LINDA CROCKETT LINGLE
Mayor

BRIAN W. MISKAE
Director

GWEN Y. OHASHI
Deputy Director

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

'93 OCT 15 P12:4[illegible]
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QUALITY [illegible]

October 12, 1993

Mr. Brian J.J. Choy, Director
Office of Environmental Quality Control
220 S. King Street 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

Subject: Final Environmental Assessment for a Shoreline Setback Variance Application by Kyo-ya Company, Ltd. for the Sheraton Maui Redevelopment Project at TMK: 4-4-08: 05, Kaanapali Beach Resort, Lahaina, Maui.

At its regular meeting on October 12, 1993, the Maui Planning Commission voted to adopt the above mentioned request as a Negative Declaration.

Enclosed is a copy of the OEQC Bulletin Publication Form, and four (4) copies of the Final Environmental Assessment for the project. The Draft Environmental Assessment was published in the Bulletin on August 23, 1993. Please publish this Negative Declaration Notice in the October 23, 1993 OEQC Bulletin.

Should you have any questions, please contact Clayton Yoshida of this office at 243-7735.

Very truly yours,

BRIAN MISKAE
Planning Director

Encl.

cc: Wayne Judd, Kyo-ya Co., Ltd.
Leslie Kurisaki, Helber, Hastert, and Fee
Gwen Ohashi, Deputy Director
Colleen Suyama
Clayton Yoshida, AICP

1993-10-23-MA-FEA - Sheraton Maui Redevelopment

SHERATON MAUI

REDEVELOPMENT

FINAL ENVIRONMENTAL ASSESSMENT

PREPARED FOR
KYO-YA COMPANY, LTD.

PREPARED BY
HELBER HASTERT & FEE, PLANNERS

OCTOBER 1993

SHERATON MAUI
REDEVELOPMENT

FINAL ENVIRONMENTAL ASSESSMENT

KAANAPALI, MAUI, HAWAII
TMK 4-4-08:05

PREPARED FOR
KYO-YA COMPANY, LTD.

PREPARED BY
HELBER HASTERT & FEE, PLANNERS

FOR SUBMITTAL TO
COUNTY OF MAUI PLANNING DEPARTMENT

IN SUPPORT OF
SPECIAL MANAGEMENT AREA USE PERMIT AND
SHORELINE SETBACK VARIANCE APPLICATION

OCTOBER 1993

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I.

Introduction and Summary

I. INTRODUCTION AND SUMMARY

1.1 Introduction

This environmental assessment (EA) has been prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS), the Special Management Area Rules and Regulations of the County of Maui, and the Rules and Regulations Relating to Shoreline Setbacks for the Islands of Maui and Lanai, County of Maui. The EA is intended to fulfill the environmental requirements for a Special Management Area Use Permit (SMP) and a Shoreline Setback Variance (SSV) filed with the County of Maui Planning Department.

The EA presents information required by Chapter 200 of Title 11, Administrative Rules, entitled "Environmental Impact Statement Rules", prepared by the State Department of Health. This includes: identification of the petitioner; identification of the approving agency; identification of agencies consulted in preparing the assessment; a general description of the action's technical, economic, social and environmental characteristics; a summary description of the affected environment; identification and summary of major impacts and alternatives considered; proposed mitigation measures; and a determination of the significance of the proposed action.

1.2 Background

In July 1993, a joint application for a Special Management Area Use permit and a Shoreline Setback Variance, including a Draft EA, were submitted to the County of Maui Planning Department. In preparing this July 1993 submittal, a number of federal, state and county agencies were contacted for their comments. Appendix F includes reproductions of comment letters received during the pre-submittal consultation.

Upon receipt of the SMP/SSV application, the Maui County Planning Department sent copies of the application and Draft EA to the Office of Environmental Quality Control (OEQC). Notice of availability of the draft EA was published in the August 23, 1993 edition of the OEQC Bulletin, commencing a 30-day public comment period which ended on September 22, 1993. During this period, written comments were received from a number of federal, state and county agencies as well as one public comment. These comment letters are reproduced in Appendix G.

1.3 Development Summary

Applicant/Petitioner:	Kyo-ya Company, Ltd. c/o ITT Sheraton Technical Services and Engineering P.O. Box 8559 Honolulu, Hawaii 96830-8559 (808) 931-8888 Attention: Mr. D. Wayne Judd
Property Owner:	Kyo-ya Company, Ltd. 2255 Kalakaua Avenue, 2nd Floor Honolulu, Hawaii 96815 (808) 931-8600
Preparers of Environmental Assessment:	Helber Hastert and Fee, Planners 733 Bishop Street, Suite 2590 Honolulu, Hawaii 96813 (808) 545-2055 Attention: Ms. Leslie Kurisaki
Property Location:	Kaanapali Beach Resort Lahaina Judicial District, County of Maui
Tax Map Key:	2nd Division, 4-4-08:5
Site Area:	23.291 acres
Existing Land Use Regulations:	State Land Use District: Urban Lahaina Community Plan: Hotel County Zoning: H-2 Hotel Special Management Area: Entire Site Shoreline Setback: 150 feet
Existing Land Use:	Sheraton Maui Hotel (510 guest units/"keys")
Proposed Action:	Project proposes to renovate the hotel while maintaining the existing hotel room count and low density character of the site. The original Cliff Tower and Garden Tower will be renovated, with an additional floor added to the Garden Tower. A new one-story "Garden Wing" of guest rooms will be constructed adjacent to and makai of the Garden Tower and Cliff Tower. The "original lobby" at the top of Black Rock and the adjacent Discovery Room dining facilities will be remodeled. The Molokai Wing will be demolished and new guest room buildings will be constructed in approximately the same building footprints, with an additional floor. A new Seaside Village consisting of four (4) five-story structures, and a new two-story main lobby area will be constructed in the south/central portion of the site. New conference facilities along with portable food carts, retail kiosks, a health spa and tennis courts will be

	located adjacent to the lobby, over a new parking structure. A swimming pool connected to a system of swimming waterways will be located directly makai of the new lobby area. In addition, a pool bar, luau area, putting green, and beach front promenade interconnected to the swimming pool/waterways are proposed for the makai area. Finally, the plan includes a concept design for renovation of an old pier located on the northern end of the site. The pier could serve as a staging area for future commercial and recreational boating activities.
Requested Permits/ Variances:	Special Management Area Use Permit Shoreline Setback Variance
Accepting/ Approving Agencies:	Maui County Planning Department Maui County Planning Commission

1.4 Definition of Terms

Project Area: The project area (also referred to as the "project site") is the 23.291 acre parcel (TMK 4-4-08:5) on which the Sheraton Maui Hotel is located.

Applicant/Petitioner: The applicant/petitioner is Kyo-ya Company, Ltd. The petitioner's mailing address is c/o ITT Sheraton, Technical Services and Engineering, P.O. Box 8559, Honolulu, Hawaii 96830-8559.

Proposed Action: The proposed action includes renovation and reconstruction of the existing Sheraton Maui Hotel, while maintaining the existing hotel unit ("key") count and low density character of the site. The project includes renovation of the existing Cliff Tower and Garden Tower structures; construction of a new Garden Wing of guest rooms; remodeling the Discovery Room dining facility and "original lobby" at the top of Black Rock; demolition and reconstruction of the Molokai Wing of guest rooms; construction of a new Seaside Village; construction of a new lobby/porte cochere; and creation of new conference facilities, pools and waterways, health spa and tennis courts, a luau area and a new parking structure.

The master plan also includes a concept design for renovation of the old pier located on the northern end of the site. The portion of the old pier owned by the petitioner is included in the application for Special Management Area Use Permit. (A portion of the old pier is owned by Amfac/JMB Hawaii, Inc.).

1.5 Alternatives Considered

Alternatives to the project which were considered include a "no action" alternative and a renovation phasing alternative. Both these alternatives were judged to be less favorable than the proposed project. The no action alternative was eliminated because of market demands, the need for the hotel to remain competitive, the desire to improve the efficiency of the hotel's operations, and the need to upgrade the physical facility to meet current County, State and federal requirements. The renovation phasing alternative was eliminated because of its adverse impact on guests and adjacent properties, its longer construction period and resulting higher development costs.

1.6 Summary of Probable Impacts and Mitigating Measures

Archaeological and Historic Resources

An archaeological inventory survey, including subsurface investigation, did not find any subsurface cultural deposits, burials or human remains. The study concluded that the proposed action will not affect archaeological or historic sites. As requested by DLNR State Historic Preservation Division, an archaeologist will be on-site during construction excavation to monitor any construction activities.

Traffic Circulation

The proposed project is not expected to adversely impact traffic circulation within the Kaanapali Resort or within the West Maui area. Although no new guest rooms are proposed, modest increases in restaurant and meeting space will result in a small increase in vehicle trips. The proposed increase in restaurant and meeting space is forecast to generate 41 additional vehicle trips during the a.m. peak hour and 44 additional trips during the p.m. peak hour. The Honoapiilani Highway/Kaanapali Parkway intersection will require improvements with or without the project. As a result, no mitigation measures are recommended with the proposed Sheraton Maui redevelopment. A mauka bypass road will improve intersection capacity in the longer term.

Infrastructure

The existing wastewater and water supply infrastructure are adequate to accommodate the demands of the proposed project.

The applicant will continue to work closely with Maui Electric Company and Hawaiian Telephone Company to ensure that adequate electrical power and communication service is provided to the hotel.

Recreational Resources

The project will improve lateral shoreline access by construction of a concrete pedestrian promenade, extending along the beach fronting the project from the southern boundary to Black Rock. A public beach parking area with 20 spaces, including one handicapped stall, will be constructed adjacent to the Kaanapali Parkway and the public beach access.

Visual Analysis

The proposed action will not generate significant adverse effects to visual or scenic resources from Honoapiilani Highway or up and down the coast. The hotel improvements will maintain the existing low rise, low density ambiance, and make use of natural materials and colors. Increases in building heights are far less than the heights allowed under current zoning.

Socio-Economic Characteristics

The proposed redevelopment will generate an estimated 800 direct, construction-related jobs as well as short-term indirect and induced employment. The hotel will be closed to guests during the 12 month renovation period, and during this time, most of the total 388 employees will be temporarily laid off. The hotel will work closely with the unions to provide adequate notification. The existing labor agreement with the union will be extended to provide the necessary reemployment, seniority and retirement benefit protection.

1.7 Determination

Under the provisions of Chapter 200 of Title 11, Hawaii Administrative Rules, prepared by the Department of Health, Section 2-8.3.b, of the SMA Rules and Regulations of the County of Maui, which establish criteria for determining significant impact within the Special Management Area, and the requirements of the Shoreline Setback Rules and Regulations for Maui County, and based on the analysis contained herein, the proposed action will not have any substantial adverse effect on the environment.

II.

Description of Proposed Action, Alternatives Considered and Agencies Consulted in Preparing Assessment

II. DESCRIPTION OF PROPOSED ACTION, ALTERNATIVES CONSIDERED AND AGENCIES CONSULTED IN PREPARING ASSESSMENT

2.1 Description of Proposed Action

2.1.1 Existing Conditions

The Sheraton Maui Hotel is a 510-guest room hotel located at the Kaanapali Beach Resort, on the west coast of the island of Maui, about three miles north of Lahaina (Figure 1). The Kaanapali Beach Resort is a 1,200-acre master planned resort community conceived in the early 1950's and commenced in 1959 with the construction of a water system, sewage treatment plant, drainage system and a network of roadways. Today, the Kaanapali Beach Resort area includes six hotels with over 3,700 rooms, six residential condominium developments, a shopping center/whaling museum, and two 18-hole golf courses. Approximately half of the 1,200-acre resort is now developed (Figure 2).

The Sheraton Maui Hotel, the first hotel developed at the Kaanapali Beach Resort, is located in the northern, makai end of the resort, and is bordered by the Kaanapali Beach Hotel to the south and the Royal Kaanapali Golf Course to the north and east. The 23.291 acre hotel property is identified as TMK 2nd Division 4-4-08:5, and is owned by Kyo-ya Company, Ltd. (Figure 3). A large lava rock outcropping at the northern end of the property, commonly known as Black Rock, is the most prominent feature along the Kaanapali Beach shoreline, rising abruptly to an elevation of 78 feet.

The original hotel, constructed in the early 1960's, included a lobby and dining room at the top of Black Rock, and the Cliff Tower of guest rooms against the side of the rock. Subsequent additions to the hotel added additional guest facilities and the lower lobby. Existing guest room facilities include: the six-story Cliff Tower, the six-story Garden Tower, the three-story Molokai Wing (on Black Rock) and two-story guest cottages spread throughout the southern, central and mauka portions of the site. In addition, the hotel has two main dining facilities, the Discovery Room restaurant at the top of Black Rock and the Ocean Terrace coffee shop near the Cliff Tower swimming pool (Figure 4).

There is a rocky landing, often referred to as the "old pier", at the northern end of the site. This landing was formerly used to ship out the sugar that was processed at the Lahaina Mill and hauled to the landing by train. The pier was also used to load cattle for shipment to slaughter. Property records indicate that a portion of the pier is owned by the applicant, with the remainder owned by Amfac/JMB Hawaii, Inc., the adjacent landowner. The pier is currently not in use, and has been fenced off to pedestrians. The old pier is included in this application for SMP approval.

2.1.2 Proposed Redevelopment Plan

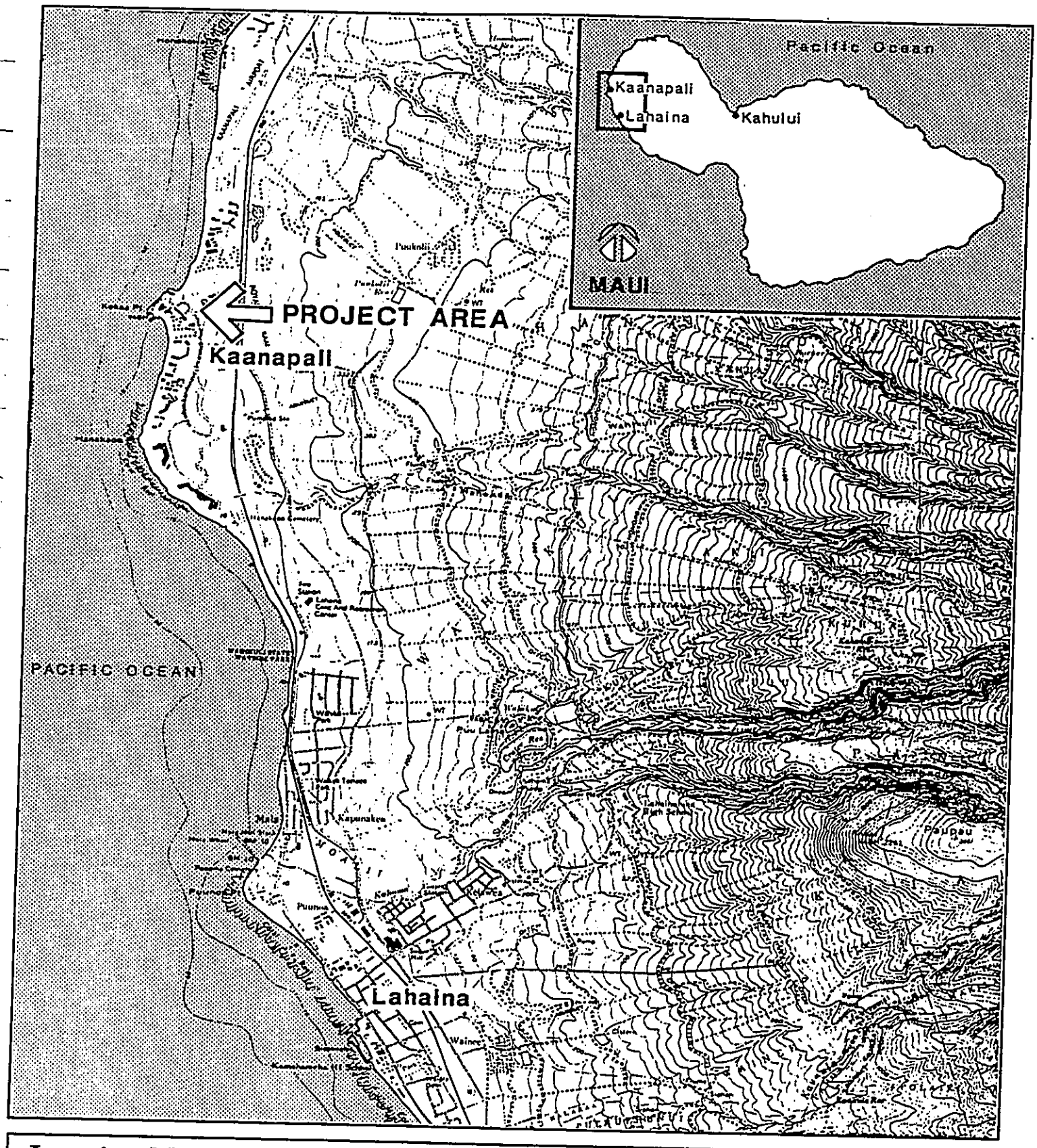
The proposed redevelopment of the Sheraton Maui Hotel is intended to modernize and upgrade the existing facilities, enabling the hotel to be more competitive and to increase its overall marketability. Facilities will be upgraded to meet new federal, State and County code requirements, including the Americans With Disabilities Act (ADA) requirements, and to operate more efficiently. Both the aesthetic and functional aspects of the hotel will be improved as a result of the renovation.

The proposed redevelopment concept plan continues to emphasize the low density character of the property and will not change the existing room count of 510 guest rooms or "keys". Approximately 40 percent of the guest rooms will be rebuilt, and the remaining guest rooms will be completely remodeled. There will be a net increase of approximately 2,000 square feet of dining area with the addition of a new Japanese restaurant. New executive meeting facilities will provide approximately 14,000 square feet of meeting space, compared to about 1,000 square feet at present. The increased meeting space will enable the hotel to attract the growing convention and incentive markets.

Site sections, elevation level plans and building sections for the proposed redevelopment, prepared by project architects Wimberly Allison Tong & Goo, are presented in Appendix A.

The redevelopment project is planned to commence in mid-1994 and is expected to last about one year with the entire property shut down during the redevelopment period.

