relationships.

6.5.7 PAIA-HAIKU COMMUNITY PLAN

The Paia-Haiku Community Plan was passed in 1983 by the Maui County Council and provides a detailed plan for implementing the Maui General Plan objectives and policies. The Paia-Haiku Community Plan shows that Paia-Haiku residents value such social qualities as the friendliness and multi-ethnic "small town" atmosphere of their community and also value such environmental qualities as clean air, coastal waters and the pastoral landscape. The plan also identifies problems in such areas as public safety, education, water, land use, transportation, liquid and solid waste, housing, urban design, recreation and culture.

The Paia-Haiku Community Plan also calls for protection of the shoreline and other natural features, control and avoidance of erosion, flooding and water pollution.

Among the recommendations included in the plan are the following:

1. Preserve the shoreline sand dune formations throughout the planning region.

2. Maintain the current State Conservation District boundary except for Hookipa, Maliko and Pauwela Point.

3. The subdivision ordinance should be revised to provide for public review of projects with significant impacts. Subdivision approval should consider environmental, economic, and social impacts of the project including impacts on archaeological, historic and cultural resources.

4. Enhance the ocean orientation of the Lower Paia business area by establishing open space view corridors to the ocean and a passive ocean oriented park in the context of the Paia Town Plan.

5. Limit building heights to two stories or 30 feet above grade throughout the region, with the exception of the heavy industrial

use area where buildings may exceed this height, subject to design review by the County.

6. Establish design control standards for special treatment areas in the commercial use areas of Paia Town and Haiku based on the following guidelines:

   A. Visually maintain and enhance the low-density town character.

   B. Encourage future development which is compatible with the desired scale and character.

   C. Maintain the attractiveness of Paia and Haiku towns.

7. Provide landscape buffering along the makai side of the proposed by-pass road and along the makai and mauka edges of the heavy industrial use area.

8. Provide landscaped areas at the two points where the proposed by-pass meets Hana Highway, to define an attractive entry to the expanded urbanized area of Paia Town.

9. Design improvements should be undertaken in a coordinated fashion so as to ensure compatibility of future development projects with the desired character and should be an on-going activity. Road improvements for drainage, lighting, and safety should be coordinated with the maintenance of the existing rural informal streetscapes, which provide character identification of Paia and Haiku Towns.

10. Insure management of the shoreline to result in the implementation of a drainage master plan, soil and water management techniques, retention of the region's natural open space and agricultural character to provide for wildlife, recreation and ecological study.

6.5.8 KIHEI-MAKENA COMMUNITY PLAN

The Kihei-Makena Community Plan was passed by the Maui County Council in 1985. It is intended to provide a detailed plan for implementing the objectives and policies of the Maui General Plan in the Kihei-Makena area. Issues addressed include land use, circulation, drainage and flood control, shoreline resources and human support services. Basic planning standards and principles are defined concerning the quality of the built environment, housing choices, protection of environmental quality and physical resources. The Kihei-Makena Community Plan notes that planning creates opportunities to satisfy future needs, to achieve desired community character, to maintain nearshore and shoreline environmental quality and to preserve social harmony.

Recommendations in the plan include:

1. Update zoning to enhance the image of this area as a low-rise, low density shoreline community and to deal with issues such as excessive densities, building heights and aesthetic deficiencies.

2. Control the quality of the built environment to insure spacious, well-ordered neighborhoods, adequate setbacks, landscaping and building massing and height controls.

3. Integrate future planning and design with concepts of public shoreline use and sound principles of resource management.

4. Maintain the long-term availability of shoreline resources for public enjoyment through the implementation of management programs, adequate access, space, and facility provisions, and through on-going resource management programs.

5. Require that new shoreline development respect shoreline resources such as existing dune formations and indigenous or endemic strand vegetation.

6. A survey of natural and cultural resources in shoreline areas should precede development activity.

7. Establish open space provisions and recreational amenities in public shoreline areas to maintain the quality of shoreline resources.

8. Protect wetland resources at Kealia Pond, which is an important open space and wildlife habitat resource.

9. Maintain State Conservation District Boundaries.

10. Establish an open space system of parks, utility easements, shoreline areas, and drainage ways as an open space framework for the built environment.

11. Maintain and preserve the following:

    - Makena-La Perouse State Park
    - Kamaole Beach Parks
    - Kalama Park
    - The public shoreline system
    - Proposed park makai of Kealia Pond
    - 15-acre park adjacent to Kihei Elementary School
    - Proposed park adjacent to school site at Wailea I
    - North of the Makena Surf Condominium
    - At least a minimum ten-acre beach park in Project District 8
    - Approximate 17-acre park adjacent to Project District 8

12. Protect and preserve wilderness areas, beach reserves, scenic areas and historic sites, open ranges, watersheds, conserve fish & wildlife and promote forestry and grazing.

13. Limit development on certain urban & non-urban open spaces to include, but not be limited to shoreline buffer areas, landscape buffers, drainage ways, view planes, flood plains, and tsunami areas.

14. Parking facilities should be planted with canopy trees to produce shaded parking areas. Parking perimeters should be landscaped to enhance the visual image along the street.

15. Landscape buffer areas between Piilani Highway and adjacent communities to mitigate noise and reduce the visual impact of development.

16. Landscaped setbacks should be implemented for future multi-family and commercial areas. Larger developments should provide space for landscaped pedestrian ways.

17. Encourage one to two story building heights for new commercial facilities, three stories maximum.

18. Encourage two to three story building heights with a maximum of three for multi-family development. Lower building heights should be required along South Kihei Road and in transition zones between multiple and single family uses where maximum heights should be kept to one to two stories.

19. All new multi-family and commercial facilities should provide a garden setting. Setback requirements should be sufficient to allow for street and sidewalk landscape buffers and interior planting areas.

20. Resort development should observe six story maximum height. Resort community planning and design should continue to integrate recreational amenities with adequate shoreline setback and public access.

21. Industrial uses should observe maximum three story building heights. Within large industrial tracts, buildings along the perimeter should be restricted to two stories, and separate industrial design guidelines should be formulated to guide development. Such guidelines should address landscaping and building design to achieve design continuity for the overall industrial development area.

22. Hotel front yard setbacks should be the height of the building or a minimum of 20 feet, whichever is greater.

23. Where business adjoins any differing use (except industrial), landscaped buffer zones including trees and shrubbery should be

incorporated into required setbacks.

24. The minimum shoreline setbacks for other uses shall be the height of the building or 40 feet, whichever is greater. These requirements should increase with development scale and density.

25. Establish landscaping along major local travel routes to aid in orientation and to emphasize mauka-makai views. Particular attention should be given to South Kihei Road, and important cross streets. This provision will assist in establishing a street hierarchy and soften the effects of the built environment.

26. Improve undeveloped public shoreline lands for public recreational use.

27. Improve public access to shoreline and nearshore resources through the following measures:

    A. Provide adequate landscaped public access to shoreline areas with significant recreational and scenic value.

    B. Wherever possible, require setbacks to include recreational space on lands behind the legally defined public shoreline zone.

    C. Provide setback areas with landscaping to enhance recreational use and scenic quality.

28. Visually enhance the experience along public thoroughfares and gathering places.

29. Protect nearshore, sand dune, and wetland resources to ensure their continuance as important open space elements, and to preserve their natural resource values.

30. Utilize street trees to beautify the region, soften adverse effects of the built environment, and generate community spirit.

6.5.9 LAHAINA COMMUNITY PLAN

The Lahaina Community Plan was passed by the Maui County Council in 1983. It is intended to provide a detailed plan for implementing the General Plan objectives and policies. Some specific priorities of the Lahaina district are as follows: affordable housing, population distribution and density, agricultural concerns, traffic, water, sewage treatment, air and water quality, recreational facilities and the need for a more diversified economic base to include more "clean" industries. Planning opportunities within the region concern the resolution of residential and agricultural needs, the achievement of desired resident lifestyles, the provision of adequate economic opportunities, and the management of natural and recreational resources for public enjoyment.

The recommendations of the Lahaina Community Plan include:

1. Protect plantation agriculture as an important economic activity which also provides most of the "green" backdrop important for the region's atmosphere and its marketability to visitors.

2. Balance satisfaction of human needs with the maintenance of environmental quality. The protection of open space, improvements to water supply and quality, respect for landscape characteristics, improvements to sewage treatment and the maintenance of natural resources for public enjoyment are important.