The proposed redevelopment plan (Figure 5) includes both renovation of existing facilities and the demolition and construction of new structures and facilities. For purposes of discussion, the improvements will occur in three areas of the property:



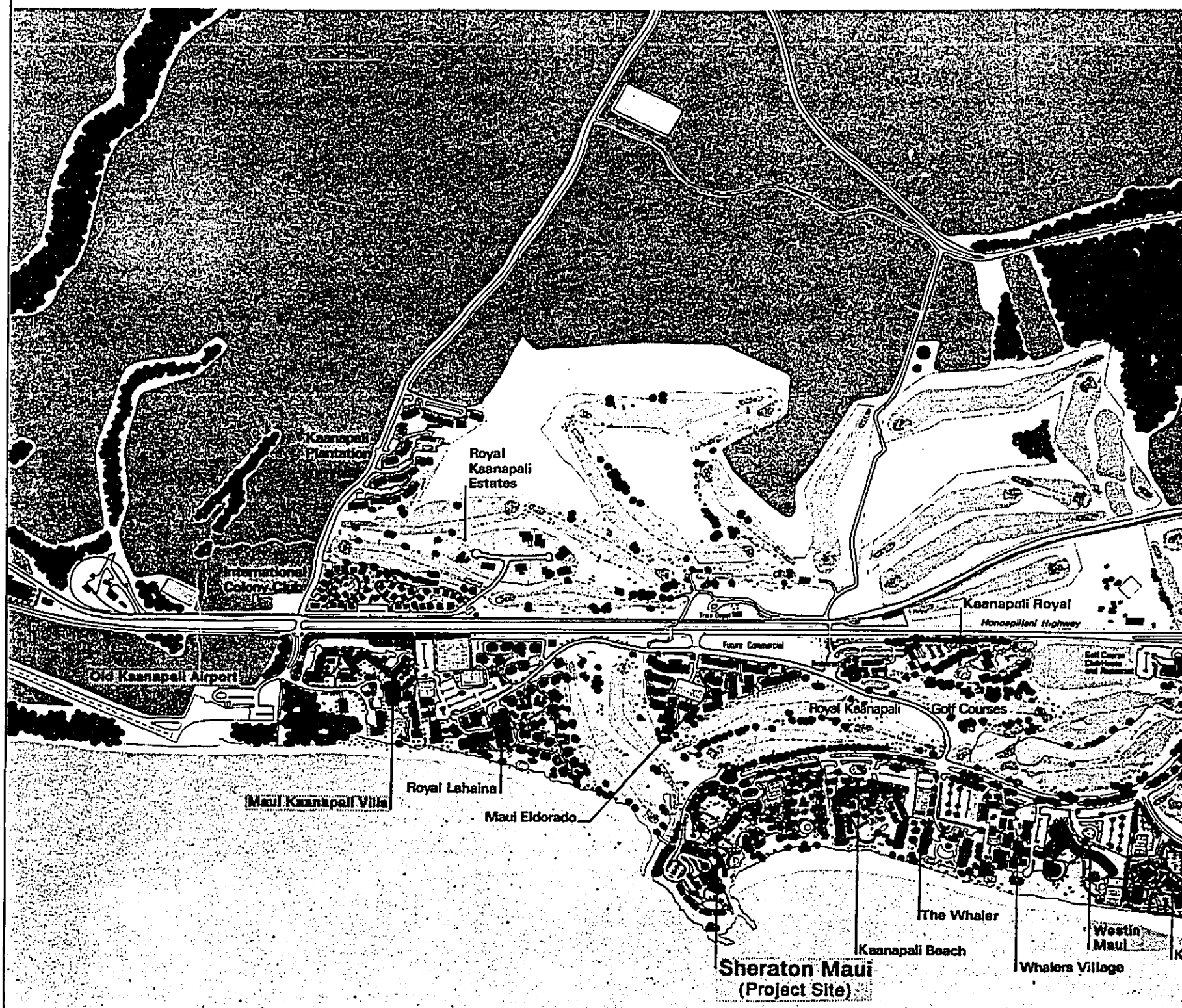
Location Map

Figure: 1

SHERATON MAUI REDEVELOPMENT

Feet
0 1750 3500

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by Amfac / JMB Hawaii, Inc.

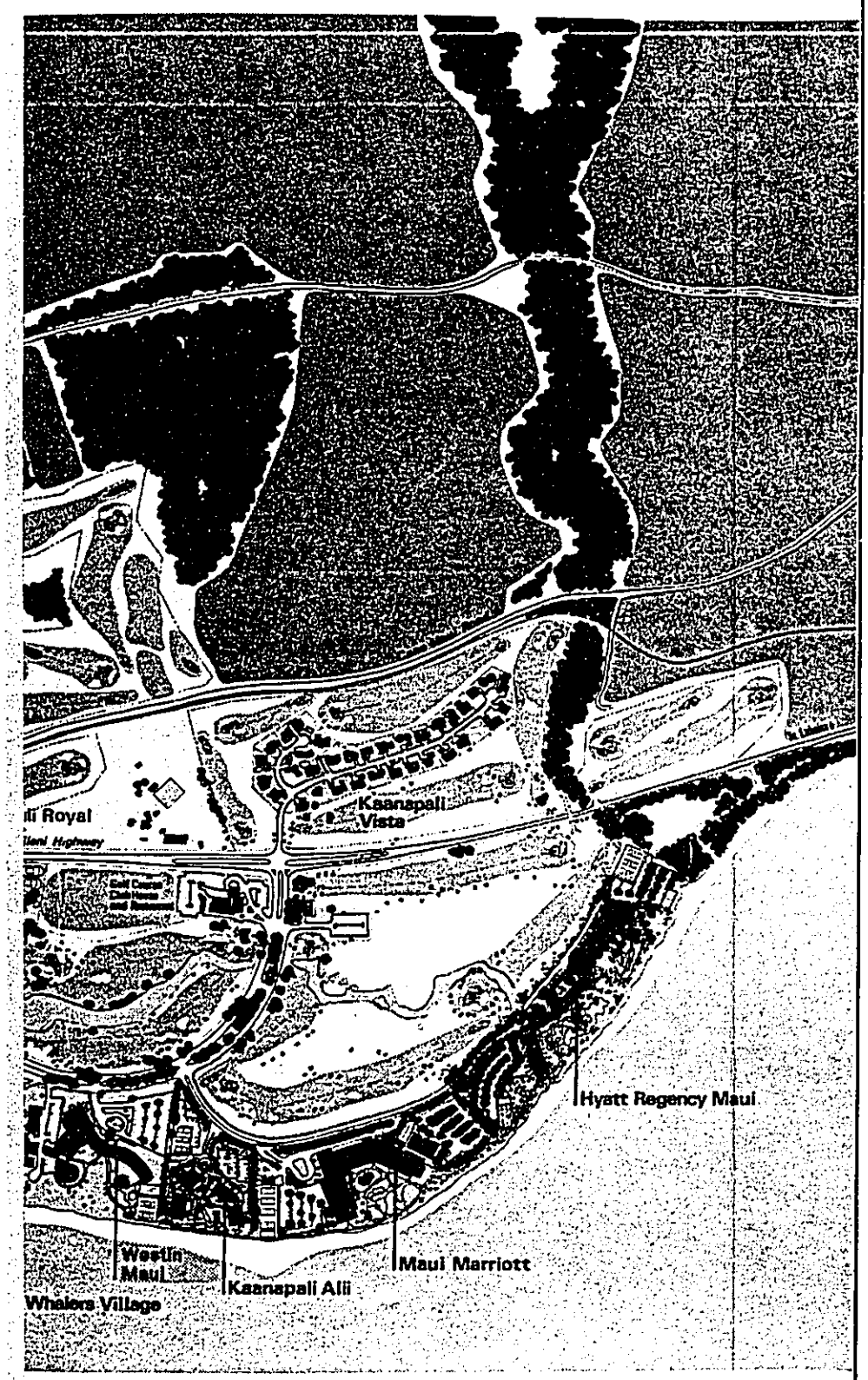


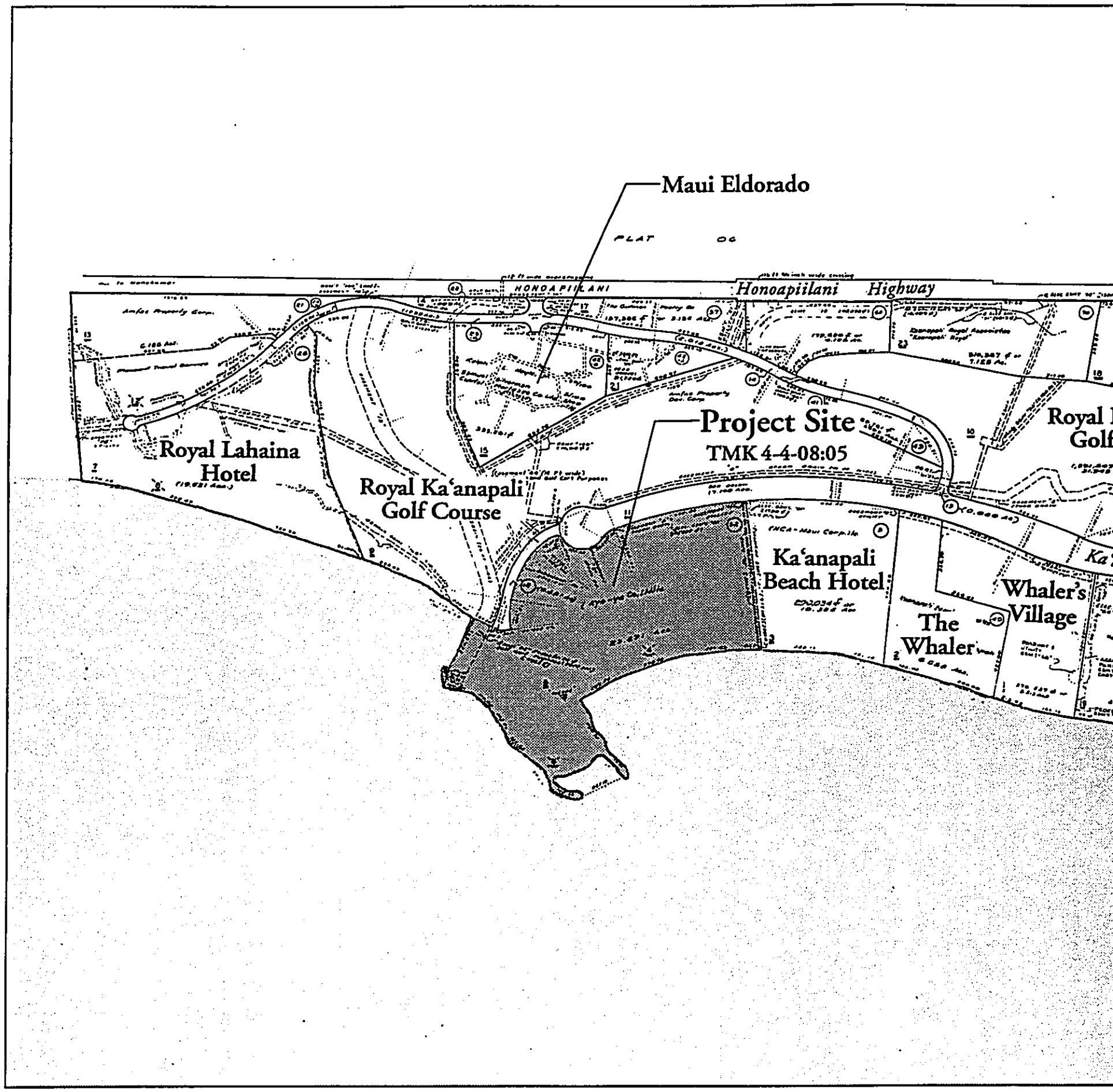
Figure: 2

Kaanapali Beach Resort
Master Plan

SHERATON MAUI
REDEVELOPMENT

Feet
0 400 800 1200

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners


Maui Eldorado
Honoapiilani Highway
Project Site
TMK 4-4-08:05
Royal Lahaina Hotel
Royal Ka'anapali Golf Course
Ka'anapali Beach Hotel
The Whaler
Whaler's Village

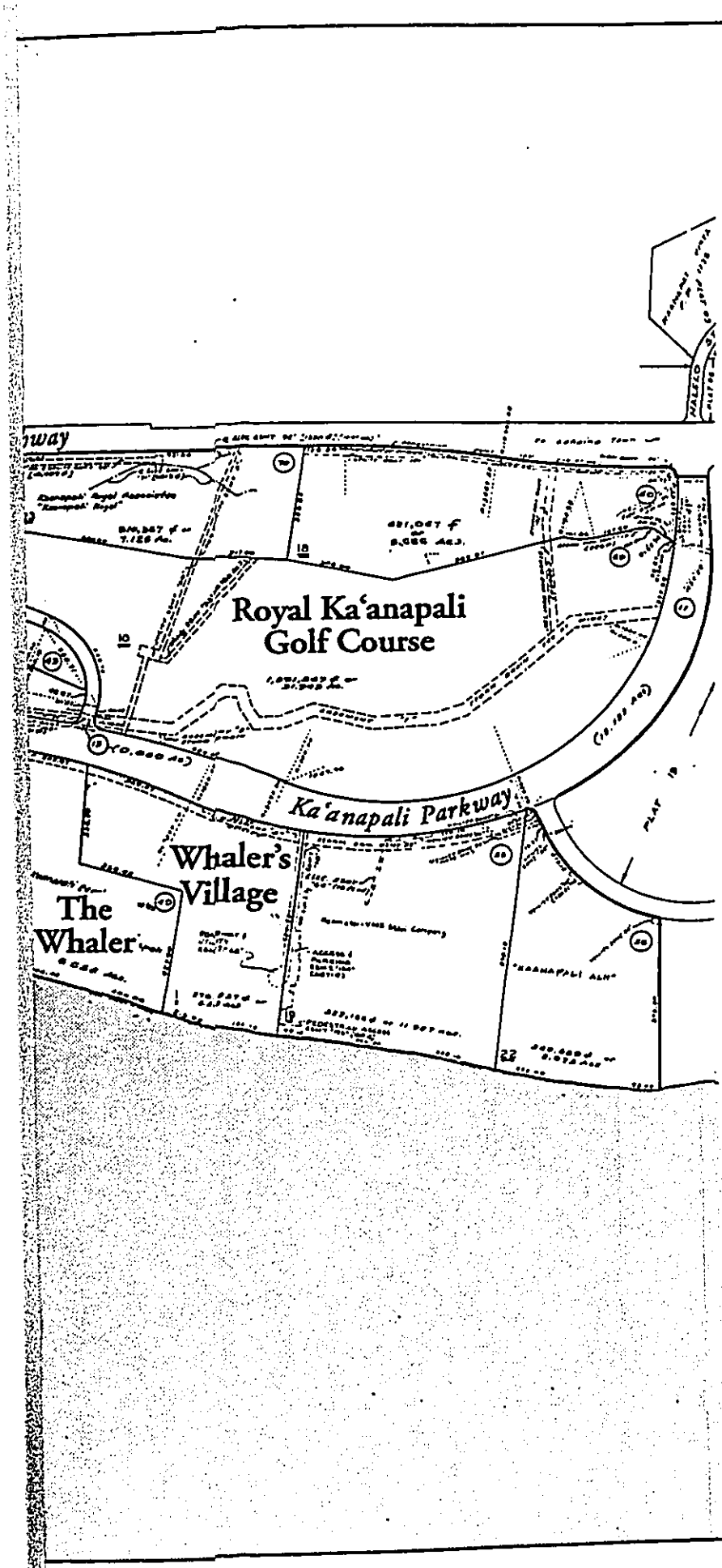


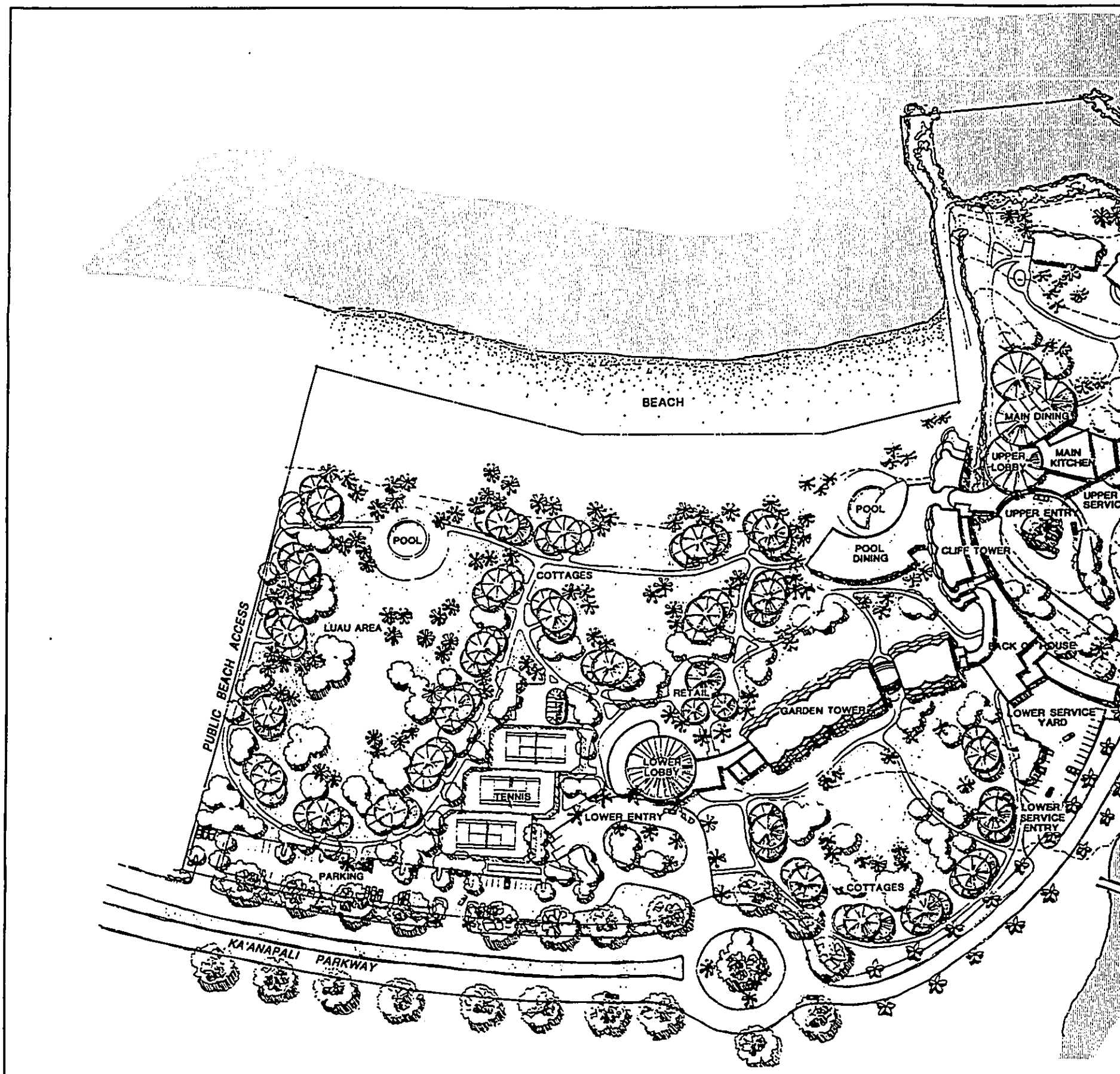
Figure: 3

Tax Map Key Location Map

SHERATON MAUI
REDEVELOPMENT

Feet
0 250 500

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G

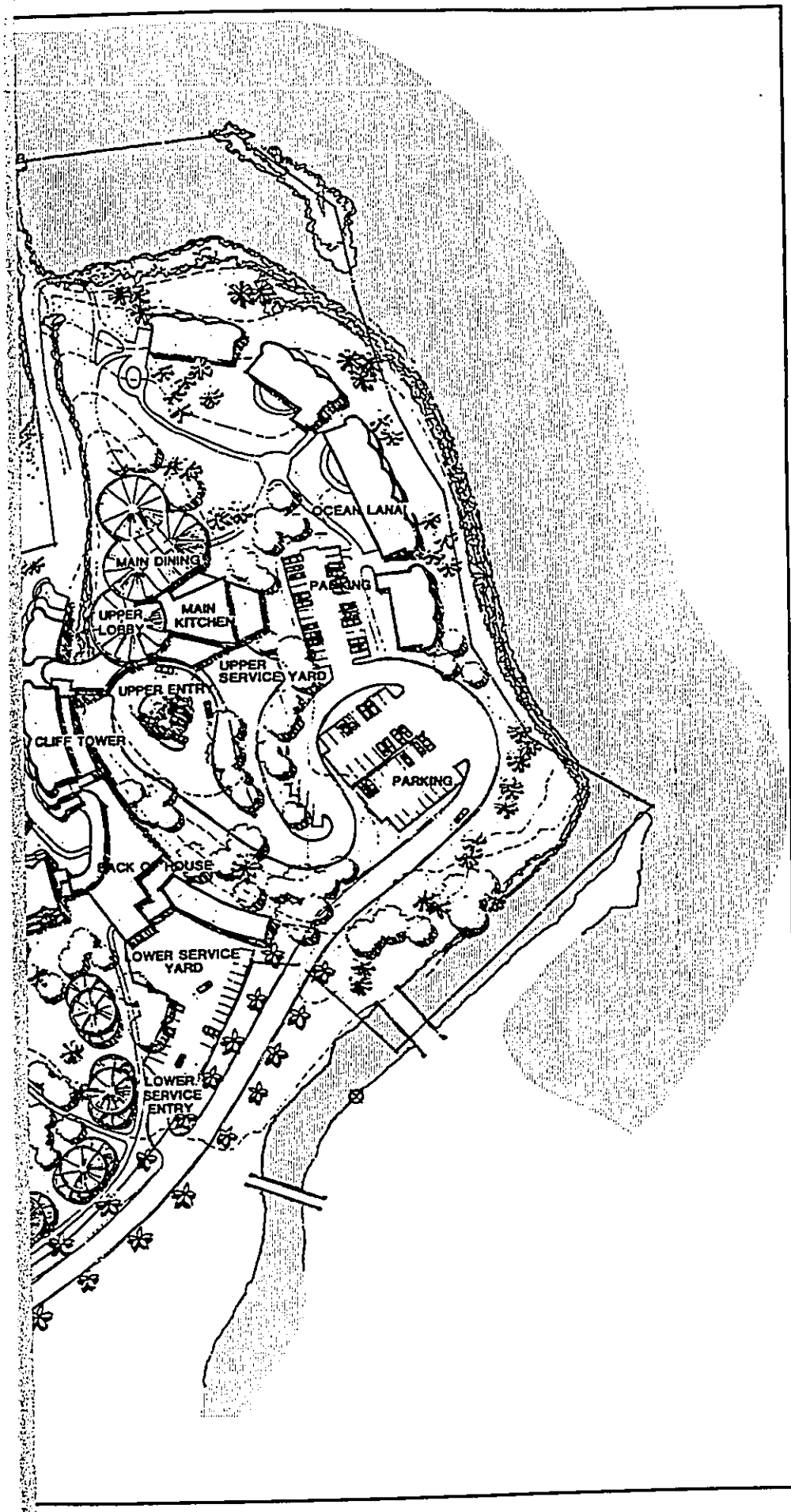


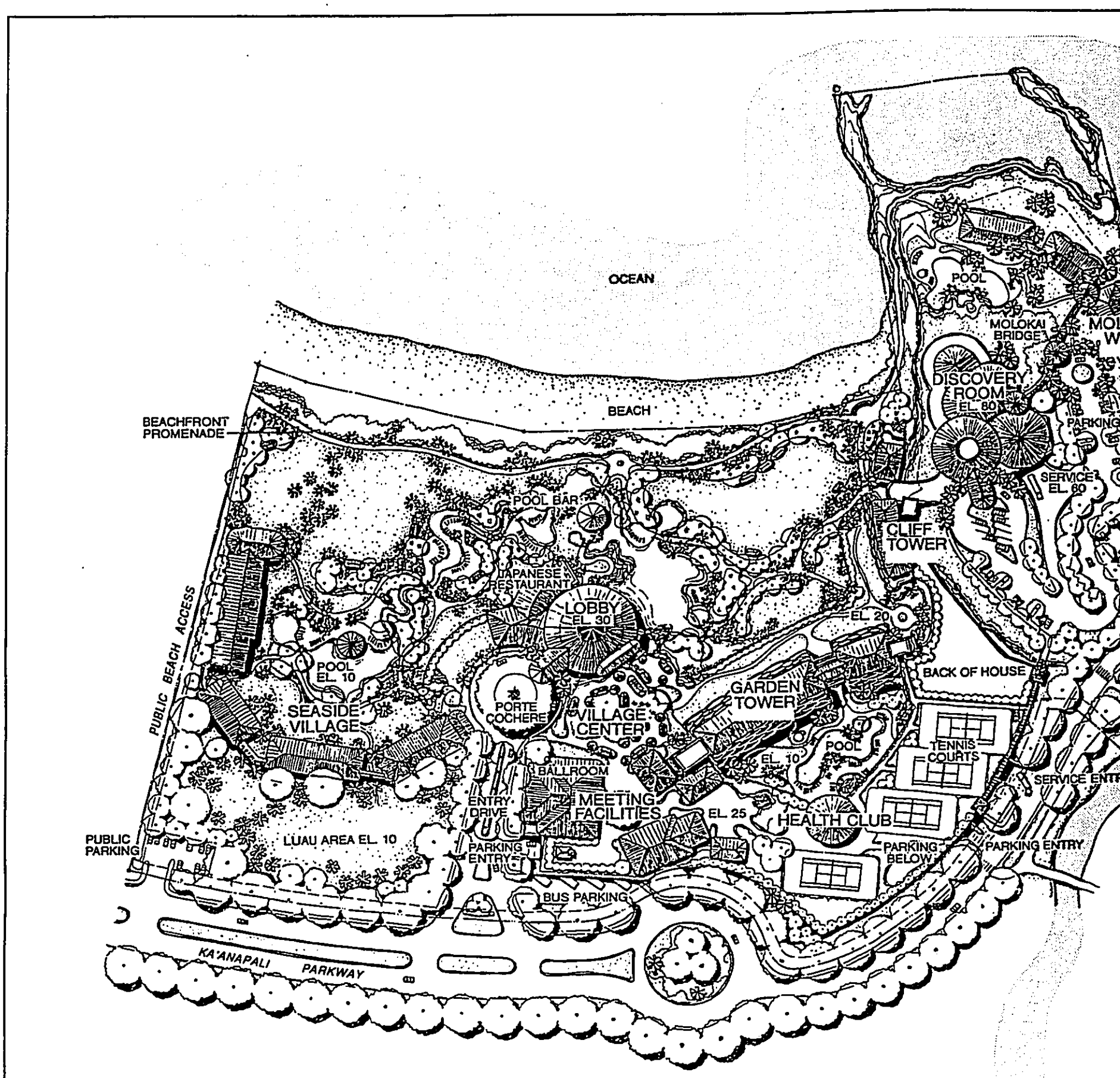
Figure: 4

Existing Site Plan

SHERATON MAUI REDEVELOPMENT

Feet
0 75 150

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Concept Design by WAT&G
May18, 1993

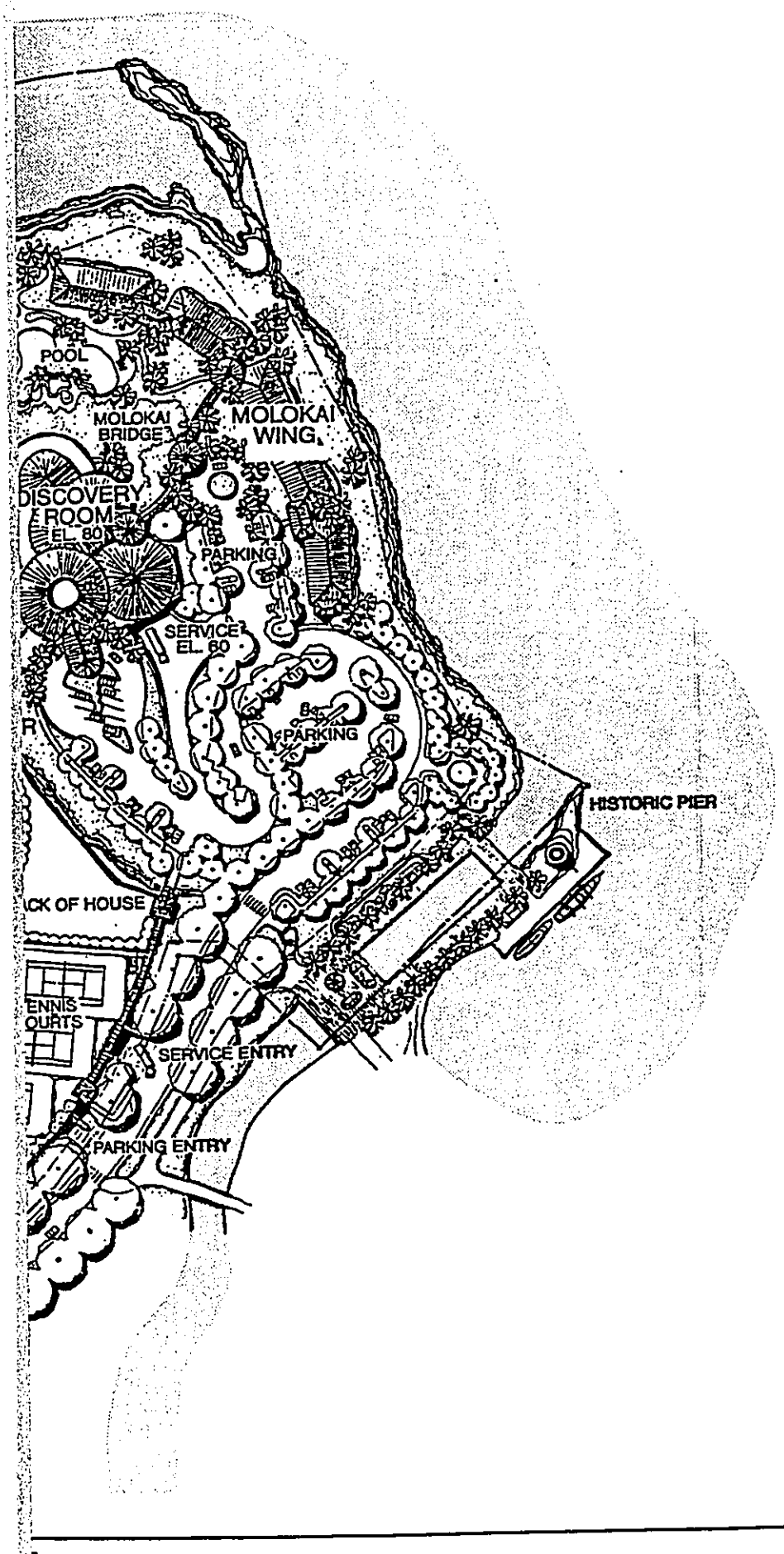


Figure: 5

Proposed Redevelopment

SHERATON MAUI REDEVELOPMENT

Feet

0 75 150

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

1) South Beach Area (Seaside Village/lobby area)
2) North Beach Area (Garden Tower and Cliff Tower)
3) Black Rock Area (Discovery Room and Molokai Wing)

The proposed improvements in each of these three areas is discussed below and are summarized in Table 1.

Table 1:
SUMMARY OF PROPOSED IMPROVEMENTS
(square feet)

	Existing	Proposed	Net Increase
Guest Rooms	240,047		
-Total keys	510 keys	510 keys	0
Discovery Room Rest.	7,000	7,000	0
Ocean Terrace Rest.	4,300	0	(4,300)
Food Court	0	4,300	4,300
Japanese Restaurant	0	2,000	2,000
Function Space (mtg./board rms)	1,050	14,000	12,950
Function Support (foyer/prefunction/ toilets)	600	4,000	3,400

The following discussion describes the hotel improvements as proposed in the redevelopment master plan. It should be noted that the master plan presented in this EA represents a maximum build-out or "worst case" scenario from an environmental impact point of view. In reality, future budget constraints may result in some downsizing of facilities (e.g., elimination of additional story to Garden Tower; downsizing health club, meeting rooms, water features, etc.).

South Beach Area

All the existing, two-story wood frame cottages, located in the southern portion of the property, will be demolished. These units will be replaced by the Seaside Village units, a U-shaped wing of guest room buildings five-stories in height. The Seaside Village buildings will be single-loaded with all rooms facing the ocean.

A new main lobby/porte cochere and a gathering area for guest activities will be constructed just makai of the existing lobby and south of the existing Garden Tower. Access to the new lobby will be provided by a new elevated driveway. The two-story lobby area will feature a reception area, cashier, office space, lobby lounge, bar and a Japanese restaurant on the upper level. The lower level will include an entertainment center, food court and swimming pool deck. A new pool bar, putting green, luau area, and beach front promenade will be linked to the lobby through a pedestrian pathway which winds its way around the swimming pool and swimming waterways on the makai and southern portions of the site.

Adjacent to the lobby, the new Village Center will be the major focus for outdoor guest activities. The Village Center will include: retail kiosks, portable food carts, open spaces for informal entertainment, new conference meeting rooms and prefunction spaces, a health spa and tennis courts. These one-story facilities will be located on the upper level of a new parking garage.

In addition, back-of-house improvements along with central mechanical and electrical equipment will be constructed on the mauka edge of the property adjacent to the new parking structure.

North Beach Area

The North Beach area includes the existing Cliff Tower and Garden Tower, both six stories in height. The Cliff Tower, the original hotel's guest room building, the will be completely renovated and will include the addition of a new pitched roof. The makai end of the ground floor of the Cliff Tower will be renovated for guest services including a service bar and snack facilities. The Ocean Terrace outdoor coffee shop located adjacent to the Cliff Tower pool area will be demolished.

The Garden Tower will also be completely renovated. The first floor of guest rooms will be remodeled to accommodate back-of-house facilities. An additional single-loaded partial floor will be added to the structure, increasing the building height from six to seven floors. That partial floor and a new pitched roof will result in a net height increase of about 20 feet to the Garden Tower.

A new one-story, single-loaded "Garden Wing" of guest rooms will be constructed adjacent to and immediately fronting (makai side) both the Cliff Tower and Garden Tower.

The existing back-of-house facilities located mauka of the Cliff Tower will be renovated after major central mechanical and electrical systems are relocated to the new parking structure.

Black Rock Area

Presently, the Black Rock level of the property includes the Discovery Room main dining room, the "original lobby" (currently used as a gift shop area), and the Molokai Wing of guest rooms.

Under the proposed plan, the original lobby and Discovery Room restaurant, bar and kitchen will be completely remodeled. The Discovery Room will be approximately the same size as at present. All new furnishings and floor finishes are proposed in the Discovery Room. The existing Lahaina meeting rooms above the kitchen will be demolished.

The old three-story Molokai Wing will be demolished and the wooden structures replaced with new non-combustible guest room buildings approximately within the same building footprint. An additional partial floor of guest rooms will be added to the Molokai Wing, increasing the Molokai Wing to four-stories in height. A new guest corridor will be provided between the beach and Molokai Wing.

A covered pedestrian walkway will connect the Molokai Wing and the Discovery Room, and a special reception lounge is proposed in this area. In addition, a new swimming pool, pool deck and bar is planned in the areas adjacent to the Molokai Wing, at the makai end of Black Rock.

Parking

Guest Parking. A new two-level parking structure for 500 cars will replace the existing guest cottages along the mauka edge of the property. The parking structure will increase the existing 203 parking stalls (some of which will be demolished) to a total of about 600 stalls, bringing the property into conformance with current zoning code parking regulations.

Employee Parking. Employee parking is currently provided off-site at the employee parking area located south of Luigi's Restaurant, at the south end of the Kaanapali Beach Resort. There will be some paid employee parking provided on-site.

Public Beach Parking. A public beach parking lot will be provided along the southern portion of the site off Kaanapali Parkway, adjacent to the public beach access. The proposed lot will have 20 parking spaces, including one handicapped stall. Public beach parking will be free of charge.

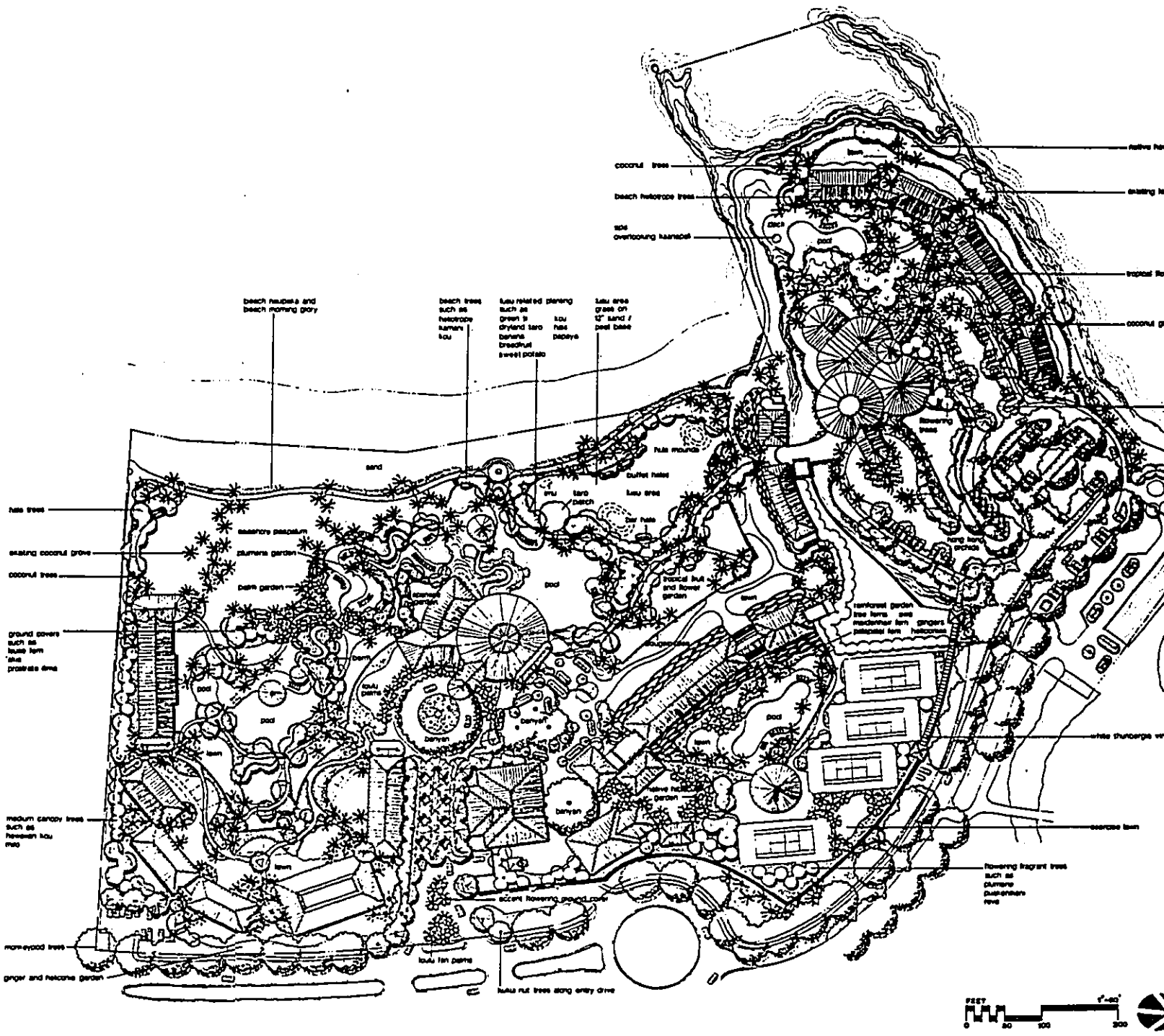
2.1.3 Landscaping/Signage/Lighting

The firm of Walters Kimura Motoda has been retained to design the project landscaping, signage and lighting. The following description of the landscape/signage/lighting plan was prepared by Walters Kimura Motoda. Appendix B includes illustrations of recommended signs, lighting fixtures and irrigation details.