3. Develop and adopt a drainage master plan emphasizing land management techniques such as natural landscaping.

4. Integrate stream channels and gulches into the region's open space system for the purposes of safety, open space relief, and visual separation between communities. Drainage channels should not be considered for Kahoma Stream, Wahikuli Gulch, Honokowai Gulch, Mahinahina Gulch, Kahana Stream, Kaopala Gulch, Honokeana Stream and Napili Stream.

5. Preserve the shoreline and nearshore environments throughout the planning region as significant natural elements which should be protected from any adverse development actions.

6. Preserve the shoreline sand dune formations throughout the planning region. These topographic features are a significant element of the natural setting and should be protected from any actions which would detract from their scenic value.

7. Use State Conservation land to protect and preserve wilderness areas, beach reserves, scenic areas and historic sites, open ranges, and watersheds; to conserve fish and wildlife; and to promote forestry and grazing.

8. Establish and maintain parks, public and private spaces, public facilities, cemeteries, major travel routes, and public shoreline areas within an organizing framework for the town.

9. Street and area lighting, historic preservation, restoration, landscaping and other public improvements.

10. Landscaping should buffer public and quasi-public facilities and light-heavy industrial facilities from adjacent uses.

11. Buildings within the Lahaina Town Special Design District should comply with the building height requirements. Design features should reflect the prevalent town themes, materials, signs, landscaping and pedestrian amenities and the installation of underground utilities should also be taken into account.

12. Provide landscaping along major local

streets in Lahaina Town to enhance the street level walking and driving experience, to aid in orientation, and to emphasize mauka-makai views. Particular attention should be given to Wainee Street and to the five mauka-makai streets giving access to Honoapiilani Highway. Landscaping should soften the effects of the built environment, provide a sense of place within town, and establish a hierarchy of streets.

13. Ensure that renovation and new buildings within the Lahaina Town Core are compatible with the Lahaina Town scale and character, public thoroughfares and gathering places are visually enhanced and establish an improvement district for the preservation/enhancement of sidewalks/streets, landscaping, parking and urban open space.

14. Street landscaping should be coordinated with design and implementation of urban open spaces to promote design continuity.

6.5.10 COMPREHENSIVE ZONING ORDINANCE OF MAUI (DRAFT)

The following is a summary of the pertinent points in a draft proposal for Amendments to "The Comprehensive Zoning Ordinance for the County of Maui."

This ordinance would serve to establish amended zoning requirements and to implement the zoning recommended in the community plans as open space.

Open Space "use is intended to limit development on certain urban and non-urban designated lands which may be inappropriate for intensive development due to environmental, physical, or scenic constraints; this could include but not be limited to shoreline buffer areas, landscape buffers, natural areas, drainage ways, view planes, floodplains, and tsunami areas. Appropriate urban and non-urban uses may be allowed on a permit basis."

The general purpose of establishing open space zoning districts is to preserve and maintain land for open space use, to preserve and protect lands that are environmentally sensitive, to provide visual relief and buffering from building and structural mass, to protect view planes, and to provide open areas adjacent to and contiguous to existing urban areas for future urban development. The open space zoning districts are meant to provide reasonable standards to implement the community plans and state land use laws for areas that are designated open space in the community plan, which are in essence, those state lands that are in the state rural, agricultural and urban land use districts.

It is proposed to divide the Open Space districts into two categories:

1. OS-1 Open Space Districts which seeks to protect environmentally sensitive lands such as but not limited to wetlands, swamp, gully, coulee or natural drainage courses; land subject to flooding or is unstable and

land unsuitable in its natural state for development. Only limited uses shall be permitted in the OS-1 district.

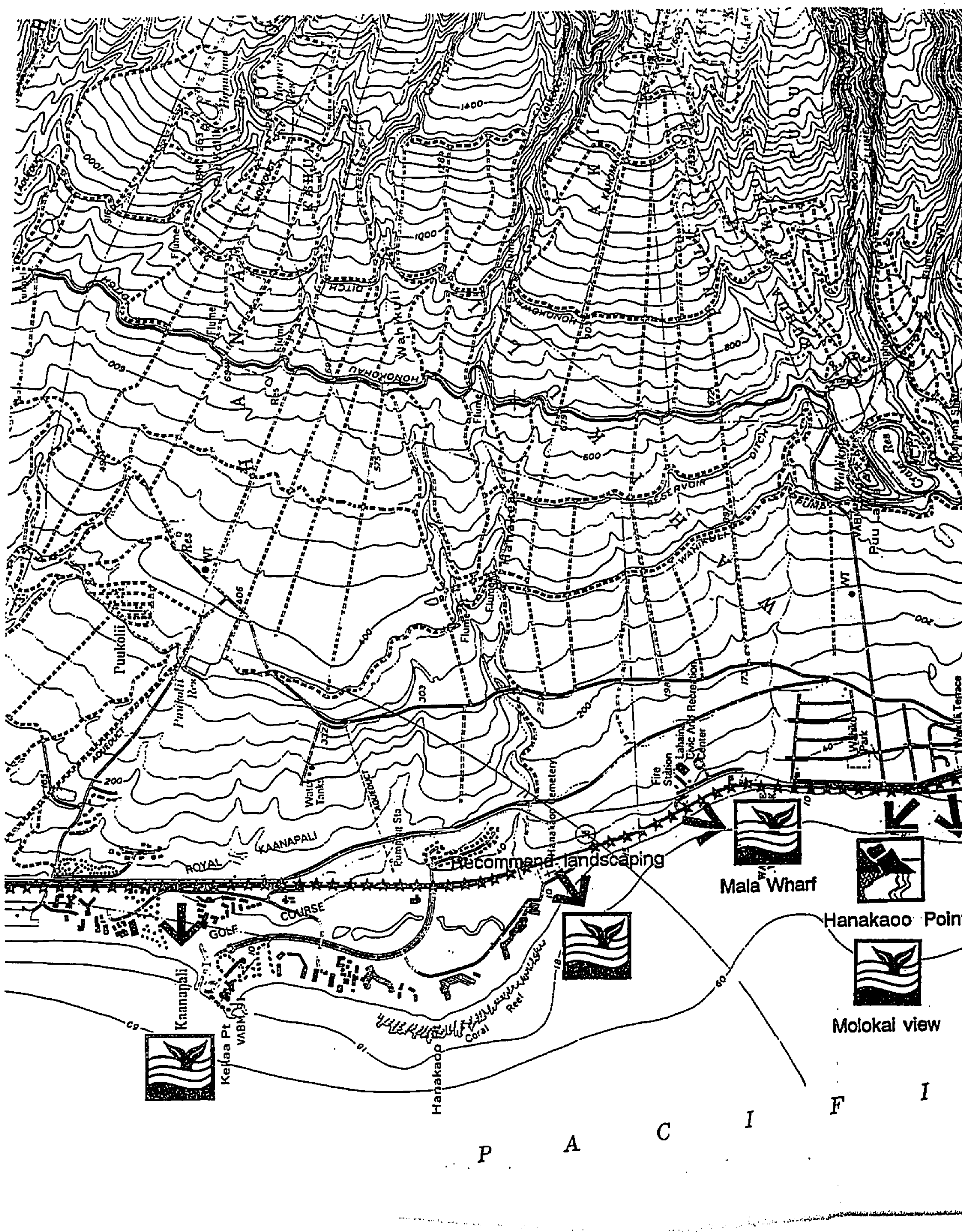
2. OS-2 Open Space District is intended to protect undeveloped lands that are contiguous to and adjacent to existing urban areas from premature development and subdivision in the OS-2 districts. It is the intent of this district to provide open space use for visual relief and buffering from building and structural mass, and to protect view planes. The lands in this district are not environmentally sensitive areas. The land use designation shall be open space in the community plan and the state land district shall be urban.