(Note: The site plan shown in Figure 6 and in the illustrations by Walters Kimura Motoda in Appendix B represent an earlier version of the redevelopment master plan, which shows a different configuration for Seaside Village. However, the landscaping, signage and lighting concepts illustrated are still applicable to the current plan).

Landscaping

The proposed landscape concept (Figure 6) seeks to create a cohesive landscape design, a more attractive entry feature and better pedestrian circulation throughout the property than exist at present. This will be accomplished in an environment providing a Hawaiian experience, while creating a special place for guests to relax, play and meet other people.



Map Prepared by Walters Kimura Motoda
November 1, 1992

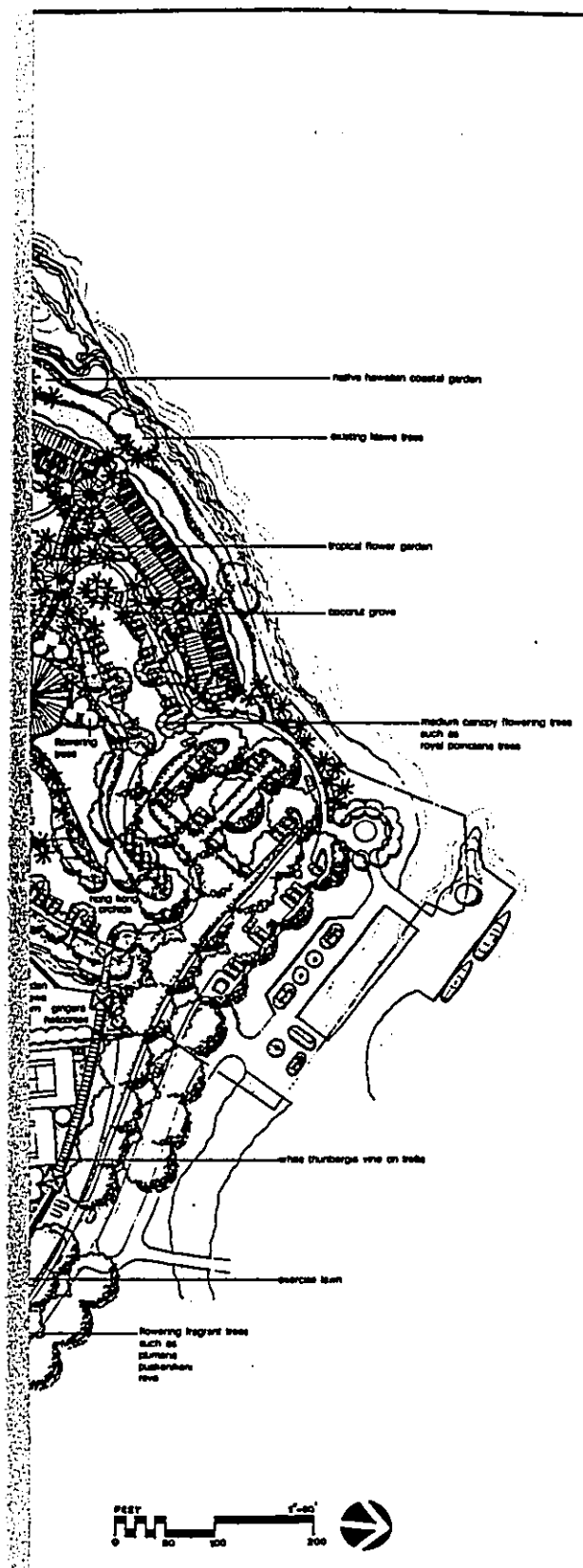


Figure: 6

Landscape Site Plan

SHERATON MAUI REDEVELOPMENT

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, Landscape concepts illustrated are still applicable to the current plan.

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

Over the years, a wide variety of plants have been added to the original planting plan, leading to a lack of cohesiveness and a sense of disarray. The proposed landscape design will combine existing and new plant material into a plan which will unify the property, creating a stronger, singular image of the hotel.

The landscape design will incorporate as many existing trees and shrubs as possible. Additional plant material will be brought in from nurseries on Maui, Oahu and/or Hawaii. All plants, including the native Hawaiian species, will be plants cultivated for landscaping purposes, and no plants will be taken from the wild.

The landscape palette consists predominantly of native Hawaiian and Polynesian introduced species, with an emphasis on drought-resistant and salt-tolerant plant material. While these plants will provide the framework for the landscaping, tropical plants will be used to add color, texture and fragrance.

The landscape plan for the hotel entry calls for a grove of stately Loulu fan palms with flowering groundcover below to accentuate the entry. A new sign wall will also be located beneath the fan palms, rather than in the grassed median, to highlight the entry.

Medium canopy trees will line the entry drive, then dramatically open up to a large Banyan tree at the porte cochere, providing the visitor with a sense of arrival. More Loulu fan palms ring the drop off area, repeating the visual imagery of the hotel entry.

On the hotel grounds, large lawn areas will provide outdoor function spaces and a sense of openness, while smaller intimate spaces will provide a peaceful, tranquil setting. Theme gardens reflecting Hawaii's rich botanical heritage will be situated throughout the property. Displays and signage will accompany the plants to explain their historical, ethnobotanical and cultural significance.

Meandering pedestrian paths will link the theme gardens and areas of the property. The proposed beach promenade links the Kaanapali Beach Hotel, to the south, with the Black Rock.

Overall, the landscape design seeks to create a place for people to relax, play and meet others by dividing the property into a series of smaller, people spaces. However, the swimming pool, walkways and plant material will serve to organize the various design elements into a cohesive whole, creating a hotel which provides a truly Hawaiian experience.

Signage

The signage for the Sheraton Maui will include directional, identification and traffic signs. Natural materials such as carved wood and stone will be used to create a feeling of old Hawaii, while Hawaiian design motifs will provide a unifying element and reinforce the Hawaiian experience. The intent of the signage is not only to direct and inform guests and visitors, but to also provide insight into the history and culture of Hawaii.

Hawaiian petroglyphs, appropriate to the subject matter of the individual signs, will be carved into the directional and identification signs. The signs for the theme gardens will feature relief carvings of Hawaiian quilt patterns.

Large ground signs will be supported by a stone wall base, while small ground signs will be hung from traditional Hawaiian "storage racks" which were used to hang calabashes.

Traffic signs will use internationally-recognized symbols and be of sufficient size and quality to ensure public safety.

Appendix B includes the proposed signage plan for the hotel, illustrating recommended sign locations and examples of typical signs.

Lighting Concept

The landscape lighting concept is intended to provide varying light levels throughout the property to evoke specific moods while ensuring the safety and security of hotel guests. Activity areas will be brightly lit to accommodate night functions, while other areas will have more subdued lighting to create a peaceful, relaxing atmosphere. A combination of tiki torches, well lights, accent lights, path lights and moonlighting will be used.

Tiki torches will be used primarily in the luau area and long the edges of the swimming pool. Well lights (located in lawn areas) and accent lights (in groundcover areas) will be used to illuminate the entry sign wall, trees, shrubs and other items of interest. Both will be directed away from observers to prevent direct glare.

Path lights will be located where the tiki torches, well lights and accent lights do not provide adequate ambient light to ensure guest safety and security. For example, path lights will be placed in areas where there are obstacles or stairs.

The illustrations in Appendix B show some examples of the types of lighting fixtures recommended and their proposed locations.

Through proper selection and location of light fixtures, the landscape lighting design will add to the aesthetic enjoyment of the hotel at night, while ensuring safety and security.

2.1.4 Old Pier

The plan for the Sheraton Maui redevelopment includes a long-term development concept for restoration of the old pier, located on the northernmost end of the site. The pier is partially owned by the applicant, and partially owned by Amfac/JMB Hawaii, Inc., the adjacent landowner. The applicant's portion of the old pier is included in the petition for Special Management Area use permit.

The restored pier could be used as a staging area for recreational and commercial boating activities. Although the owner/applicant would be willing to participate with the State and other landowners in the pier renovation, it does not intend to take the lead on this component of the master plan.

Environmental and Planning Issues

Because there are no detailed plans for renovation of the old pier at this time, this EA does not include a detailed analysis of impacts related to that action. Should renovation of the old pier go forward at a later date, a supplemental environmental assessment may be required. Major issues and potential environmental impacts which may need to be considered include: water quality; marine biology and impacts on endangered species; ocean currents/beach dynamics; impacts to other ocean recreation uses (e.g., scuba, swimming, fishing, etc.); impacts to the adjacent golf course routing; drainage and other infrastructure; public access; traffic impacts; impact on historic resources; compliance with federal, State and County regulatory requirements; and economic feasibility.

Permits and Approvals

Depending on its scope, this project may require a Department of the Army (DA) permit (i.e., Section 404 or Section 10) from the Army Corps of Engineers, which regulates activities in U.S. waters. The Corps of Engineers regulatory activities and responsibilities encompass a number of federal laws and regulations and may require extensive interagency review and approvals.

The following is a preliminary listing of permits and approvals which could be required for redevelopment of the old pier. Actual requirements will depend on the actual scope of the project.

Federal

- Department of the Army (DA), Section 404 and/or Section 10 permits. DA permits may be affected by the laws and regulations listed below. Permit could involve approvals and possibly permits from other federal and/or State agencies (e.g., National Marine Fisheries Service, National Oceanographic and Atmospheric Administration, State Department of Health, Office of State Planning, Department of Land & Natural Resources-Historic Preservation Division, etc.).

- National Environmental Policy Act (NEPA)
- Clean Water Act
- Endangered Species Act
- Marine Mammal Protection Act
- Fish & Wildlife Coordination Act
- National Historic Preservation Act
- Coastal Zone Management Act

State

- Chapter 343, HRS, Environmental Assessment. The project may require an environmental assessment pursuant to Chapter 343 HRS, for use of State lands or funds or development within the shoreline setback area.
- Department of Health, Section 402, National Pollutant Discharge Elimination System (NPDES) permit (if project includes any discharge into ocean)
- Department of Health, Section 401, Water Quality Certification (required for DA Section 404 permit)
- Office of State Planning, Coastal Zone Management Federal Consistency Review (required with all DA permits)
- Dept. of Land & Natural Resources, Conservation District Use Application (CDUA) (for development within State Conservation District)
- Dept. of Land & Natural Resources, Shoreline Certification

County

- Construction/Building Permits

2.2 Alternatives Considered

2.2.1 No-Action Alternative

The no-action alternative would continue the operation of the hotel in its current condition. This alternative would not allow the hotel owner to upgrade the overall appearance and physical condition of the hotel, nor allow it to meet current County structural design, parking and federal Americans With Disabilities Act (ADA) standards.

Existing termite damaged wooden structures would continue to deteriorate as well as pose a fire safety hazard. The quality and condition of existing bathrooms, dining facilities, meeting rooms, fixtures and mechanical equipment would limit the hotel's marketability. Facilities would fail to meet current ADA standards and would limit accessibility for handicapped persons.

The outdated mechanical plant would continue to operate inefficiently. Through time, the aging facilities would cause more costly maintenance and upkeep.

Overall, the hotel's competitive market position would suffer and its physical condition would continue to deteriorate, eventually causing a health and safety hazard. A deteriorated facility could also negatively affect the overall desirability and marketability of the Kaanapali Beach Resort area.

2.2.2 Renovation Phasing Alternative

Several alternatives for phasing the hotel renovation were considered. Two different scenarios for phasing the construction in these areas were examined, as well as the proposed "simultaneous phasing" which requires that the hotel be closed to guests.

The proposed hotel improvements were divided into three major geographical areas for construction, with work progressing from one area to the next. In the two phasing scenarios, the major constraint was providing continuous food and beverage service, as well as maintaining a functioning lobby area and administrative services. The phasing scenarios required between 18 and 20 months for construction, compared to 12 months for the proposed option.

Overall, the phasing scenarios were judged to be less desirable than the simultaneous phasing alternative. Ongoing construction activity would subject guests to noise, dust and inconvenience, leaving a negative impression of their visit. A longer construction period would increase dust and noise impacts to adjacent properties, such as the Kaanapali Beach Hotel. Moreover, a longer construction period would result in construction costs between $3 and $4 million higher than with the preferred alternative.

2.3 Consulted Agencies

The following agencies were sent "pre-consultation" packages (with a description of the proposed renovation project) during preparation of the Draft EA as well as copies of completed Draft EA document. Comment letters received during the pre-consultation period are attached as Appendix F. Comments to the Draft EA are attached as Appendix G.

Federal Agencies

Department of the Army, Corps of Engineers
*U.S. Department of Agriculture, Soil Conservation Service

State Agencies

Department of Health
Department of Land & Natural Resources
Department of Land & Natural Resources, State Historic Preservation Division
Department of Transportation
**Department of Accounting and General Services (Survey)
**Department of Business, Economic Development & Tourism

Maui County Agencies

Department of Planning
Department of Public Works
Department of Parks and Recreation
Department of Human Concerns
Department of Water Supply
Department of Land Use and Codes
**Maui County Police Department
**Maui County Fire Department

Other

Maui Electric Company

*Agencies sent pre-consultation package only.
**Agencies sent Draft EA only.

In addition to the public agencies listed above, the Sheraton Maui will be meeting with adjacent property owners (e.g., Amfac/JMB Hawaii, Inc., Owners Association of Eldorado Resort Condominium and Kaanapali Beach Hotel) to discuss the proposed project.

III.

Relationship of the Proposed Project to Existing Public Plans, Policies and Controls

III. RELATIONSHIP OF THE PROPOSED PROJECT TO EXISTING PUBLIC PLANS, POLICIES AND CONTROLS

3.1 Hawaii State Plan

The Hawaii State Plan (Chapter 226 Hawaii Revised Statutes, as amended) establishes a set of guidelines for the statewide planning system, and provides the overall theme, goals, objectives, policies, and priority guidelines. The following describes the purpose of the State Plan.

> "...[it] shall serve as a guide for the future long-range development of the State; identify the goals, objectives, policies, and priorities for the State; provide a basis for determining priorities and human resources, land, energy, water, and other resources; improve coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities; and to establish a system for plan formulation and program coordination to provide for an integration of all major state and county activities" (Chapter 226-1: Findings and Purpose, HRS).

The proposed action is basically consistent with the goals, objectives, policies and priority directions of the Hawaii State Plan. The following section analyzes the impacts of the project with respect to four substantive areas of the Hawaii State Plan: the economy, the population, the physical environment and facility systems.

Economy

Relevant objectives and policies in this area focus on the State's economy in general and the visitor industry. Specific objectives include increased employment opportunities, income, and job choice and a visitor industry that constitutes a major component of steady growth for Hawaii's economy.

The proposed action will contribute to the attainment of the economic objectives by creating and retaining permanent jobs within the visitor industry, creating short-term construction jobs and improving the quality of the overall Kaanapali visitor destination area by reinvesting in the existing physical facilities. The project will help maintain the high standard of development set by the existing Kaanapali Beach Resort.

Population

The objective of the population element of the Hawaii State Plan is the guidance of population growth consistent with the physical, economic and social objectives of the Plan. A policy established by the Plan to achieve its population objective is the encouragement of an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires, and to ensure that adequate support services and facilities are provided to accommodate the expansion.

The proposed project will result in direct and indirect jobs and economic opportunities, and by enhancing the quality and competitiveness of the hotel and its facilities, ensure greater job stability for its employees.

Physical Environment

Objectives and policies for the physical environment relate to the enhancement of terrestrial, aquatic, shoreline and marine resources and scenic, aesthetic, and historic resources. Essentially, these objectives seek to encourage the prudent use of Hawaii's natural resources.

The proposed action will not adversely affect natural resources of the area. The hotel renovation will retain the existing guest unit (key) count and low density ambiance. Increases in building heights will be minimal, and far less than the 12-story heights allowed under County zoning. Beach access will be maintained and enhanced through the provision of 20 public beach parking spaces and by construction of a public walkway across the beachfront of the property. Access to Black Rock from the beach area will be maintained.

An archeological inventory survey was conducted within areas proposed for subsurface excavation. The survey did not find any significant cultural deposits or burials.

Because there will be no net increase in hotel keys, and therefore hotel guests, there will be no significant increase in traffic, noise levels, or air pollution, with the exception of temporary, construction-related impacts.

Facility Systems

Relevant objectives and policies for facility systems focus on three areas: solid and liquid wastes; water and transportation. These objectives seek to ensure that adequate infrastructure will be provided to accommodate present residents and future population growth. Because the proposed action will not result in any net increase in hotel room keys, impact on existing infrastructure systems will be minimized. A slight increase in water, wastewater and electrical demand will be accommodated by the existing systems. The additional meeting and restaurant facilities will have a nominal impact on traffic, and no traffic mitigation measures are recommended with the proposed project. These issues are discussed further in Chapter IV.

3.2 State Functional Plans

The Hawaii State Plan directs the appropriate State agencies to prepare functional plans for their respective program areas including: education, employment, health, housing, human service, agriculture, conservation lands, energy, higher education, historic preservation, recreation, tourism, transportation, and water resources development. These functional plans serve as the primary vehicles for the implementation of the goals, objectives and policies of the Hawaii State Plan. The following functional plans were found to have the most relevance to the proposed Sheraton Maui Hotel renovation.

3.2.1 State Tourism Functional Plan

The State Tourism Functional Plan, developed by the Tourism Office of the Department of Business, Economic Development and Tourism, guides government and private sector implementation of the visitor industry objectives, policies, and Priority Guidelines set forth by the Hawaii State Plan. The State Tourism Functional Plan seeks to achieve "a visitor industry that constitutes a major component of steady growth for Hawaii's economy," while protecting the quality of life and well-being of the people of Hawaii.

The proposed project will invest capital to upgrade the physical plant of a hotel within the Kaanapali Beach Resort, one of Hawaii's finest resort areas. The proposed development will increase the attractiveness and quality of both the Sheraton Maui and the overall Kaanapali visitor destination area by augmenting its existing high quality development. This will be accomplished without a net increase in hotel rooms (keys), and while maintaining the hotel's low density ambiance.

3.2.2 State Recreation Functional Plan

The State Recreation Functional Plan, prepared and maintained by the State Department of Land and Natural Resources, seeks to: 1) assess present and potential demand and supply of outdoor recreation resources and to guide State and County agencies in acquiring or preserving lands of recreation value; and 2) provide adequate recreation facilities and programs; and 3) to ensure public access to recreation areas.

The proposed action will have a positive effect on the area's recreational resources. A total of 20 public beach parking spaces will be provided at Kaanapali Parkway, next to the public beach access. The lateral beach walkway from the south will be extended through the Sheraton property, terminating at the base of Black Rock. This will facilitate public access to the beachfront areas of the hotel and to Black Rock.

3.2.3 State Housing Functional Plan

The State Housing Functional Plan (prepared and maintained by the Housing Finance and Development Corporation) is a working tool to guide the State, counties and the private sector in achieving the overall goal that every Hawaii resident will have the opportunity to live in a safe, decent and affordable home. The Plan's implementing actions focus on the following six areas: (1) increasing homeownership; (2) expanding rental housing opportunities; (3) expanding rental opportunities for the elderly and other special need groups; (4) preserving housing stock; (5) designating and acquiring land that is suitable for residential development; and (6) establishing and maintaining a housing information system.

Because there will be no net increase in hotel rooms/keys, the County of Maui has indicated that the project is excluded from the County's affordable housing policies for hotel-related developments.

3.2.4 State Historic Preservation Functional Plan

Prepared and maintained by the State Department of Land and Natural Resources, the State Historic Preservation Functional Plan provides guidelines for the delivery of services and the allocation of resources by State agencies with respect to the preservation of history and the heritage of Hawaii. The Plan's objectives, policies and implementing actions cover the following areas: (1) historic records, artifacts, oral

histories and traditional arts and skills; (2) historic properties; and (3) public information.

As indicated above, a subsurface archaeological inventory survey was conducted to determine the presence of absence of cultural deposits and/or burials. No cultural deposits or burials were found. Archaeological monitoring will be conducted during construction excavation.

One of the goals of the petitioner is to provide a better understanding of the Hawaiian culture to hotel guests and employees. This goal will be incorporated into many facets of the proposed action, including the incorporation of native plant species in the landscaping plan; inclusion of botanical theme gardens with educational displays explaining their historical and cultural significance; and use of traditional artifacts and exhibits in displays on the hotel grounds. A primary focus of the educational and informational efforts will be Puu Kekaa or Black Rock, a State historic site with significant cultural and historical interest. Historic and cultural resources are discussed further in Chapter IV.

3.2.5 State Transportation Functional Plan

The State Transportation Functional Plan (prepared and maintained by the State Department of Transportation) is directed "toward the ultimate development of a balanced, multi-modal statewide transportation system that serves clearly identified social, economic, and environmental objectives." The Plan sets forth separate programs for energy conservation and the statewide airport, highways, and harbors transportation systems.

Honoapiilani Highway is the major arterial in West Maui and was recently widened between Kaanapali and Lahaina. The State Department of Transportation is proposing a mauka by-pass highway which would divert through traffic around Lahaina and Kaanapali, thereby reducing traffic congestion on Honoapiilani Highway.

A traffic impact assessment for the proposed action was conducted by Parsons Brinckerhoff Quade & Douglas, Inc. The findings and recommendations of this assessment are discussed further in Chapter IV.

3.3 State Land Use Law

All lands within the State have been placed in one of the four land use districts (Urban, Rural, Agriculture, and Conservation) by the State Land Use Commission (LUC) in accordance with the 1961 State Land Use Law (Chapter 205, HRS). The entire project site is within the State Urban Land Use District. The proposed action is therefore consistent with the State Land Use Law.

3.4 Maui County General Plan

The General Plan of the County of Maui, 1990 Update, was adopted by County ordinance in 1991. The intent of the Maui County General Plan, as expressed in the Maui County Charter (Section 8-8.5), is "to recognize and state the major problems and opportunities concerning the needs and the development of the county and the social, economic and environmental effects of such development to set forth the desired sequence, patterns and characteristics of future development."

The General Plan contains objectives and policies for the County, which provide a framework for future decision making. The objectives and policies cover the following seven areas: population, land use, and the environment; economic activity; housing and urban design; transportation; social infrastructure; government; and Kahoolawe, Molokai and Lanai.

The proposed Sheraton Maui redevelopment supports the General Plan's visitor industry economic objectives of (1) encouraging exceptional and continuing quality in the development of visitor industry facilities; and (2) controlling the development of visitor facilities so that it does not infringe upon the traditional social, economic and environmental values of our community [II B 1-2 Objectives].

Stated policies to accomplish these objectives include: "Limit visitor industry development to those areas identified in the appropriate community plans..." and "Encourage enhancement of existing visitor facilities without substantial increases in room count." The Sheraton Maui is located in the existing Kaanapali Beach Resort area, which has been identified as a primary visitor area in the Community Plan. The proposed redevelopment will upgrade existing facilities with no increase in guest room count.

The project is also consistent with the stated General Plan policies to locate buildings so as to retain scenic vistas and to use local manpower in the construction and operation of facilities.

The actual implementation program for the County General Plan policies are contained in the nine district-specific Community Plans. The subject property falls under the jurisdiction of the Lahaina Community Plan District.

3.5 Lahaina Community Plan

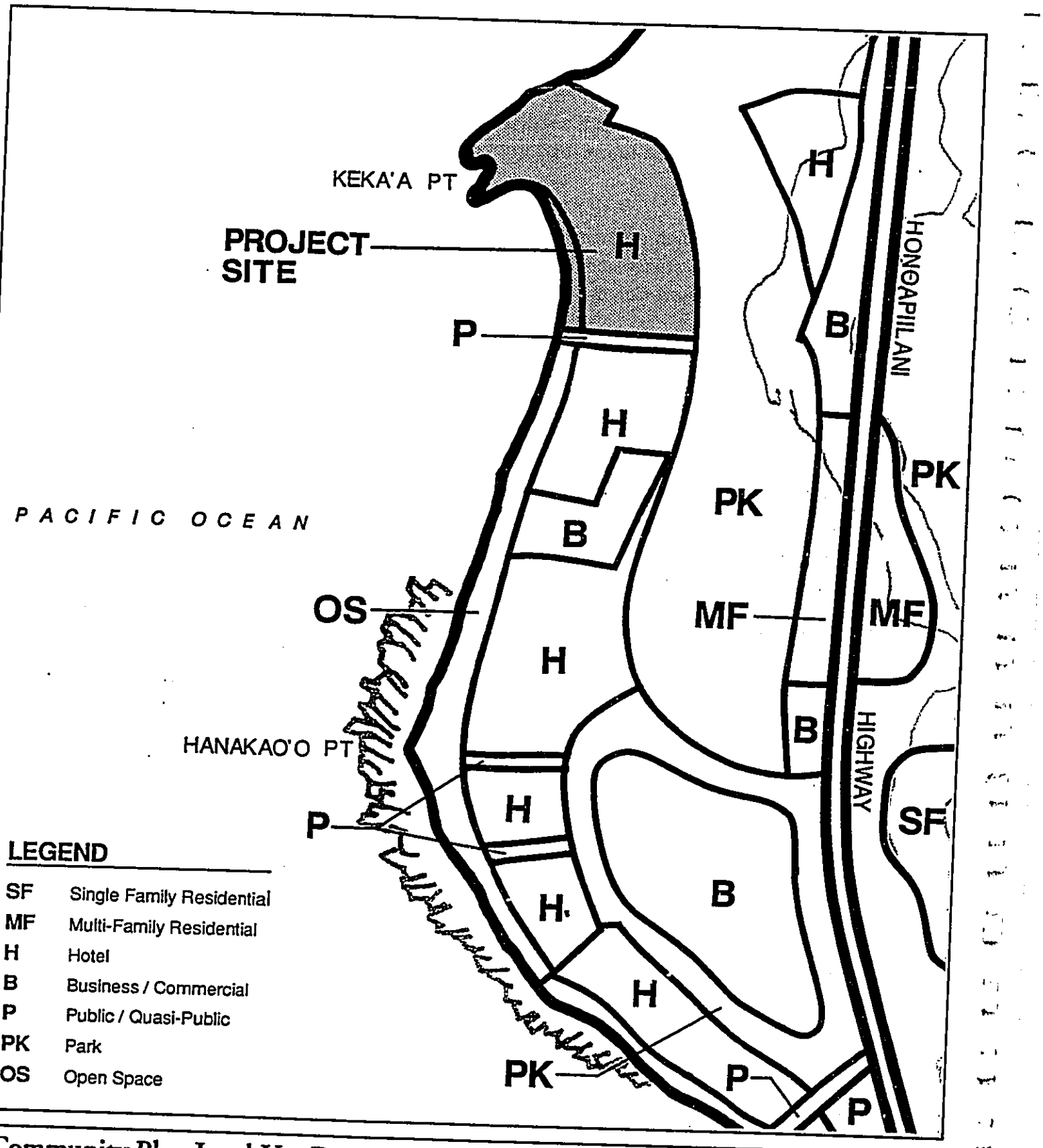
The Lahaina Community Plan (1983 as amended), mandated by the Maui County Charter and the Maui County General Plan, establishes a program for implementing the County General Plan within the Lahaina region. It sets the desired sequence, patterns and characteristics of future development in the region, and serves as a guide for decision making until the Year 2000. (The 1983 Lahaina Community Plan is currently in the process of being revised by the County and its community advisory committees.)

Community Plan recommendations cover five major areas: a) socio-economic aspects, b) physical aspects, c) support systems: utilities and facilities, d) support systems: human services, and e) government. A discussion of these recommendation areas with respect to the proposed project follows.

3.5.1 Socio-Economic Aspects

The Community Plan recommendations regarding socio-economic aspects encompass economic activity and population. The proposed action will upgrade the physical condition of the existing hotel, although there will be no net increase in guest units (keys). The renovation will enhance the economic viability of the hotel, also contributing to the Kaanapali Resort area's economic well-being. The project will result in short-term construction employment and additional indirect and induced jobs in other sectors of the economy.

The Lahaina Community Plan Land Use Map (Figure 7) recognizes the Kaanapali Beach Resort area as a major tourist destination, including hotel uses, which will be unchanged by the project.



Community Plan Land Use Designations

SHERATON MAUI REDEVELOPMENT

Figure: 7

Feet
0 350 700

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

3.5.2 Physical Aspects

Specific recommendations in the Community Plan regarding the environment include the formulation of a drainage master plan emphasizing land management techniques using natural drainageways and protecting nearshore environments and water quality. The proposed action will not have a significant impact on existing drainage patterns or have an adverse effect on nearshore environment or water quality.

3.5.3 Support Systems: Utilities and Facilities

The Community Plan recommends improvements to the Honoapiilani Highway, the primary thoroughfare through the Lahaina and West Maui area. These include the establishment of turning lanes and coordinated traffic signals, highway widening, and the construction of bikeways and walkways.

With or without the project, intersection improvements are currently needed at the Honoapiilani Highway/Kaanapali Parkway intersection. The traffic impact assessment describes these necessary improvements to increase capacity and reduce existing congestion.

Existing utility systems are able to accommodate the renovated hotel's electrical, water and sewerage demands.

3.5.4 Support Systems: Human Services

The Plan's recommendation regarding human services include improving recreation facilities, health and public safety services, and educational facilities; and providing a variety of housing choices and prices via public and private sector projects to area residents and employees. The project is expected to generate a small increase in County and State revenues, due to the hotel's enhanced marketability overall, and its improved ability to attract a convention-oriented market. These revenues will enhance the ability to provide public support services. In addition, the project will create temporary construction jobs and create indirect and induced employment.

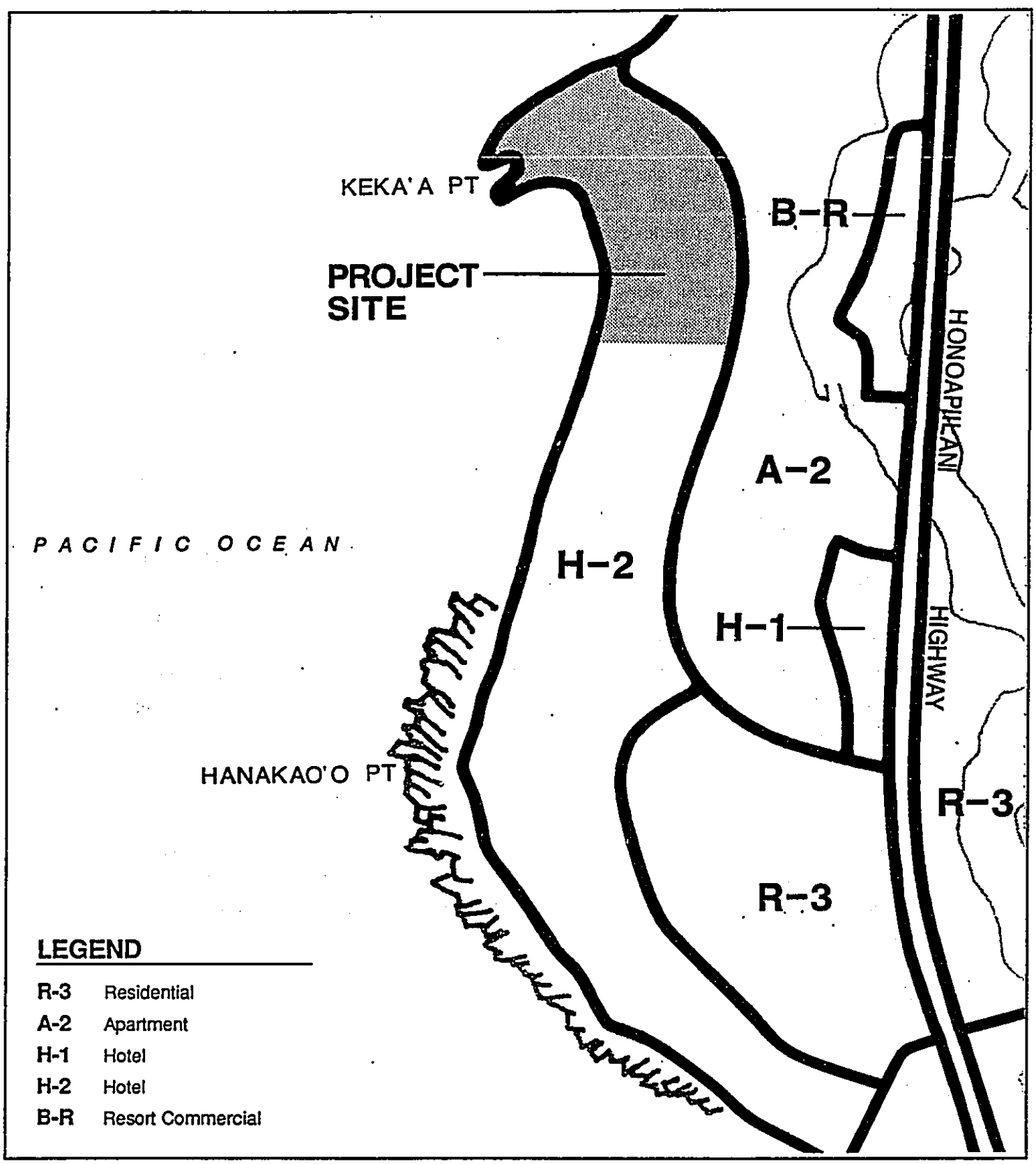
3.6 County Zoning

The project site is zoned H-2 (Hotel), allowing for hotel developments and their accessory uses (Figure 8). The minimum lot area within the H-2 zoning district is 10,000 square feet and the maximum building height is 12 stories. The total ground area occupied by buildings shall not exceed 35 percent and the floor area-lot ratio shall not exceed 150 percent. The minimum side yard spacing is 25 feet for 8-story buildings, with front yard spacing requirements 1/2 the height of buildings, with a minimum of 15 feet. The proposed action is consistent with all zoning standards. The maximum building heights proposed (2, 3 and 4 stories) will be far below the maximum of 12 stories allowed under existing zoning designation.

3.7 Coastal Zone Management/Special Management Area

In an effort by the State of Hawaii to preserve and protect the natural resources of the coastal zones, special controls on development along the shoreline have been implemented, as contained in Chapter 205A, Hawaii Revised Statutes, as amended. Chapter 205A, HRS, as amended, defines the Coastal Zone Management Area to be all the areas of the State of Hawaii, except for forest reserve areas. In addition, Chapter 205A, as amended, contains the general objectives and policies, upon which all counties within the State of Hawaii have structured specific legislation which created Special Management Areas (SMA) for each County.

Maui County has adopted SMA boundaries and Rules and Regulations for the SMA which are consistent with Chapter 205A, as amended. (The Maui County rules are discussed in Section 3.9). The proposed action is defined as development, pursuant to Section 2-5 of the SMA Rules and Regulations for Maui County, and is therefore subject to review under those provisions. In addition, the SMA Rules and Regulations of Maui County require that any development proposed within the SMA boundaries be consistent with the Specific Objectives and Policies of Chapter 205A. These objectives and policies are discussed below.



County Zoning Map

Figure: 8

SHERATON MAUI REDEVELOPMENT

Feet
0 350 700

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

Recreational Resources

This objective deals with the provision of coastal recreational opportunities to the public. The proposed hotel renovation will not have an adverse impact on coastal resources, nor will it impede existing access to the shoreline. A total of 20 public beach parking spaces will be created near the public beach access road at Kaanapali Parkway. Lateral access along the shoreline fronting the hotel will be enhanced, through construction of a beach promenade along the frontage of the hotel property. Access to the top of Black Rock will be maintained.

Scenic and Open Space Resources

This objective deals with protection and preservation of coastal scenic and open space resources. Visual impacts of the proposed action are described and analyzed in Chapter IV. Based on the visual analysis, the proposed action will not adversely affect the quality of coastal scenic and open space resources. While some structures will be slightly higher than at present, the modifications will be barely noticeable from off-site. Structures will be clustered in groups of smaller buildings rather than a few monolithic structures. Visual impacts will be mitigated further through the use of suitable building materials, color schemes and generous landscaping. Finally, it should be emphasized that the proposed building heights are well below the maximum 12-story heights allowed under existing County zoning.

Economic Uses

This objective attempts to direct public or private facilities to suitable locations. The current use of the site for hotel has been recognized as the most appropriate use by public policy, as embodied in the Maui County General Plan, Lahaina Community Plan and zoning designations.