6.6 IMPLICATIONS AND RESPONSIBILITIES FOR MAUI COUNTY

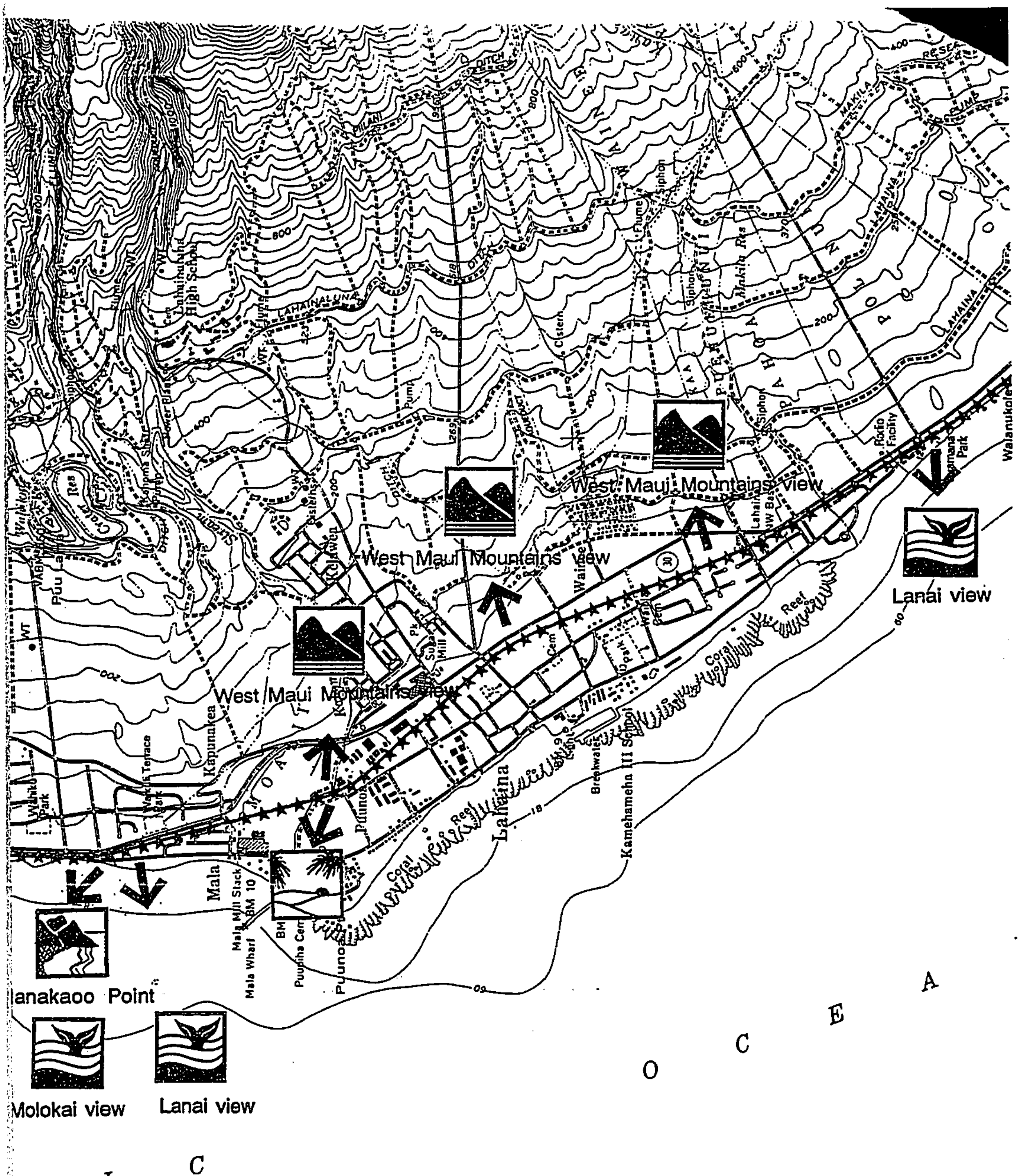
It is the legal responsibility of Maui County to comply with the body of regulations that govern Maui's coastal zone. These rules and regulations were designed to help manage and protect the coastal areas from the detrimental effects of uncontrolled development.

The Federal Act sets the standard for the protection of coastal scenic resources. The Federal Act makes the general statement that "special natural and scenic characteristics are being damaged by ill-planned development." The value of the aesthetic beauty of the coastal areas is recognized in this legislation, which stipulates that full consideration should be given to the protection of such resources. This theme is continued and expanded upon in those portions of the regulatory network at the State and County levels.

In summary, the clearly mandated responsibility of Maui County, as derived from the various components of the regulatory network, is to preserve, protect and enhance Maui's coastal scenic resources. This responsibility calls for an awareness of the significant scenic vistas that should be preserved, and calls for decisive action in requiring that any approved developments must be sensitive to the natural environment. Uncontrolled massing of buildings along the shoreline is not deemed to be beneficial to the preservation of Maui's scenic resources and more sensitive development should be encouraged. Developments are to be avoided which interfere with the mauka and makai views from the highway or other existing viewing areas.



Recommend landscaping
Mala Wharf
Hanakaoo Point
Molokai view
Kaanapali
Kekaa Pt
Hanakaoo
Coral Reef
ROYAL KAANAPALI
GOLF COURSE
HONOKOHAU DITCH
RESERVOIR
Puukolii
Lahaina Civic And Recreation Center
Fire Station
Pumping Sta
Water Tanks
Wahikuli
Puu Laina
P A C I F I



8.1.6 LAHAINA-KAANAPAL

APPENDIX H
Archaeological Inventory Survey Report

SCS Project No. 331-1

AN ARCHAEOLOGICAL INVENTORY SURVEY AT THE MAUI MARRIOTT OCEAN CLUB, IN THE *AHUPUA`A* OF HANAKA`Ō`Ō, LĀHAINĀ DISTRICT, ISLAND OF MAUI, HAWAII [TMK:4-4-13:001]

Prepared by:
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November 2002

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ABSTRACT

Scientific Consultant Services, Inc. (SCS), recently conducted an Archaeological Inventory Survey at the Maui Marriott Ocean Club in the Kā`anapali area of Hanaka`ō`ō Ahupua`a, Lāhainā District, Island of Maui [TMK: 4-4-13:001]. Maui Marriott Ocean Club proposes to develop two new towers at the north and south ends of their property. Four backhoe trenches were excavated in the proposed construction areas. The excavations consisted mainly of imported fill; no cultural remains were identified. However, the presence of at least one burial, recently reported in the middle portion of the project area, suggests pockets of cultural material may still exist. In view of the above information, and after consultation with the Maui Island State Historic Preservation Division representative, monitoring is recommended for all below surface excavation during the proposed development.

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INTRODUCTION

Scientific Consultant Services, Inc. (SCS), recently conducted an Archaeological Inventory Survey at Maui Marriott Resort and Ocean Club, situated in the *ahupua`a* of Hanaka`ō`ō, Lāhainā District, Island of Maui [TMK: 4-4-13:001] (Figure 1). The project area is on the grounds of the Maui Marriott Resort and Ocean Club in the Kā`anapali area where the hotel proposes to develop two new towers at its north and south ends. The objective of the inventory survey and cultural analysis is to satisfy current requirements for an Environmental Impact Statement.

The archaeological inventory survey was conducted on 22 and 23 October 2002 by Leann McGerty and John Zachman, under the overall supervision of Robert L. Spear, Ph.D., Principal Investigator. The fieldwork consisted of backhoe trenching in four separate areas on the Maui Marriott Beach Club premises, two trenches in the north and two trenches in the south. Trenches were positioned near the sections to be impacted by future construction without completely disturbing present activities. The north and south tested sections were comprised of two paved parking lots, a grassy corridor between the tennis courts, and a paved loading area next to a parking structure.

SCOPE OF WORK

The Scope of Work (SOW) for this project is an Archaeological Inventory Survey, which includes archival background research and limited testing. The purpose of the archaeological testing is to identify any sites and features of potential archaeological significance that might be present within, or immediately adjacent to the project area. A survey of this type is conducted to determine the presence or absence of any archaeological resources, as well as indicating the general nature and variety of remains. Site distribution and density may also be identified. This allows for a general significance assessment of the archaeological resources and allows for realistic recommendations for subsequent mitigation work that might be considered appropriate such as data collection, construction monitoring, interpretive planning and development, and/or preservation of sites and features with significant scientific research potential, interpretive qualities, and/or cultural values.