Coastal Hazards

These objectives seek to reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion and subsidence. The hotel structures proposed for redevelopment and construction are not in the coastal high hazard area. Existing habitable structures near the coastal high hazard area (i.e., luau cottages) will be demolished as a part of this project. The structures on Black Rock are not as vulnerable to tsunami or storm waves because of their elevation above mean sea level.

3.8 Special Management Area Guidelines- Maui County

The Maui County Planning Commission has established a series of guidelines to evaluate developments proposed within the SMA. These guidelines (SMA Rules and Regulations, Section 2-8-3) seek to minimize environmental impact, avoid restrictions upon public access to the coast, minimize adverse visual impacts and impacts to water quality. These guidelines note that "No development shall be approved unless the Authority has found that: (1) the development will not have any substantial environmental or ecological effect...; (2) the development is consistent with the objectives and policies, as enumerated in Chapter 205A, Hawaii Revised Statutes, and as recited herein under Sections 2-8.1 and 2-8.2, above (objectives and policies); and Special Management Area guidelines set forth in this Article; and (3) the development is consistent with the County General Plan, zoning, subdivision and other applicable ordinances." (section 2-8.3(b) (1),(2) and (3).)

According to the County's significance criteria, a proposed action may have a significant adverse effect on the environment when the action:

(1) *involves an irrevocable commitment to loss or destruction of natural or cultural resources.* The project will not result in a loss or destruction of natural or cultural resources.

(2) *significantly curtails the range of beneficial uses of the environment.* The project will actually increase beneficial uses of the environment by enhancing pedestrian access along the beachfront and by providing public beach parking.

(3) *conflicts with the County's or the State's long-term environmental policies or goals.* The project is consistent with public environmental policies and goals.

(4) *substantially affects the economic or social welfare and activities of the community, County or State.* The redevelopment will generate an estimated 800 construction-related jobs and additional indirect and induced employment. The hotel will work closely with the unions to mitigate the impacts of temporary layoffs during the construction period.

(5) *involves substantial secondary impacts.* Because there will be no increase in total guest units, the project will not have substantial impacts on public facilities and infrastructure.

(6) *cumulatively has considerable effect upon the environment or involves a commitment for larger actions.* Because it involves redevelopment of an existing hotel within an existing resort area (Kaanapali Beach Resort), the project will not contribute to cumulative impacts on the environment or involve a commitment for larger actions.

(7) *substantially affects a rare, threatened or endangered species of plant or animal or its habitat.* The action will renovate and upgrade an existing, currently developed site. It will not impact any rare, threatened or endangered species or its habitat.

(8) *substantially and adversely affects air or water quality or ambient noise levels.* The redeveloped hotel will have the same number of guest units, and therefore guests, as the existing facility. No significant impacts on air or water quality or increases in ambient noise levels are anticipated. Temporary construction-related increases in dust and noise will be mitigated.

(9) *substantially affects an environmentally sensitive area.* All new structures in the flat, southern portion of the site will be built outside of the 150-foot shoreline setback area. Structures on Black Rock will be setback at least 40 feet from the shoreline and are not as vulnerable to coastal flooding because of the existing elevation.

(10) *substantially alters natural land forms and existing public views to and along the shoreline.* The proposed improvements will have minimal impacts to public views to and along the shoreline. Proposed building heights are far below allowable heights under County zoning regulations.

Based on the above criteria and discussion, the proposed action will not have any substantial or ecological effect on the environment and is consistent with the objectives and policies of Chapter 205A, Hawaii Revised Statutes, the County General Plan, zoning, subdivision and other applicable ordinances. Accordingly, the project is consistent with the Maui Planning Commission's SMA Guidelines.

3.9 Shoreline Setback Rules and Regulations

History

In an attempt to protect the shoreline from the intrusion of development which could alter natural beach and shoreline processes, the State Legislature created provisions to control development within an area referred to as the Shoreline Setback area (Chapter 205A, Part III, HRS). When the Legislature first adopted laws governing the shoreline setback area in 1970, County planning commissions were given the authority to set the shoreline setback line between 20 and 40 feet. Accordingly, the Maui County Planning Commission originally fixed the shoreline setback at 40 feet (unless the subject parcel qualified for a 20-foot setback as the result of limited lot depth).

In September 1990, the Shoreline Setback Rules and Regulations were revised, increasing the shoreline setback for the area from 40-feet to 150-feet from the certified shoreline (Chapter 5 Rules of the Maui County Planing Commission Relating to the Shoreline Area of the Islands of Kahoolawe, Lanai and Maui, September 1990).

The construction of the Sheraton Maui Hotel commenced prior to the first 1970 shoreline setback regulations. Presently, portions of the existing hotel structures encroach into the 150-foot setback area (although all existing structures are at least 40-feet from the certified shoreline). These include some of the beach cottages, a portion of the Cliff Tower, and the Discovery Room and Molokai Wing located on Black Rock. Because these structures were approved and constructed prior to the September 1990 effective date of the new requirements, they are considered non-conforming structures within the 150-foot shoreline setback.

No new development or major redevelopment is permitted within the 150-foot setback area unless it is specifically exempted in the setback rules (i.e., minor structures or renovation not exceeding 50 percent of assessed value, etc.), or a variance is obtained from the Maui County Planning Commission.

Criteria for judging the appropriateness of a setback variance request include: a determination that the proposed action will not adversely affect beach processes or artificially fix the shoreline, provided it is found that the applicant would experience hardship if the request is denied; maintaining safe lateral access to and along the shoreline; and minimizing adverse impacts to public views to, from and along the shoreline.

Requested Shoreline Setback Variance

A shoreline setback variance is being requested for non-exempted uses within the 150-foot setback (Figure 9).

For discussion of the requested shoreline setback variance, the Sheraton Maui property can be divided into two areas: 1) the beach area of the property, to the south and 2) the Black Rock area to the north.

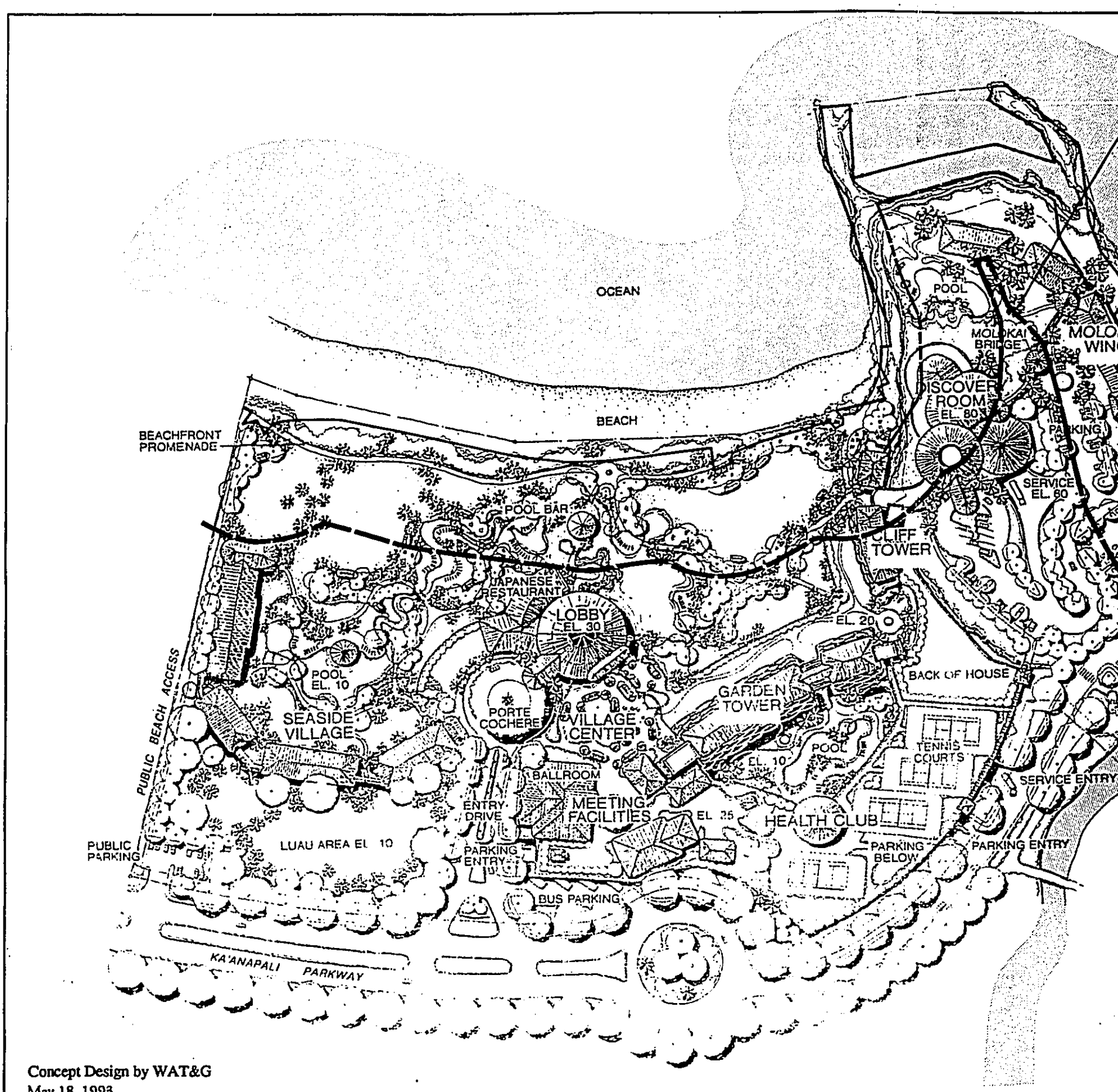
Beach Area of Property (South). The beach area or southern portion of the property is fairly level and constitutes the majority of the site. This area includes the Cliff Tower, Garden Tower and existing luau cottages. In an effort to meet the intent of the 1990 Shoreline Setback Rules and Regulations, no new habitable structures have been sited within the 150-foot setback. Most existing non-conforming structures, such as the luau guest cottages, will be demolished.

However, the seaward wing of the existing Cliff Tower, which will be significantly renovated, is within the 150-foot setback and will require a shoreline setback variance. Other uses planned for the area include the beachfront promenade, an open lawn which could be used as a luau area and pool bar. These are considered to be minor structures and therefore exempt from the variance requirement.

Black Rock Area (North). Black Rock is an elevated, rocky peninsula, which juts out into the ocean at the northern end of the Sheraton property. Structures on Black Rock are situated at elevations from 30 to 70 feet above msl.

At Black Rock, the project proposes to renovate the Discovery Room dining facility, to demolish the existing Molokai Wing and construct a new Molokai Wing within approximately the same building footprint, and to construct a new swimming pool area. Because of its physical configuration (surrounded on three sides by ocean), most of Black Rock is within the 150-foot shoreline setback. As such, a shoreline setback variance is required for the Discovery Room and Molokai Wing improvements. The proposed swimming pool is considered a minor structure and is therefore exempt.

Several factors should be taken into consideration in evaluating the requested shoreline setback variance. First, given the unique physical configuration of Black Rock, a literal interpretation of the 150-foot setback (150-feet from all three ocean-facing sides) would result in virtually no buildable land on the peninsula, as indicated in Figure 9.



Concept Design by WAT&G
May 18, 1993

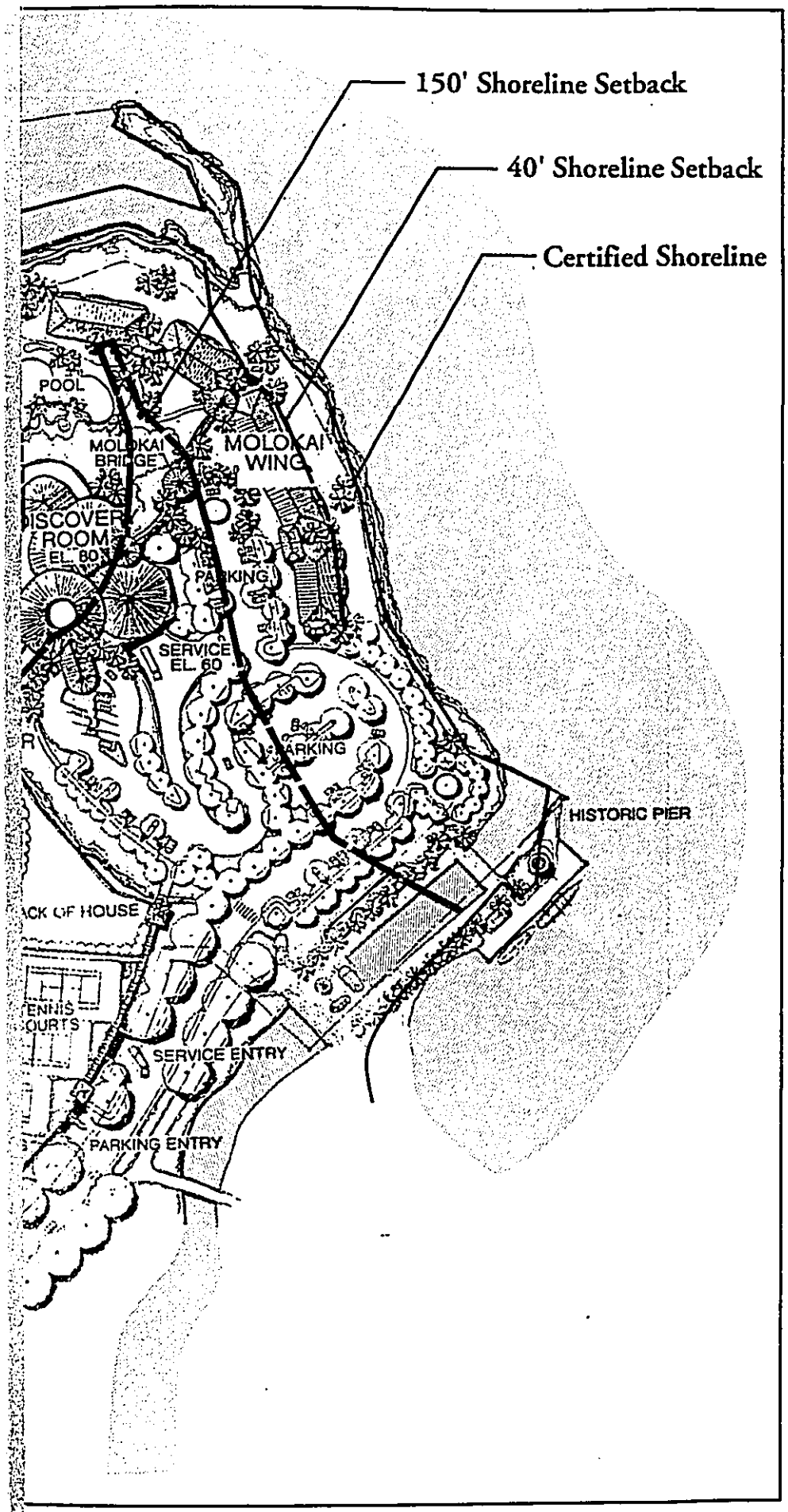


Figure: 9

Shoreline Setback

SHERATON MAUI REDEVELOPMENT

Shoreline setbacks are based on shoreline survey certified by DLNR on May 3, 1993.

Feet

0 75 150

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

Secondly, the County's Shoreline Setback rules provide for exceptions to the 150-foot setback, e.g., for shallow lots or where application of the regulations would reduce buildable area to less than 50 percent of the lot. These provisions could only be applied to Black Rock if it were subdivided and constituted as a separate lot. Because it is now part of a larger lot, a strict, literal interpretation of the 150-foot setback would eliminates any reasonable use of the Black Rock area.

Finally, because of its physical and geological characteristics, Black Rock is not as vulnerable to coastal storm hazard or beach erosion as most beachfront areas. The proposed improvements will have no effect on beach processes, with the structures closest to the ocean (Molokai Wing) all at least 30 feet above msl, and at least 40 feet from the certified shoreline. Being a rocky outcrop, there is no sandy beachfront at Black Rock.

Safe lateral access to Black Rock from the beach will be maintained, although public access around Black Rock is not provided because of the danger posed by the sheer cliffs along the north side. The proposed structures would not adversely impact public views to, from or along the shoreline, as discussed further in Chapter IV.

Summary

The proposed uses on the property will not adversely affect beach processes, artificially fix the shoreline or interfere with lateral shoreline access. Nor will they have adverse impacts on public views.

In the southern portion of the property, there will be no new habitable structures within the 150-foot setback, with the exception of the redeveloped Cliff Tower wing. Most of the existing non-conforming structures will be demolished. A beachfront promenade will be constructed, enhancing lateral shoreline access and public views.

The unique physical layout and geological characteristics of Black Rock merit special consideration of the 150-foot setback. All proposed structures are sited within the same building footprint as the existing structures; at a minimum elevation of at 40 feet above msl, and setback at least 40 feet from the certified shoreline.

The overall Sheraton Maui redevelopment meets the spirit of the shoreline setback law, and is consistent with the County's General Plan policy to renovate existing hotels with no net increase in guest units. Finally, the applicant would suffer hardship if the request is denied, as it would be forced to demolish hotel facilities which have been a popular, notable feature of the Kaanapali Beach Resort for nearly 30 years.

IV.

Description of the Affected Environment, Potential Impacts and Mitigating Measures

IV. DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATING MEASURES

4.1 Climate

Existing Conditions

The project area is located on the dry leeward coast of West Maui, in the Lahaina Judicial District. The average annual rainfall in the area is between 15 to 18 inches. The average annual temperature in the nearby Lahaina area ranges from 71.5 degrees to 78 degrees Fahrenheit Tradewinds blow from the northeast. (1989 State Data Book).

Probable Impacts

The project is not expected to have any significant impact on the regional climate. The property is already generously landscaped, and the proposed modifications to the landscaping will have minimal impact on micro-climate conditions on the site.

4.2 Geography/Soils

Existing Conditions

The southern portion of the project site is fairly level, with elevations averaging from 10 to 12 feet above mean sea level (msl) throughout the majority of the property. The predominant geographical feature on the site is Puu Kekaa, a volcanic cinder and spatter cone which forms a large rock outcropping at the northernmost end of the site. Puu Kekaa is commonly referred to as "Black Rock". The hotel's Molokai Wing and Discovery Room structures are located at the top of Black Rock, whose cliffs rise spectacularly from the ocean. The elevations at the top of Black Rock range between 40 to 70 feet above msl, reaching 73 feet above msl at the Discovery Room. A view from the top of Black Rock affords a spectacular vantage point up and down the Kaanapali coastline, of the West Maui mountains and the surrounding Kaanapali areas.

According to the U.S. Department of Agriculture Soil Conservation Service (SCS) Soil Survey of the Islands of Kauai, Oahu, Molokai and Lanai, the soil on the level areas of the project site is classified as Jaucas sand (JaC), a single-grain sandy soil characterized by slopes of 0 to 15%, rarely exceeding 7%. The permeability of this soil is rapid and runoff is very slow to slow. Water erosion hazard is slight.

Potential Impacts

Much of the proposed construction activity, such as the new Molokai Wing, will take place within the building footprint of the existing structures. As such, there will be minimal impact to the area soils or geography. Short term impacts to the site's soils will result during land grading and construction activity.