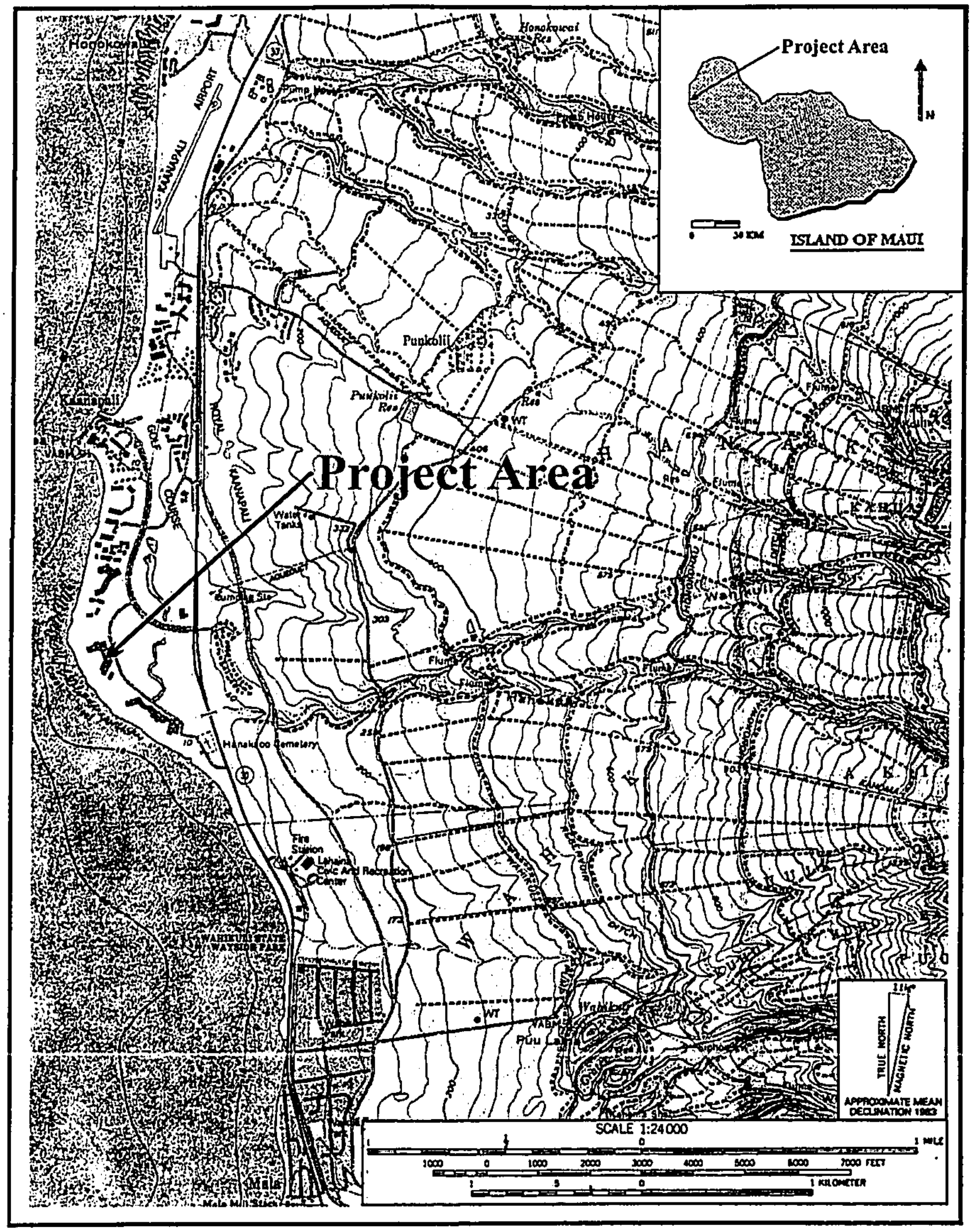

Figure 1. USGS Lāhainā Quadrangle Showing Project Area.

ENVIRONMENTAL BACKGROUND

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. Pu`u Kukui, forming the west end (1,215 m amsl), is composed of large, heavily eroded amphitheater valleys and, most importantly, contains well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The deep valleys of West Maui, such as `Īao, have been witness to many historical battles and were long coveted as productive cultural landscapes.

RAINFALL, SOILS, AND VEGETATION

The annual rainfall for the coastal region where the Maui Marriott Ocean Club is located averages 15 inches (Armstrong 1983:56). Soils in the general area fall into the Jaucus Series consisting 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). 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 2 feet above mean sea level. Vegetation in the parking lots, tennis court vicinity, and loading yard where the test trenches were excavated consisted of introduced landscaping flora.

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).

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 officinaruma*) and *mai'a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *'uala* (sweet potato, *Ipomoea batatas*) were produced. His was a 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). 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 AD 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 [Menzies 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 0r 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, Honolua, 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, Kauikeaouli (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 2.

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`anapli 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 saltpans 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

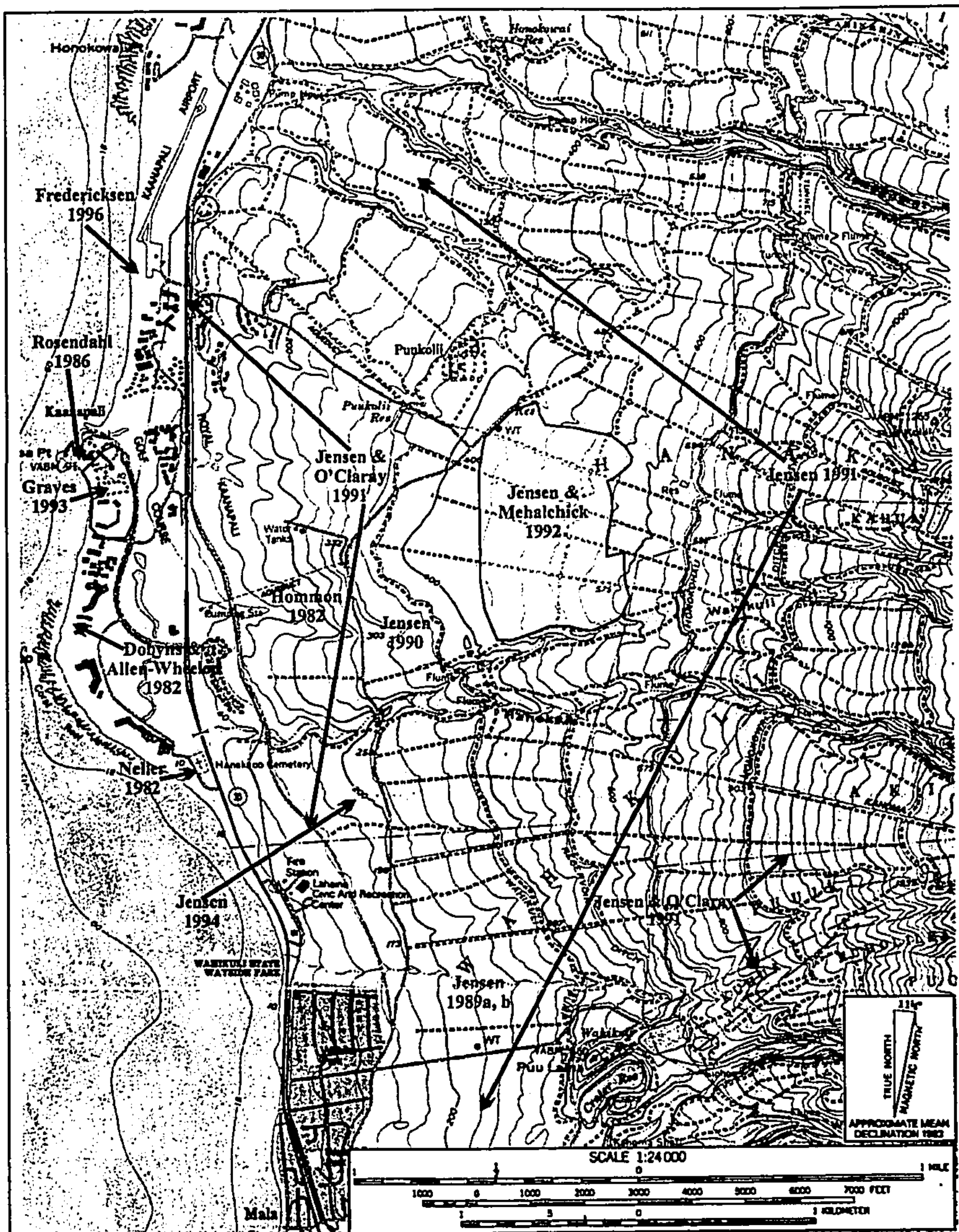

Figure 2. Archaeological Studies Conducted in the Vicinity of the Project Area.

within the two branches of Kahoma Stream, and two well constructed walled enclosures were found in the vicinity of Pu`u aina.

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 O'Claray 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 four backhoe trenches were arranged in agreement with the hotel authorities. On 22 and 23 October 2002, backhoe trenching was conducted by a professional operator at the Maui Marriott Ocean Club site under the supervision of archaeologists Leann McGerty and John Zachman. Four stratigraphic trenches (ST) were positioned in the north and south sections of the project area (Figure 3). ST-1 (9.95 by 0.93 by 1.60 m) was located under pavement in the north parking lot; ST-2 (10.00 by 0.95 by 1.90 m) was placed in the grass between two tennis courts further to the north; ST-3 (5.00 by 0.95 by 1.90 m) was excavated under pavement in the south parking lot in close proximity to Nohea Kai Drive; and ST-4 (5.00 by 0.95 by 1.60 m) was situated under pavement between an existing parking structure and the south property boundary. Each ST was excavated to approximately two meters, and as no prehistoric or historic-era sites or cultural deposits were encountered, a two-meter section of each trench was profiled and photographed.

EXCAVATION RESULTS

Excavation of the four trenches proceeded to depths of approximately two meters below ground surface. Three basic fill layers were revealed in most trenches: pavement, red cinders from Olowalu Quarry. and Waikapū soil. Construction workers on the site said the red cinders had been imported from Olowalu Quarry by AMFAC in the 1950s-60s at the beginning of the development along the Kā'anapali coast. Soils from Waikapū were placed on top as surcharge. The sequence of layers consisted of 8-10 cm of pavement and gravel (Layer I), 80-100 cm of Waikapū soil (Layer II), and Olowalu red cinders to the bottom of excavation (BOE, Layer III). ST-2 consisted of soil fill on beach sand and ST-4 contained only red cinder under the Layer I pavement. No pre-Contact or historic materials were identified in any of the four trenches. Stratigraphic layers were identified in the exposed trenches as follows:

ST-1: (Figures 4 and 5)

Layer I	(0-8 cmb pavement surface [ps]): cement, tar, and gravel layer
Layer II	(8-90/100 cmbps): dark brown Waikapū soil surcharge
Layer III	(90-160 cmbps, BOE): reddish brown Olowalu cinder and a cement jacket for electrical lines

ST-2: (Figures 6 and 7)

Layer I	(0-30 cmbs): Waikapū soil surcharge
Layer II	(20-10 cmbs): a beach sand lens
Layer III	(30-105 cmbs): Olowalu red cinders
Layer IV	(105-109 cmbs): a thin, beach sand lens
Layer V	(109-129 cmbs): gray gravel
Layer VIa	(129-159 cmbs): a yellowish brown (10YR 5/4) sand
Layer VIb	(159-190 cmbs, BOE): a very pale brown (10YR 7/4) sand

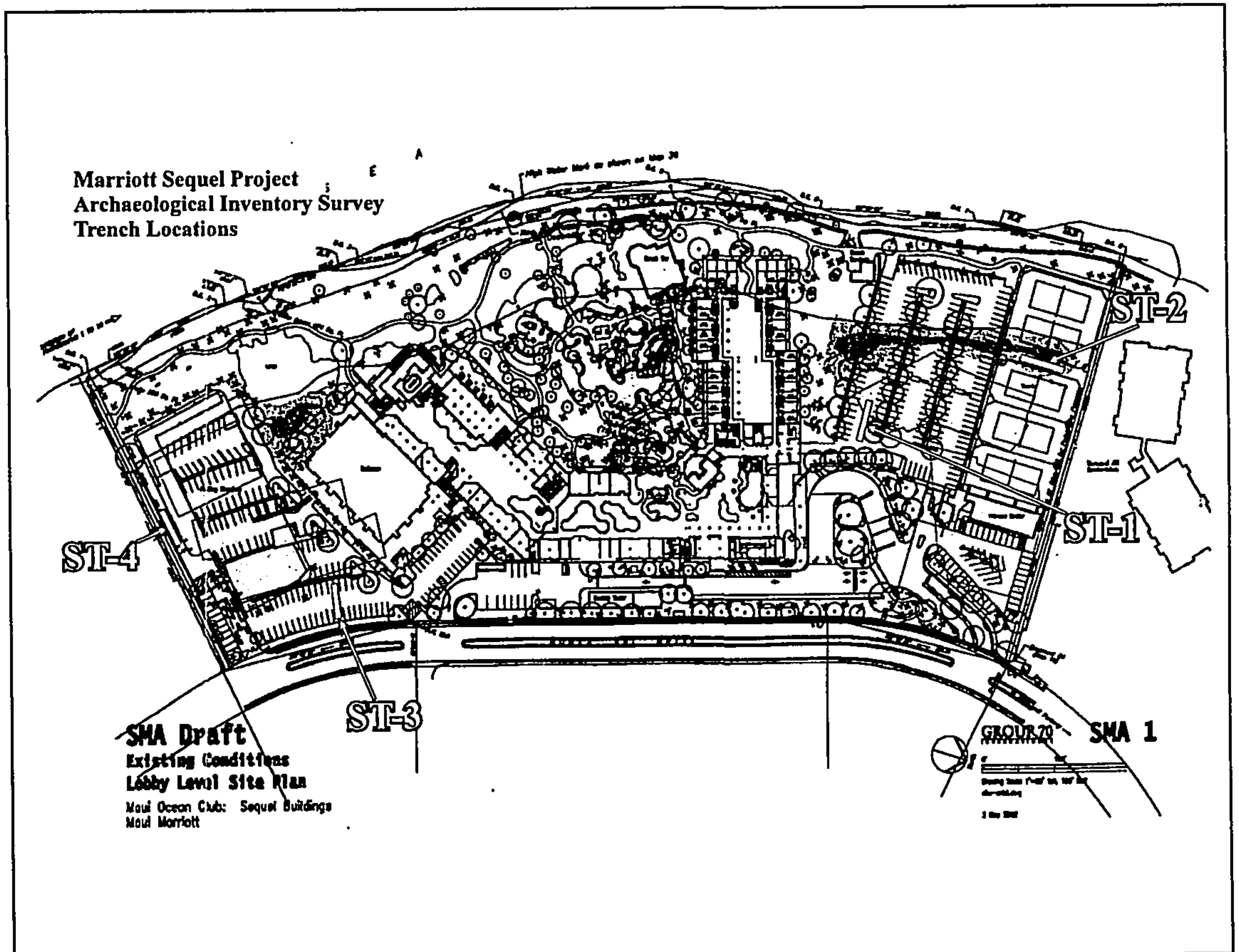

Figure 3. Planview Map Showing the Location of the Four Stratigraphic Trenches (ST).

ST-3: (Figures 8 and 9)

Layer I	(0-10 cmbps): cement, tar, and gravel layer
Layer II	(10-80 cmbps): Waikapū soil surcharge
Layer III	(80-123 cmbps): sand and Olowalu cinders
Layer IV	(123-190 cmbps): Olowalu cinders

ST-4: (Figures 10 and 11)

Layer I	(0-8 cmbps): cement, tar, and gravel layer
Layer II	(8-160 cmbps): Olowalu red cinders

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 hotel features. Previous archaeological and historical research suggests traditional agriculture on the lands surrounding Lāhainā was supplanted by commercial cane and pineapple cultivation. 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.