The proposed grading plan will require excavation and embankment for the construction of the parking structure, the Seaside Village, entry to the new lobby and the additional swimming pools and lagoons. The site will be graded to dispose of the on-site storm runoff generated from the redevelopment.

Small quantities of fill material will be used in the proposed Seaside Village area to facilitate site drainage. The new lobby entry area will also be on fill material.

Mitigation Measures

Erosion control techniques as required by State and County agencies will be followed during all on and off-site work and during the construction phase to minimize soil loss. Graded areas will be hydromulched and watered for dust control.

4.3 Natural Hazards

Existing Conditions

The parcel is not suceptible to earthquake or flooding. The island of Maui is classified as Zone 2 on the Seismic Risk Map of the United States for the purpose of structural design. This classification system is based on a scale of Zones 0 to 4, with Zone 4 having the highest seismic occurrence and danger. All structures built will conform to the County Building Code for Zone 2.

The Federal Emergency Management Agency's (FEMA) flood insurance rate maps (FIRM) indicate that the site lies within Zones C, A-4 and V-12. The majority of the site, including all of the Black Rock area, is within Zone C, areas of minimal flooding. Areas along the shoreline are close to zone A-4, the 100-year flood zone. The base flood elevation in the A-4 zone is eight feet above msl. The canal on the northern end of the property is situated in Zone V-12, an area of 100-year flood with velocity (wave action).

The Maui County Council recently passed a bill revising the County's flood district ordinance in line with new FEMA regulations. The new "Ordinance Amending Chapter 19.62 of the Maui County Code Relating to Flood Hazard Districts" was adopted in April 1993. The ordinance requires a Special Flood Hazard Area Development Permit prior to any construction within any special flood hazard area as delineated on the FIRM maps.

Potential Impacts

The proposed project site has minimal suceptibility to natural hazards and the project will have no impact on the occurrence of these hazards.

The project will demolish the beachfront cottages and wooden kiosk currently in the 100-year flood zone (A-4). All new guest room structures (i.e., Seaside Village) will be rebuilt within Zone C.

The project is not affected by the County's new flood district ordinance, since no new structures or existing structures to be renovated are in the flood zone.

Mitigation Measures

All structures will conform to State and County building codes and requirements for seismic Zone 2. All habitable areas of new structures will not intrude into the coastal high hazard zone.

4.4 Archaeological and Historic Resources

An archaeological inventory survey, including subsurface investigation, was conducted in April 1993 by Paul H. Rosendahl, Ph.D. Inc. (PHRI), in consultation with the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD). The purpose of the survey was to determine the presence or absence of cultural deposits and/or burials. The subsurface investigation focussed on three areas of the site, identified in consultation with DLNR-SHPD. These three areas were selected based on previous archaeological studies and historical information and the fact that some below-grade excavation (no greater than 5 feet in depth) is proposed in the areas.

The PHRI report is included as Appendix C and its findings are summarized below.

Existing Conditions

Historical Background. The PHRI report provides a detailed historical account of native Hawaiian settlement and early historic uses within the Lahaina District, as well as a summary of previous archaeological findings within the project vicinity. These accounts describe Lahaina as an important and highly populated region used extensively for agriculture. Lahaina was the capital of the Hawaiian Kingdom from the late 1700s to 1850, when the capital was moved to Honolulu.

There are a number of Hawaiian legends surrounding Puu Kekaa or Black Rock. According to ancient Hawaiian tradition, Puu Kekaa is a *Leina a ka uhane*, or "the leaping place of the soul", where souls of the dead leaped into the next world. This area is listed as a historic site (Site 1206) by the DLNR-SHPD.

The old landing on the north side of Black Rock was constructed to ship out the sugar that was bagged and processed at the mill in Lahaina. The landing was abandoned just prior to World War I.

Sheraton Maui employees who grew up in the area also recall a lumber yard and a cattle holding pen on the site of the present hotel

Overall, the PHRI study notes that the model of prehistoric settlement and land use generated from previous archaeological research and historical documents suggest that a high density of significant archaeological sites, of great variety, once existed within leeward West Maui in general, and in the project area in particular.

Subsurface Survey Findings

Study Area. Selection of the three areas identified for subsurface investigation was based on consultation with the DLNR-SHPD. The location of the areas is shown in Appendix C. Each of the three are grassy, open lawns adjacent to existing structures. Area 1 is located just makai of and directly in front of the existing Garden Tower. Area 2 is located behind (mauka) of the Garden Tower. Area 3 encompasses the grassy lawn near the luau cottages, at the site of the proposed Seaside Village. The three areas are landscaped with grass and other introduced ornamental species. Although the entire project site supported dense stands of native vegetation in prehistoric and early historic times, extensive development of agriculture and resort complexes have removed virtually all of this cover.

Survey Methodology. The basic objectives of the PHRI survey were a) to identify all sites and site complexes present within the project area; b) to evaluate the potential general significance of all identified archaeological remains; c) to determine the possible impacts of proposed development upon the identified remains; and d) to define the general scope of any subsequent further data collection and/or other mitigation work that might be necessary or appropriate.

The subsurface survey consisted of 15 backhoe trenches, placed in each of the three areas at intervals designed to ensure representative samples. (A description of the trenches and findings are included in Appendix C). Each of the 15 trenches was 5.0 meters in length and 0.75 meters wide (bucket width). Depths varied from 1.71 to 2.90 meters. (The trenches were excavated beyond the anticipated construction depths.)

Findings and Conclusions. The PHRI study found evidence of extensive disturbance of the area, probably during with the construction of the hotel in the 1960's. No prehistoric subsurface cultural deposits, burials or human skeletal remains were identified within the project area. The PHRI report describes the findings and conditions encountered in each of the three areas.

The PHRI report notes that although historic documentation indicated the possible presence of human remains in the project area, no such remains were identified during subsurface testing. Although the Kekaa area has been described as densely populated during the proto-historic period, no prehistoric cultural deposits were noted. Very few, if any, soil deposits in the redevelopment area are intact, most are fill.

Recommendations

In view of the negative findings for the proposed project, the PHRI study concluded that construction and other redevelopment activities will not affect archaeological or historic sites of significance. No further treatment or consideration of archaeological resources is necessary.

The PHRI report has been reviewed by DLNR-SHPD. In a response letter to PHRI dated May 3, 1993 (see Appendix C), DLNR-SHPD noted that it concurred with the report findings. DLNR-SHPD also requested that the report include sections from the backhoe trenches, and these have been included.

As requested by DLNR-SHPD, an archaeologist will be present on site during construction excavation to monitor any findings. If cultural artifacts or burials are discovered at any time during construction, all work will be suspended until a certified archaeologist can determine the significance of the discovery.

4.5 Traffic Circulation

A traffic impact assessment has been prepared for the project by Parsons Brinckerhoff Quade & Douglas. The report is included as Appendix D. The major findings are summarized below.

Existing Conditions

Existing Roadways. The Sheraton Maui site is located at the northwestern terminus of Kaanapali Parkway within the Kaanapali Beach Resort area. Access to the project site is currently provided through two driveways located on the cul-de-sac at the northwestern terminus of Kaanapali Parkway.

Honoapiilani Highway is the primary link through Central Maui around the southwestern coast of the island. It connects Wailuku in the northeast with Maalaea in the south, Lahaina in the southwest and Kapalua/Napili in the northwest. Honoapiilani Highway is a two-lane highway with limited passing areas between Wailuku and Lahaina. From Lahainaluna Road to Kaanapali Parkway, Honoapiilani Highway widens to four lanes, with two lanes in each direction. North of the intersection with Kaanapali Parkway, Honoapiilani Highway transitions to a two-lane roadway with

paved shoulders at its intersection with Kekaa Drive. Within the study area, the posted speed limit on Honoapiilani Highway is 35 miles per hour.

Kaanapali Parkway, which serves as the primary access to the Kaanapali Beach Resort area, is a two-lane roadway with 28-foot wide lanes and a landscaped center median. It is aligned in a northwest-southeast direction and has a posted speed limit of 25 miles per hour. Kaanapali Parkway terminates at a cul-de-sac fronting the Sheraton Maui Hotel. On its southeastern end, Kaanapali parkway intersects Honoapiilani Highway at a signal-controlled cross intersection.

Kekaa Drive serves as a secondary access to the Kaanapali Beach Resort area. It is a two-lane local roadway, generally aligned in a northwest-southeast direction. On its mauka end, Kekaa Drive runs parallel to Honoapiilani Highway and terminates at the entrance to the Eldorado Resort Condominiums. A branch off Kekaa Drive connects to Honoapiilani Highway. On its makai end, Kekaa Drive intersects with Kaanapali Parkway, forming the stop controlled stem of a T-intersection.

Existing Traffic Conditions. Data collected for the 1990 "Kaanapali Beach Hotel Expansion Project Traffic Impact Report" (Parsons et al) indicated that the intersection of Honoapiilani Highway and Kaanapali Parkway operates near capacity during the a.m. peak hour and over capacity during the p.m. peak hour.

The 1990 Kaanapali Beach Hotel study recommended converting the dedicated southbound right-turn lane on Honoapiilani Highway into a shared/through right-turn lane. It also recommended widening the southern leg of Honoapiilani Highway to provide a free right-turn movement from (eastbound) Kaanapali Parkway to (southbound) Honoapiilani Highway. These improvements will improve intersection operations to under capacity conditions during the a.m. peak hour, and to near capacity conditions during the p.m. peak hour.

Base Year 1995 (Without Project). The Parsons Brinckerhoff report looked at base year 1995 conditions, assuming that the Sheraton Maui Hotel was not redeveloped. Even without the project, development in the adjoining communities of Lahaina, Kapalua and Napili would generate additional traffic on Honoapiilani Highway.

In forecasting future conditions, Parsons utilized the 1990 data mentioned above, and applied an annual average growth rate of 4.2 percent. For base year 1995, given existing roadway geometrics, traffic volumes at the Honoapiilani Highway/Kaanapali Parkway intersection would experience over capacity operating conditions during both the a.m. and p.m. peak hours. Modifying the southbound right-turn lane and widening Honoapiilani Highway as described above, will increase capacity and improve intersection operations. The intersection would operate under capacity during the a.m. peak hours, but would continue to operate over capacity during the p.m. peak hours.

Potential Impacts

The Sheraton Maui Hotel renovation will not result in any change in the number of guest rooms or "keys". The proposed action will result in an additional restaurant (a net increase of 2,000 square feet) and approximately 18,000 square feet of new executive meeting facilities. For this analysis, the renovation was anticipated to be completed by 1995.

Restaurant. The net increase of 2,000 square feet of restaurant space was estimated to generate a total of 2 vehicle trips during the a.m. peak hour and 15 vehicle trips during the p.m. peak hour. Since the restaurant will be within the hotel complex, a significant portion of traffic generated is anticipated to be either internal to the hotel (pedestrian) or internal to the Kaanapali Beach Resort area. Only 25 percent of the traffic generated was, therefore, assumed to be vehicular traffic that would enter or exit the Kaanapali Beach Resort area. Therefore, the net increase in vehicular trips resulting from the restaurant was estimated at 1 trip during the a.m. peak hour and 4 trips during the p.m. peak hour.

Executive Meeting Facilities. Due to the lack of statistical information on trip generation characteristics of resort meeting rooms, the trip generation estimates were based on information provided by the Sheraton Maui Hotel.

A maximum daily attendance for the meeting space was estimated at 400 persons, with an average attendance of 200 persons per weekday. The meeting area (14,000 SF of meeting space and 4,000 SF foyer) is anticipated to be used less than 50 percent of the time.

The Parsons analysis utilized the maximum attendance of 400, and therefore represents a worst-case scenario. It was assumed that 90 percent of the traffic generated by the meeting facilities would be internal to the Sheraton Maui Hotel or the Kaanapali Beach Resort area. The remaining 10 percent of traffic was estimated to generate 40 vehicular trips during both the a.m. and p.m. peak hours.

Overall Impacts. Overall, the proposed renovation is forecast to generate 41 additional vehicle trips during the a.m. peak hour and 44 vehicle trips during the p.m. peak hour.

The impact of these additional vehicle trips to the surrounding roadway system was assessed by reevaluating operations at the Honoapiilani Highway/Kaanapali Parkway intersection. The analysis reveals that the existing Honoapiilani Highway/Kaanapali Parkway intersection would continue to experience over-capacity operating conditions during both the a.m. and p.m. peak hours. With the intersection improvements identified previously, the intersection would operate under capacity during the a.m. peak hour. During the p.m. peak hour, however, the intersection would continue to operate over capacity, *with or without* the Sheraton Maui redevelopment project.

Mitigation Measures

The State Department of Transportation proposes to construct a new mauka bypass road as a long-term solution to relieve capacity constraints within this portion of Honoapiilani Highway. The Lahaina bypass road would provide an alternative route around the town of Lahaina between the Kapalua/Napili areas and the areas south of Lahaina. This diversion of traffic off Honoapiilani Highway will significantly improve operating conditions at the Honoapiilani Highway/Kaanapali Parkway intersection by reducing the volume of through traffic that passes through the intersection.

In conclusion, the Sheraton Maui renovation will result in only a nominal increase in traffic volumes, and will increase 1995 volumes through the Honoapiilani Highway/Kaanapali Parkway intersection by two percent or less. As a result of the project's nominal trip generation and because intersection improvements are required with or without the project, no mitigation measures are recommended with the proposed Sheraton Maui redevelopment. Improved traffic operations are anticipated with the construction of the Lahaina bypass road.

4.6 Wastewater System

A Preliminary Engineering Report for the proposed project has been completed by Austin Tsutsumi & Associates. This report included an analysis of sewerage capacity and demand. The entire report is included as Appendix E.

Existing Conditions

Wastewater for the existing Sheraton Maui is carried by one 6-inch and two 8-inch laterals to a 15-inch County sewerline on Kaanapali Parkway. The sewage is conveyed to pump stations located along the Royal Kaanapali Golf Course. It is then pumped up to Sewage Pump Station No. 2, located on the mauka side of Honoapiilani Highway. From Pump Station No. 2, the sewage is conveyed to Sewage Pump Station No. 1 by way of a 20-inch force main and a 27-inch gravity line. From there, it is pumped to the 6.7 million gallons per day (mgd) capacity Lahaina Sewage Treatment Plant (STP) near Honokowai Stream.

The system was originally designed to serve the sewage requirements of future developments in Lahaina, with an Average Daily Flow of 3.2 and Peak Flow capacity of 7.2 mgd.

In the early 1980's, Amfac Property Investment Corp. initiated a 3.5 mgd expansion of the then 3.2 mgd Lahaina STP to accommodate anticipated future growth in Kaanapali. The plant expansion, completed in 1985, increased the total treatment plant capacity to 6.7 mgd. Under an agreement with the County, Amfac funded the plant expansion and dedicated the improvements to the County, while maintaining a 3.16 mgd allocation of the STP capacity, which excludes flows from Kaanapali Hillside and The Masters.

Wastewater for the existing Sheraton Maui Hotel is carried by one 6-inch and two 8-inch laterals, providing service to the luau cottage, central and Black Rock areas, respectively. These three laterals convey the wastewater to a 15-inch County sewerline on Kaanapali Parkway. The sewage is conveyed to pump stations located along the Royal Kaanapali Golf Course and pumped up to Sewage Pump Station No. 2, on the mauka side of Honoapiilani Highway. From there, the sewage is conveyed to Sewage Pump Station No. 1 by way of a 20-inch force main and a 27-inch gravity line. From Pump Station No. 1, the sewage is pumped to the Lahaina Sewage Treatment Plant.

According to the Austin Tsutsumi & Associates study, the existing hotel, at full occupancy, generates 334,800 gpd of wastewater.

Potential Impacts

The proposed redevelopment will generate a total estimated wastewater flow of 336,900 gpd during full occupancy. This represents a nominal increase of 2,100 gpd or about a 0.6 percent increase.

Mitigation Measures

Proposed sewer system improvements will be designed in accordance with the requirements of the State Department of Health and County Department of Public Works. Construction plans and calculations will be submitted to the Department of Public Works for approval.

4.7 Water Supply

The following discussion of project water supply is taken from the Preliminary Engineering Report by Austin Tsutsumi & Associates, Appendix E.

Existing Conditions

The existing water system is owned and operated by Kaanapali Water Corporation, a subsidiary of Amfac Property Investment Corporation. The system provides water for potable use, fire protection and irrigation for developed areas.

The water source is basal groundwater obtained from four deep wells, one at Honokowai and three at Mahinahina. These four wells have a total design capacity of 5.4 million gallons per day (mgd), a current pumping rate of 4.28 mgd, and an unused capacity of 1.12 mgd. Two Hanakaoo wells and another Honokowai well will provide an additional 2.52 mgd and are expected to be operational within the next two years.

Water is stored in three 1.5 mg reservoirs. The Puukolii and Kaanapali Reservoirs are located at the mauka end of Puukolii Road. The third reservoir is located mauka of the South Course of the Royal Kaanapali Golf Course.

Transmission is via 12-inch and larger lines between the wells and reservoirs and from the reservoirs to each of the developed areas at Kaanapali. A 16-inch and 12-inch pipeline cross Honoapiilani Highway to service the Kaanapali Resort area. The Sheraton Maui Hotel is serviced via a 12-inch pipeline along Kaanapali Parkway.

Existing water consumption at full occupancy is 353,100 gallons per day (gpd). Approximately 123,000 gpd of water is used for landscape irrigation and swimming pools. The average daily demand for the existing hotel is 450 gpd per occupied guest room.

Potential Impacts

The total estimated average daily demand for the renovated hotel, at full occupancy, is 355,100 gpd. This represents a nominal increase of 1,000 gpd over existing usage, or about a 0.5 percent increase. The proposed redevelopment will maintain the 510 guest rooms with a total estimated domestic flow of 230,900 gpd. The landscape area will decrease, while the swimming pool and lagoon area will increase for a total estimated non-domestic flow of 124,200 gpd.

Mitigation Measures

Water systems will be designed in accordance with the requirements of the County Department of Water Supply, Department of Public Works and the State Department of Health.

4.8 Drainage

The Austin Tsutsumi & Associates report included the following assessment of the existing and proposed drainage system.

Existing Conditions

At present, storm runoff generated from the existing hotel flows in several directions. Over half of the storm runoff sheet flows into the ocean. Storm runoff at the cottages on the southern portion of the property percolates into low spots at the grassed area. Runoff from the parking area, tennis courts, porte cochere and service entry road are intercepted by an underground drainage collection system on Kaanapali Parkway. This underground drainage system discharges storm runoff into the canal at the northern end

of the property through a 42-inch outlet. The existing hotel generates a total of 78 cubic feet per second (cfs) of storm runoff.

Potential Impacts

The proposed drainage plan will consist of an underground drainage collection system which will convey on-site runoff to the existing system on Kaanapali Parkway. Storm runoff from the Black Rock area and the shoreline area will flow into the ocean and canal. Storm runoff from the new lobby, Seaside Village and the parking structure will be collected by an on-site underground drainage collection system which will be intercepted by the drainage system at Kaanapali Parkway. The storm runoff for the renovated hotel site is projected at 88 cfs. There will be an approximately 10 percent increase in impervious ground area with less open space. The increased storm runoff of 10 cfs should not pose a water quality problem to the north of Black Rock. (Appendix E includes site drainage calculations).