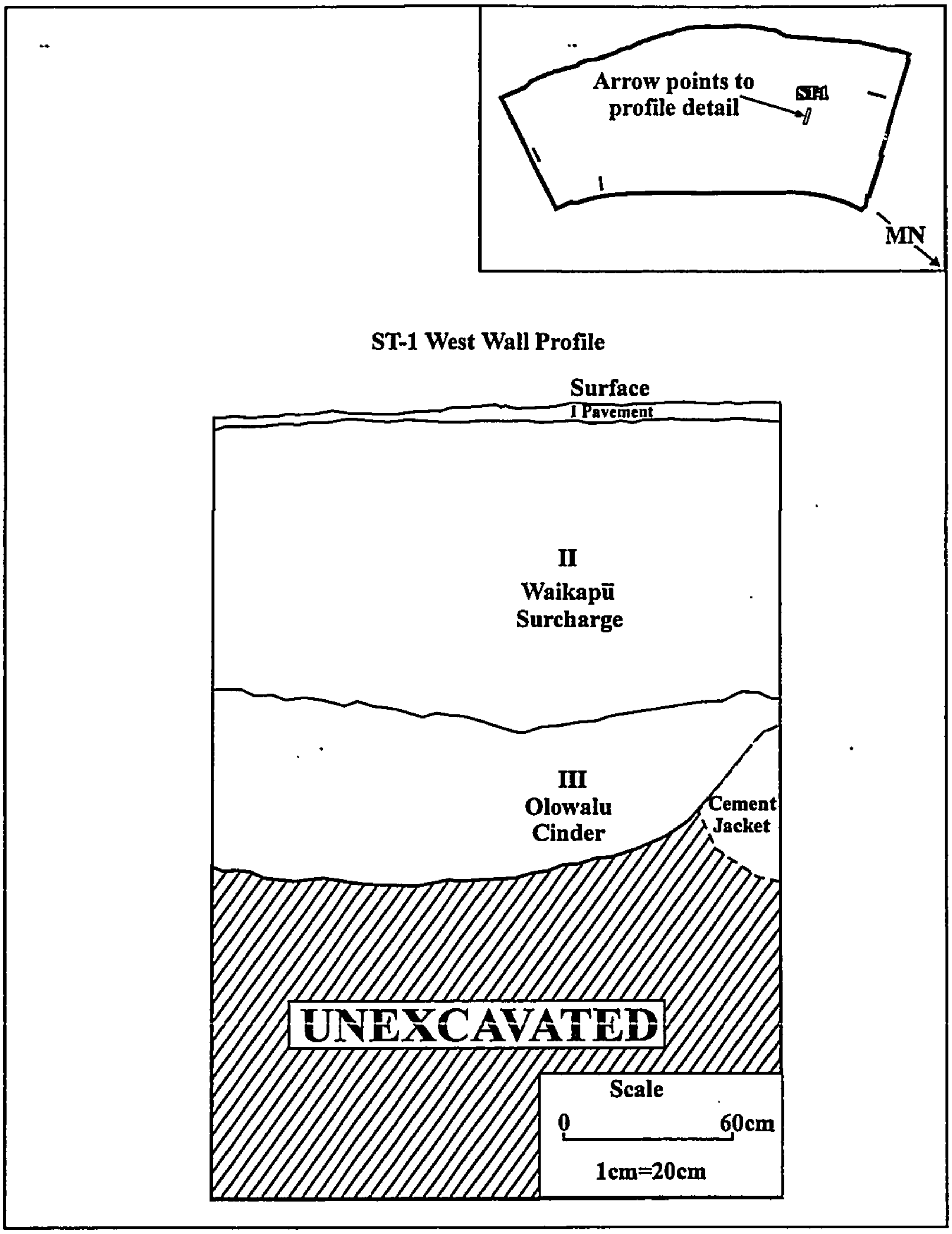

Figure 4. Stratigraphic Trench 1 (ST-1). West Wall Profile.

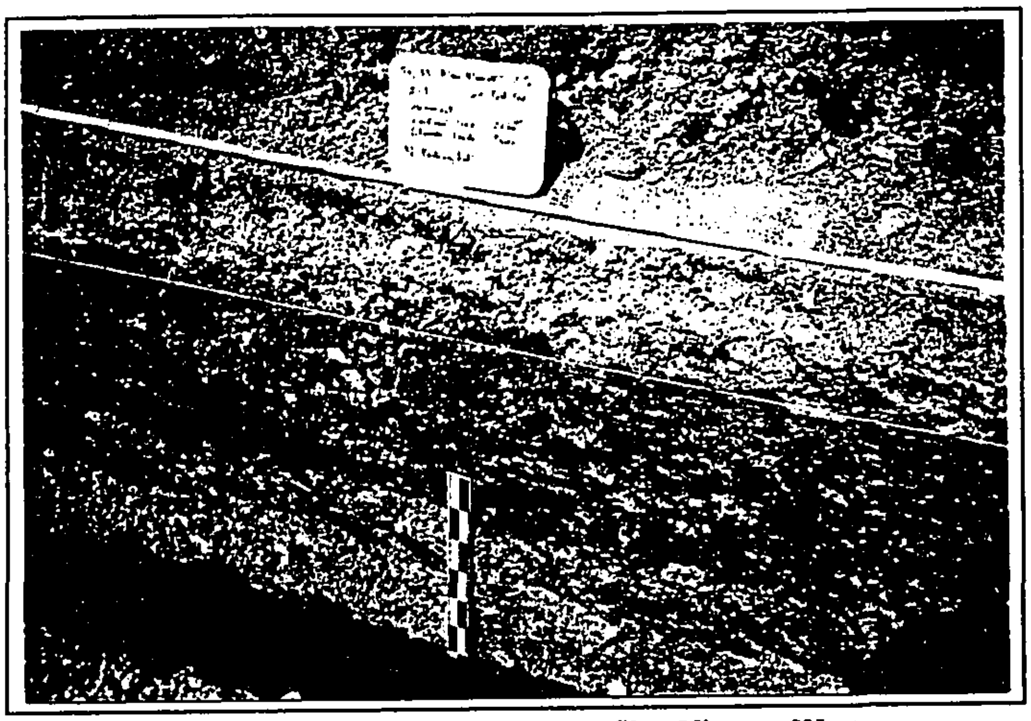

Figure 5. Photograph of ST-1 West Wall Profile. View to West.

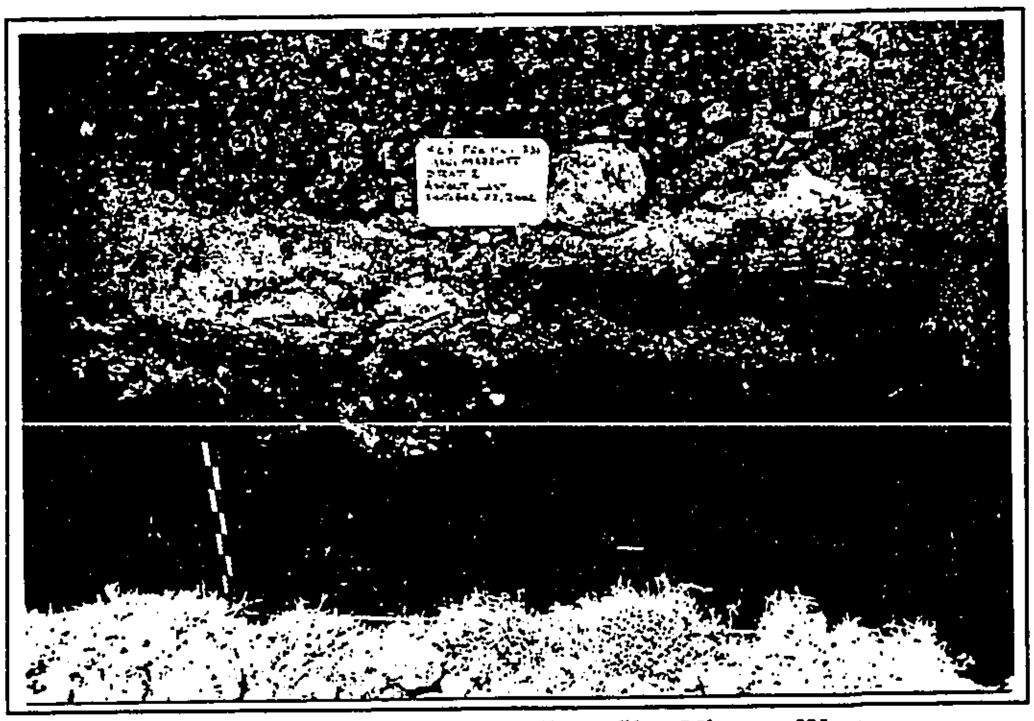

Figure 6. Photograph of ST-2 West Wall Profile. View to West.

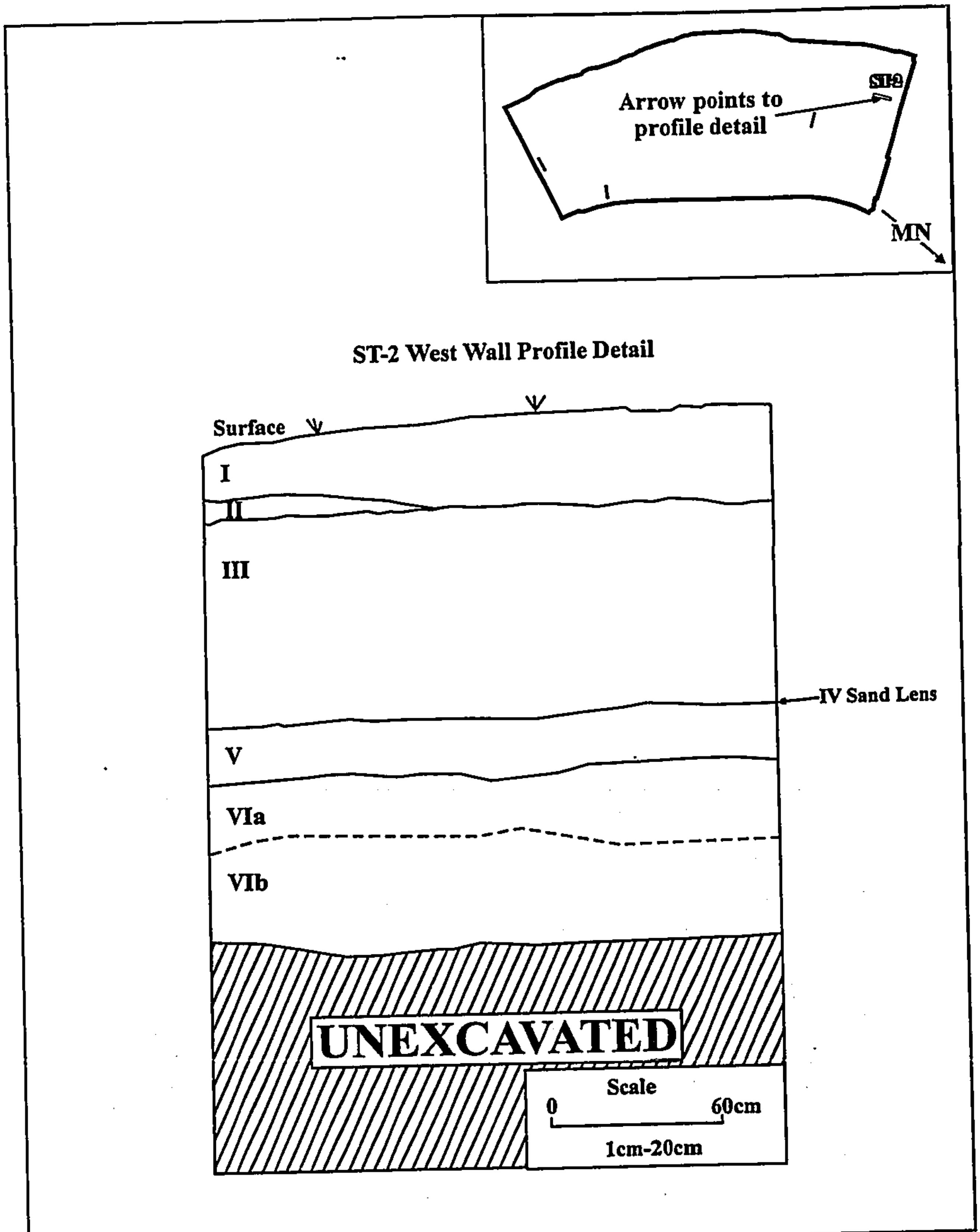

Figure7. Stratigraphic Trench 2 (ST-2). West Wall Profile.

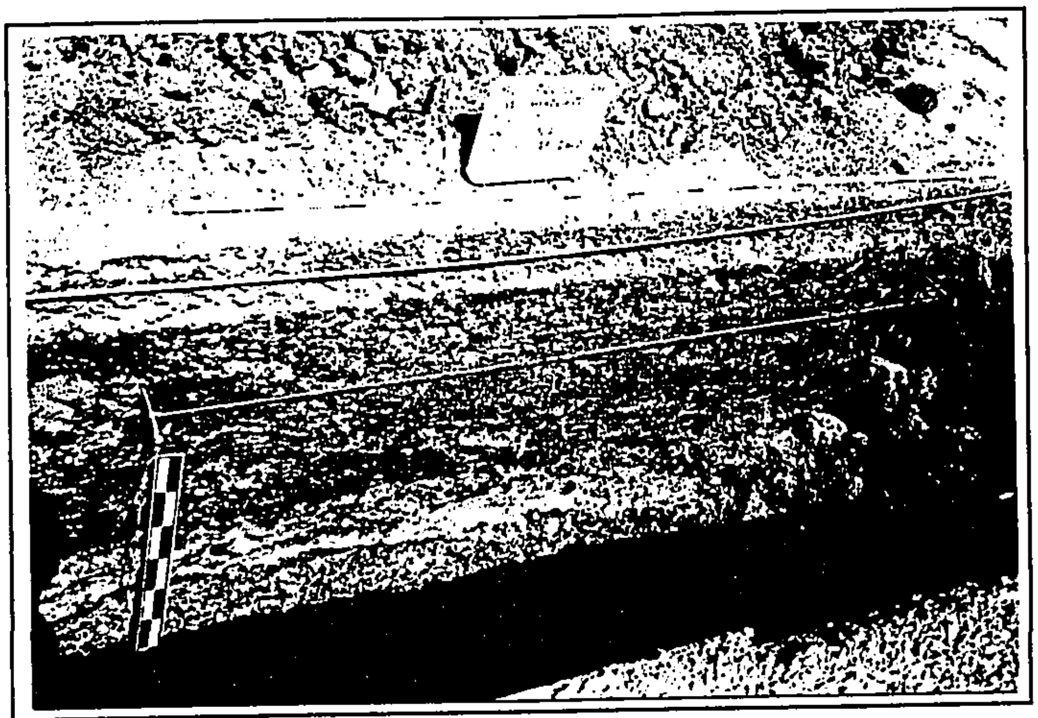

Figure 8. Photograph of ST-3 North Wall Profile. View to North.

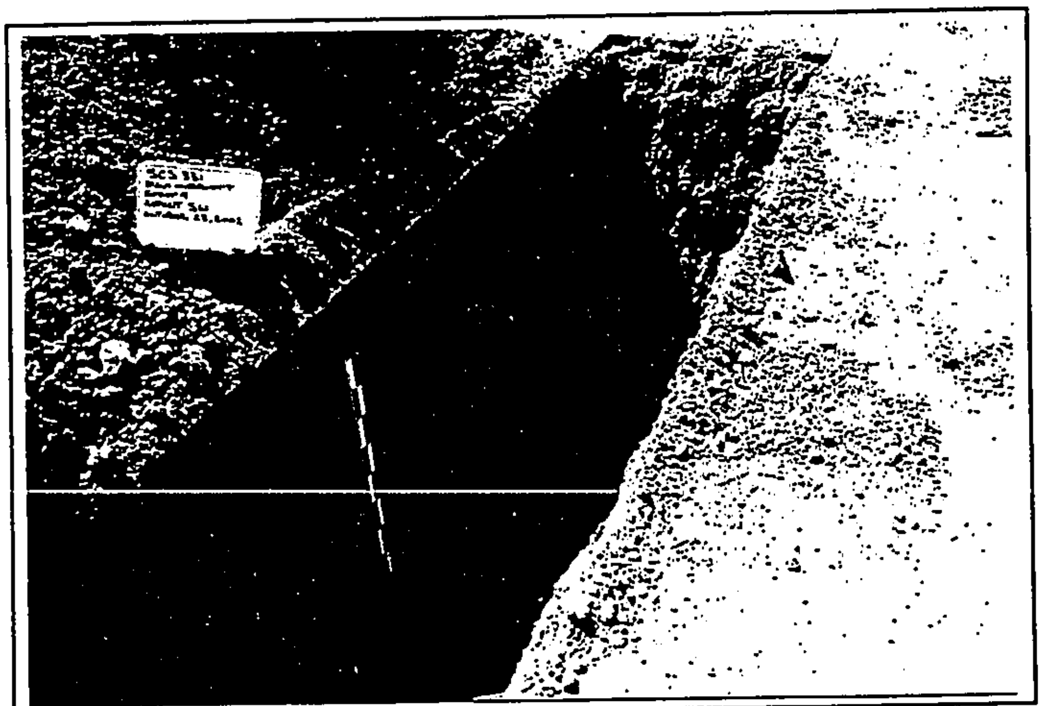

Figure 9. Photograph of ST-4 South Wall Profile. View to South.

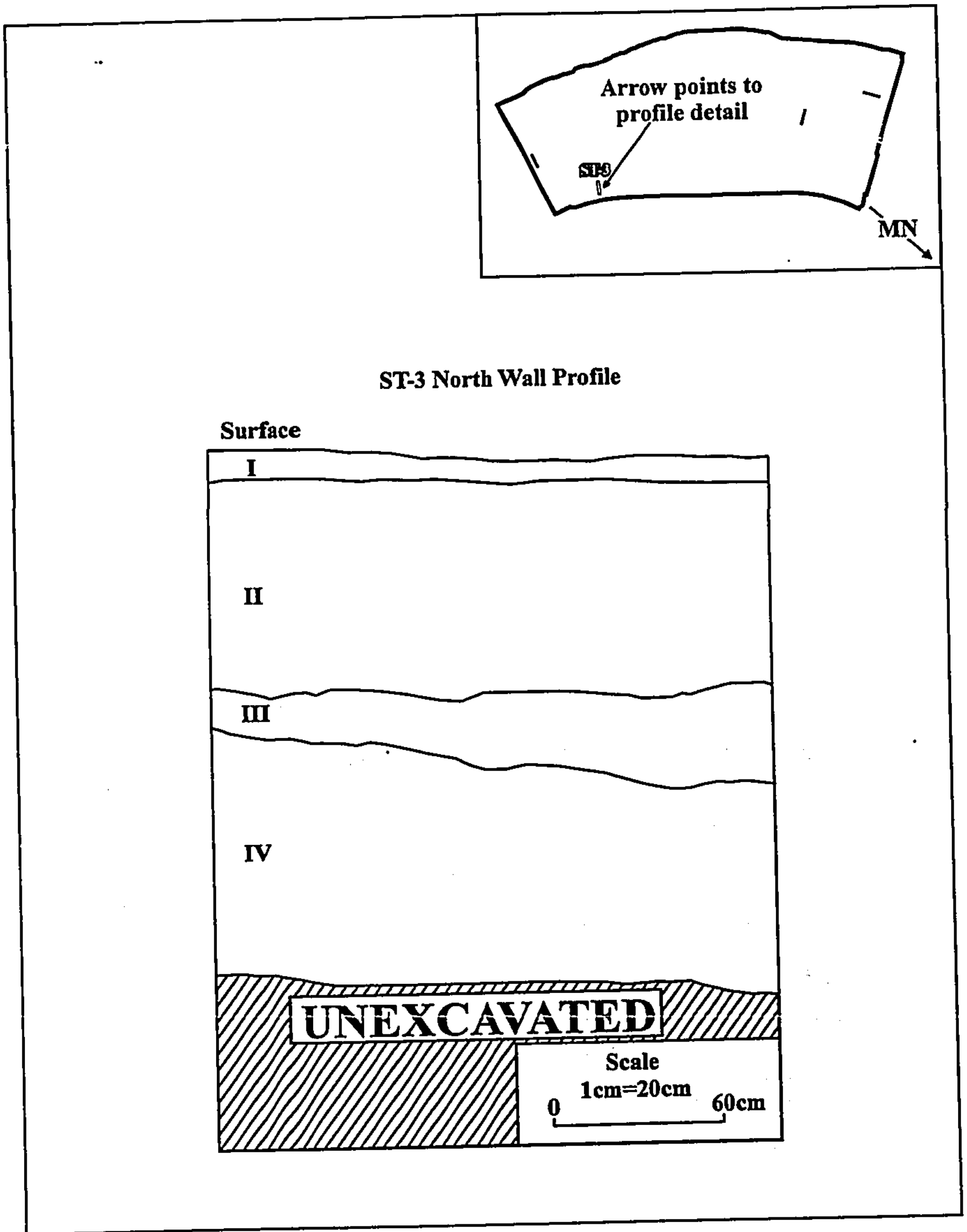

Figure 10. Stratigraphic Trench 3 (ST-3). North Wall Profile.

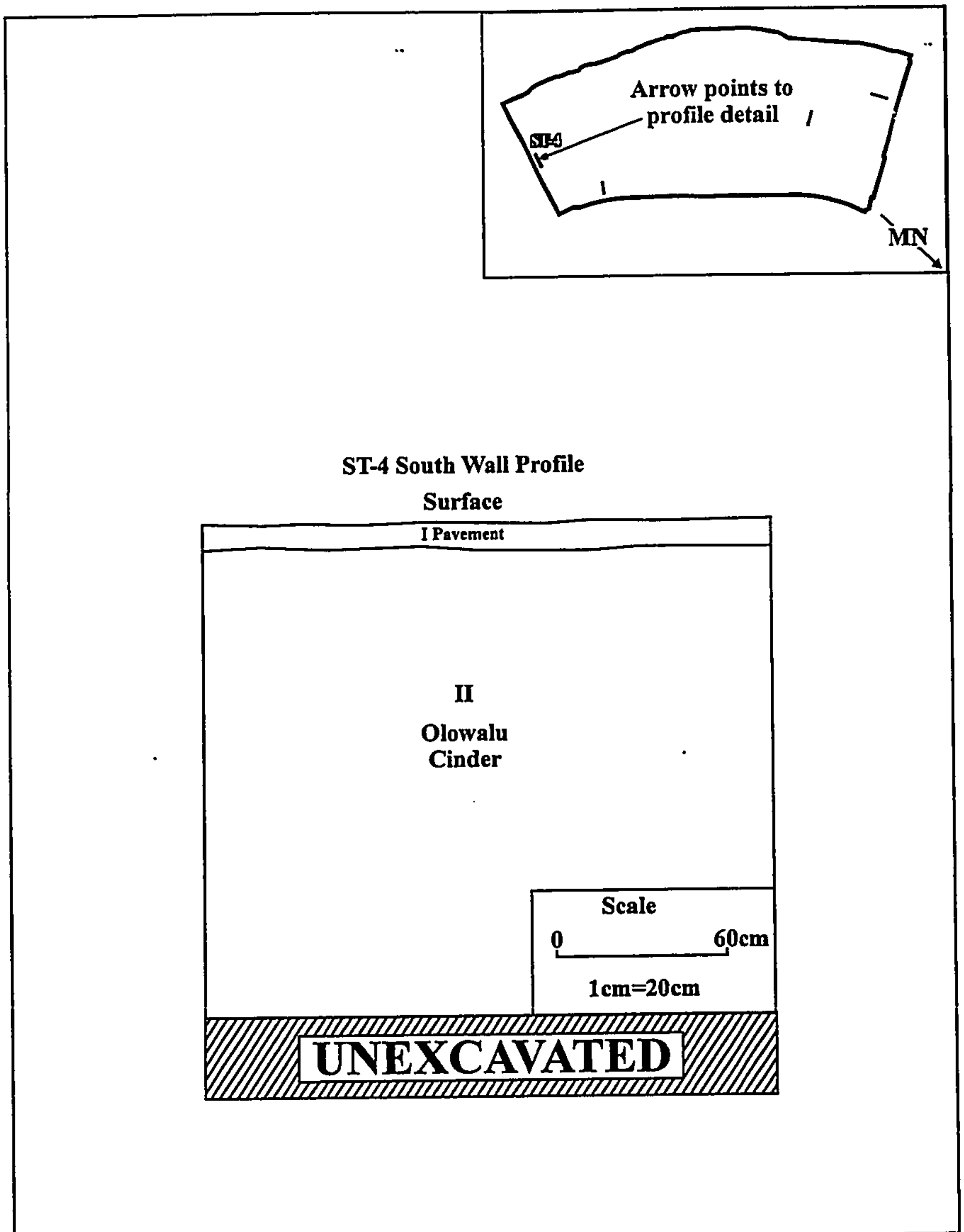

Figure 11. Stratigraphic Trench 4 (ST-4). South Wall Profile.

SIGNIFICANCE ASSESSMENT

Based on the testing results that revealed stratigraphy consisting of fill in all four stratigraphic trenches, there is no significant assessment. However, the close proximity of a burial (Site 4985), significant under Criterion E, and the archival accounts that suggests the importance of the coastal region to the *ali'i*, indicates the possibility that potentially significant unidentified cultural remains may still exist and may be encountered in the course of excavation for development.

RECOMMENDATIONS

Based on the negative testing results, no data recovery is recommended. However, in *view of burial Site 4985, historical records, and after consultation with* Dr. Melissa Kirkendall, the Maui Island SHPD representative, monitoring is recommended for all below surface excavation during the proposed development.

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