Mitigation Measures

The proposed grading and drainage plans for the project will be designed to produce no adverse impacts by storm runoff on adjacent properties. All drainage improvements will conform to County standards and will be coordinated with the County of Maui Department of Public Works.

4.9 Electrical Power and Communication Systems

Existing Conditions

Electrical. The power system at the Sheraton Maui is supplied by Maui Electric Company and is configured with two 480 volt transformer infeeds. While this system is adequate to handle the loads, its age prohibits the buying of replacement parts and breakers. The emergency system is presently under modification to provide more and more reliable backup to essential loads.

Telephone. The telephone system is tied to the Hawaiian Telephone Company system via a Sheraton-owned Stromberg-Carlson 800 switch. This switch is aged and inadequate for present functions. The plant cabling and inside wiring are badly deteriorated and in need of replacement.

Potential Impacts and Mitigation Measures

The proposed renovation will upgrade the existing power, lighting and communications system, allowing the hotel to meet new and ever increasing code requirements regarding life safety, disability and energy efficiency. A new 200 kW generator which was recently installed to replace two existing generators rated 40 and 35 kW will be reinstalled in the new hotel to provide back-up generation in case of Maui Electric Company failure.

According to Douglas V. MacMahon, Ltd., consulting electrical engineers for the project, electrical energy consumption at the Sheraton Maui is seasonal and a function of weather and occupancy. Although the key count of 510 will remain the same, additional public spaces utilizing air conditioning will increase the overall energy consumption. This increase will be partially offset by the use of stringent energy control and more efficient air conditioning and lighting than exist at present. Although water features will be a prominent visual attraction, the elaborate and extensive use of features with large flow volumes, high heads and high energy requirements is not envisioned for this site.

Douglas V. MacMahon, Ltd. estimates the present demand of 2 kW per room should increase to not more than 3 kW per room, and the monthly average load factor of 550 kWh/kW will remain constant. A peak load of approximately 1,500 kW with about 825,000 kWh per month is expected. Power factor will remain the same at near 100 percent. Present plans call for retention of primary metering with installation of a new double-ended 1,000/1,288 kVA secondary substation with low loss windings. Primary breakers connected to Maui Electric Company will be vacuum type breakers or reclosers with electronic protective relays.

In summary, the added requirements of ballroom and meeting rooms, shops, restaurants and water features, as well as bringing the undersized chiller plant to required tonnages will increase overall energy consumption. However, the replacement of outdated mechanical systems with state-of-the-art systems will increase overall energy efficiency on a per-ton basis.

Maui Electric Company, Ltd. has been notified of the proposed renovation, and the project's electrical subconsultant will be meeting with representatives from Maui Electric to discuss the anticipated electrical requirements. The applicant will continue to work closely with both Maui Electric Company and Hawaiian Telephone Company to ensure that adequate electrical power and communication service is provided to the hotel.

4.10 Solid Waste

Solid waste is currently disposed at the Central Maui landfill, near Puunene, about 30 miles from Lahaina. This Integrated Solid Waste Management Facility was opened several years ago to replace the Olowalu landfill south of Lahaina and the Makani landfill which had reached capacity. The 55-acre Central Maui facility is expected to be adequate for another 8 to 10 years. The County currently has a request before the Governor for a 100-acre, State-owned site in Central Maui. This proposed Integrated Solid Waste Management Facility will include a baseyard, composting and diversion activities. (Personal communication with Dave Wissmar, Department of Public Works, Solid Waste Division). All non-hazardous construction wastes will be disposed of at the landfill.

4.11 Police, Fire and Emergency Services

Existing Conditions

Police Protection. Service to the Kaanapali area is provided by the Lahaina Police Station, located at Wahikuli. The facility was built in the early 1970's. The Lahaina District presently includes one Captain, one Lieutenant, six Sergeants and 34 officers in the Uniform Patrol. In addition to uniformed officers, the Lahaina Station includes a Criminal Investigation Division, Vice Division, Juvenile Division, bicycle patrol and crime reduction unit.

There are plans to renovate the Lahaina Police Station and long-term plans for station expansion. (Personal communication, Assistant Chief Charles Hall).

Fire Protection. Fire protection service for the Lahaina District are provided by the Lahaina Fire Station in the Lahaina Civic and Recreation Center. The facility, like the police station, was built in the early 1970's. Five firefighters are assigned to a triple combination, 1,250 gpm pumper truck, and four firefighters assigned to a 75-foot ladder truck/pumper with a 1,500 gpm pump capacity and a 300 gallon water carrying capacity.

The Lahaina Fire Station serves the area from Lahaina to Honokowai Stream (including the Kaanapali Beach Resort). A new fire station at Napili was constructed in November 1991. This privately-funded station has a triple combination, 1,500 gpm pumper truck and five firefighters, twenty-four hours per day. With the addition of the new Napili station, the West Maui area now has sufficient fire fighting capacity.

Medical/Emergency Facilities. The Lahaina-Kaanapali area is served by two medical clinics: the Kaiser Foundation Health Plan's Lahaina Clinic and the Maui Medical Group, Inc., Lahaina Branch, as well as a number of private medical and dental care providers. The Kaiser Clinic services participants of the Kaiser Health Plan only. Maui Medical Group's Lahaina Branch is a branch office of the group's Wailuku facility. Both the Kaiser Clinic and the Maui Medical Group Clinic rely on the Maui Memorial Hospital in Wailuku for major surgery, illness and emergency service. Maui Memorial Hospital, a state-owned facility, is Maui's only hospital.

Maui Memorial Hospital contains sufficient space to accommodate health care needs through the year 2000. Existing hospital facilities, medical clinics, private physicians and dentists are adequate to service the proposed development. As such, no mitigation measures related to medical facilities is required. (Kaanapali Beach Hotel EA, September 1990).

Potential Impacts and Mitigation Measures

Because the proposed Sheraton Maui renovation will not result in an increase in hotel keys, there will be little or no increase in demand for police, fire or medical/emergency services.

The renovation will actually decrease fire hazard at the hotel by demolishing existing aging wooden structures and replacing them with non-combustible structures. All improvements are being designed in accordance with all Federal, State, and County fire safety regulations, including emergency and fire access ways, water transmission and hydrants, fire sprinklers, etc. Many of these regulations are not met under existing conditions.

4.12 Recreational Resources

Existing Conditions

West Maui Area. The West Maui area has an abundance of coastal recreational areas, including 17 County parks and three State beach parks: Launiupoko, Wahikuli and Papalaua. About one-third of the County parks are located along the shoreline, including Honokowai and Fleming's Beach, to the north. Table 2 lists the beaches within a five mile radius of the project, as well as the available public facilities and popular activities at those beaches.

Table 2:
WEST MAUI BEACHES, ACTIVITIES AND FACILITIES

	Beach Activities				Public Facilities		
Beach	sw	sn	su	bs	cs	pe	pp
Puamana Beach Park	x		x			x	x
Lahaina Beach	x	x	x				x
Puunoa Beach		x	x				x
Wahikuli State Wayside Park	x	x			x	x	x
Hanakaoo Beach	x	x	x	x			
Kaanapali Beach	x	x		x			
Honokowai Beach Park	x	x			x	x	x
Kahana Beach	x	x					
Keonenui Beach	x	x					
Alaeloa Beach	x	x	x				
Honokeana	x	x					
Napili Bay	x	x	x	x			
Kapalua Beach	x	x		x	x		x
Oneloa Beach	x	x		x			
D.T. Fleming Beach Park	x	x	x	x	x	x	x
Honokohau Bay			x				

sw=swimming; sn=snorkeling; su=surfing; bs=body surfing
cs=comfort station; pe=picnic equipment; pp=paved parking

Source: The Beaches of Maui County, John R.K. Clark, 1980.

In addition to the facilities listed in the table, there is a new privately-owned beach park just north of the Kaanapali Beach Resort area, near the old Kaanapali Airport site. The Kahekili Beach Park is owned by the North Beach Joint Venture, but is open to the public and will eventually be dedicated to the County. The three acre park has a picnic pavilion, restrooms, showers, picnic areas and parking for 100 vehicles.

Sheraton Maui area. The beaches located on either side of Black Rock are white sand beaches ideal for swimming, diving and snorkeling.

There is a public beach access (from Kaanapali Parkway) along the southern boundary of the Sheraton Maui, between the hotel and the adjacent Kaanapali Beach Hotel. Lateral access along the Kaanapali Beach Resort shoreline is provided by a concrete sidewalk, currently extending from the Hyatt Regency Maui Hotel to the south, and terminating at the beach access on the south side of the Sheraton Maui. From that point, pedestrian access to Black Rock is along the sandy beach, or through the hotel's garden pathways. The proposed Sheraton Maui redevelopment will extend the concrete sidewalk from the existing terminus fronting the Kaanapali Beach Hotel to the base of Black Rock. A stairway leads from the beach front near the Cliff Tower up to the tip of Black Rock.

From the north, lateral access along the shore is also provided by a concrete sidewalk which terminates at the base of Black Rock on the north end of the Sheraton property. There is no public access walk around the perimeter of Black Rock. From the north side, access to the beach area fronting the hotel is through the central area of the hotel property.

Potential Impacts and Mitigation Measures

The proposed improvements will not have any adverse impacts on coastal recreational resources. The project will enhance lateral beach access fronting the Sheraton Maui by extending the public walkway from the south side of the property near Kaanapali Beach Hotel to the base of Black Rock. Consideration was given to continuing access completely around Black Rock to the north side of the property. However, this option was eliminated due to the sheer cliffs and potential public safety concerns.

A public parking area next to the public beach access at Kaanapali Parkway will be constructed. There is no public parking lot at present. A total of 20 parking spaces, including one handicapped stall, will be provided free of charge. The hotel will have additional parking for 500 or more cars which beach goers will be able to utilize. However, this overflow capacity will be rated parking.

4.13 Air Quality

Existing Conditions

Air quality in the project area is affected by a number of sources including agricultural activities such as sugar cane burning, bagasse and fossil fuel burning, and pesticide spraying at the adjacent Royal Kaanapali Golf Courses. Traffic generated by nearby resort traffic also impacts local air quality.

The State Department of Health, Clean Air Branch has an air monitoring site in the Lahaina area, located at the Lahaina Intermediate School. Data from late 1987 to 1990 suggests that State and federal standards for inhalable particulates are being met. However, it should be noted that the principal automotive pollutants, carbon monoxide (CO), nitrogen dioxide (NO2) and ozone (O3) are not routinely monitored on Maui. (Personal communication with Wendell Sano, Department of Health, Clean Air Branch).

Potential Impacts

On-Site. The principal source of short-term air quality impact will be construction activity. Site preparation and earth moving will create particulate emissions as will building demolition and construction. Approximately 35,000 cubic yards of fill material will be brought onto the site, creating a greater potential for particulate impacts.

Another air quality concern is the possible presence of asbestos in floors, ceilings, walls, boilers or other areas proposed for demolition. The federal National Emission Standards for Hazardous Air Pollutants (NESHAP) provides guidelines applicable for any construction project involving demolition. An asbestos survey should be conducted during the design phase of the project to determine the presence, locations and estimated quantities of asbestos, if any. If asbestos is present, NESHAP sets procedures for 1) written notification (of State Department of Health and Environmental Protection Agency); 2) compliance with emission control procedures during construction; and 3) proper disposal. If no asbestos is found, only notification of the Department of Health and Environmental Protection Agency is required. (Personal communication with Tom Lileikis, Department of Health, Clean Air Branch).

The proposed 500-stall parking structure will also be a source of concentrated automobile emissions. The design of the structure must incorporate adequate ventilation to maintain adequate interior air quality.

Off-Site. In addition to on-site impacts, there will be limited off-site impacts due to the operation of concrete and asphalt concrete batching plants needed for construction.

Mobile source air quality impacts are created by vehicular traffic. Because the proposed Sheraton Maui renovation will not result in an increased number of keys, no significant increase in vehicular traffic is anticipated. According to a 1990 study done for Amfac/JMB's South Beach Mauka development, the potential for exceeding the State 1-hour and federal 8-hour standards already exists at the Kaanapali Parkway intersection during the p.m. peak traffic hour under "worst case" meteorology. However, the study notes that CO levels at both intersections will tend to decline over the 1990-1996 period, due to the offsetting effect of the federal motor vehicle emissions control program.

Mitigation Measures

The presence and estimated quantity of asbestos will be determined during the project design phase. These materials, if present, will be handled and disposed of in accordance with all applicable regulations during demolition and construction. All Occupational Safety and Health Administration (OSHA) standards to protect construction workers from exposure to asbestos and other potentially hazardous materials will be followed.

There is a significant potential for construction related fugitive dust, particularly with the importation of fill material for the Seaside Village and lobby entry areas. Adequate dust control measures will be employed during construction to mitigate these impacts. Dust control could be accomplished through frequent watering of unpaved roads and exposed soil. Construction vehicle movement should be restricted to off-peak hours as much as possible, so as not to impact the highway level of service (LOS).

Regarding off-site vehicular-related impacts, it appears that federal carbon monoxide standards will be met with or without the project. However, State standards may already be exceeded in close proximity to major intersections serving the project during peak hours. Despite the effect of federal emissions standards for new motor vehicles, continued exceeding of State standards appears possible through 1996.

4.14 Noise

Existing Conditions

Depending on ones location on the property, ambient noise consists of noise from wind, surf and passing vehicles along Kaanapali Parkway. Aircraft noise sources are associated with operations at the Kapalua Airport and in-transit aircraft flying to and from Kahului Airport at high altitude.

Potential Impacts

Because the number of keys, and therefore hotel guests, will remain relatively unchanged after the renovation, there should not be a noticeable increase in noise generated by hotel activities. Due to the marginal increase in traffic related to the project, there should be no significant long-term increase in vehicular-related noise at the site.

Unavoidable but temporary noise impacts will occur during the construction period. The most obtrusive noise will occur during the initial phases of construction because of the use of heavy-duty construction equipment. Any blasting required during construction will be determined by the soils engineer based on further geotechnical evaluation. Any pile driving required will be determined by the structural engineer.

The Sheraton Maui property will be closed during the majority of the construction period, eliminating noise impacts to hotel guests. However, there may be impacts to adjacent properties, including the Kaanapali Beach Hotel located directly south of the Sheraton. The most significant impact will probably be to the Kaanapali Beach Hotel's 3-story Molokai Wing of guest rooms, which is situated parallel to the property line between the two hotels, close to the proposed Seaside Village units.

Mitigation Measures

Mitigation measures to reduce construction noise include the use of quiet equipment and limiting construction to normal working hours, as required under State Department of Health noise regulations.

The fact that the hotel will be closed to guests during the renovation will allow construction work to proceed more efficiently, resulting in a much shorter renovation period. This will mitigate impacts to adjacent property owners.

4.15 Visual Analysis

An evaluation of the visual impact of the proposed Sheraton Maui redevelopment is an important consideration in the Special Management Area Guidelines of Maui County. The intent of these guidelines are to ensure that public views to and along the coast are not impeded, especially those from the coastal highway.

Existing Conditions

Views from the Coastal Highway. Honoapiilani Highway is the primary public arterial through the Kaanapali area, providing access from Lahaina to the south and from Napili and Honokowai to the north. The highway roughly parallels the coast and in the vicinity of the Sheraton Maui, it is located a little over one-quarter mile from the shoreline. The Royal Kaanapali Golf courses and the Maui Eldorado resort condominium are located between the highway and the Sheraton property.

Honoapiilani Highway is considered the major public vantage point for coastal views Traveling south along the highway, the Sheraton Maui Hotel is visible briefly (looking southwest) as one passes directly mauka of the Royal Lahaina condominiums. The Discovery Room and Lahaina meeting room structures perched atop Black Rock, and portions of the Garden Tower are visible, although the remainder of the property is obscured by coconut palms and other vegetation. The ocean is barely visible from this area, and the shoreline is not visible at all. Looking to the south from this vantage point, the building form of the Whaler condominium is visible over the Royal Kaanapali Golf Course and the roof tops of the Maui Eldorado. Beyond the Whaler, the building forms of the Maui Mariott and the Westin Hotel are also visible, suggesting a continuous line of beachfront resort development to the south of the Sheraton.

As one continues southward on Honoapiilani Highway approaching the Maui Eldorado, a landscaped berm on the side of the highway obscures any view of the resort area. The berm continues until the vicinity of the Nanatomi Restaurant, near the intersection of the highway with Kaanapali Parkway.

Approaching from the south, traveling north on Honoapiilani Highway, the Kaanapali Beach Resort's hotels are visible from a distance. No single building form dominates this view. As one gets closer to the Kaanapali Parkway intersection, the resort landscaping and the green open space of the Royal Kaanapali Golf Course soften the overall visual impact. Upon reaching the intersection of Honoapiilani Highway and Kaanapali Parkway, the resort disappears behind the berm located on the makai side of the highway.

Views from Kekaa Drive. A secondary entrance to the Kaanapali Beach Resort area from Honoapiilani Highway is via Kekaa Drive. After turning onto Kekaa Drive from the highway, views of the golf course appear ahead, with the Sheraton Maui Hotel, Kaanapali Beach Hotel and The Whaler condominium coming into view as one passes the Maui Eldorado Resort. South of the Kaanapali Beach Hotel, ocean views are obstructed by the Westin Hotel and The Whaler. After passing the Amfac/JMB Real Estate Sales Center, Kekaa Drive drops in elevation and the ocean view disappears completely.

Views from Kaanapali Parkway. Kaanapali Parkway is the major thoroughfare within the Kaanapali Resort area, originating at Honoapiilani Highway and terminating in front of the Sheraton Maui Hotel. The parkway is richly landscaped with canopy form trees and views of the adjacent Royal Kaanapali Golf Course. Views on the makai (west) side of the parkway are dominated by trees and hedges which soften the presence of the built environment.

Potential Impacts

Three elements of the proposed redevelopment have the greatest potential to affect existing views of the site, because they result in increased building heights or will construct buildings in presently undeveloped areas. The three elements include: a) Black Rock/Molokai Wing; b) Garden Tower; and c) Seaside Village.

A "before and after" visual analysis has been conducted for these three areas, comparing existing views with "post-renovation" views. Four locations were selected as vantage points from which to characterize potential impacts. The selected vantage points are: 1) Kahekili Beach Park to the north, looking south to Black Rock; 2) the beachwalk promenade at the Kaanapali Beach Hotel looking north to Black Rock; 3) Honoapiilani Highway looking makai across the property; and 4) the Eldorado Resort condominium, looking makai across the property.

View from Kahekili Beach Park. The photos in Figure 10, taken from Kahekili Beach Park to the north of the property, illustrate the visual impact of the additional (7th) floor added to the Garden Tower and improvements to the Black Rock area. The additional Garden Tower floor will have a minor impact on views of the property, but the building height is still lower than the height of the Whaler Condominium in the background. Views of Black Rock will be modified slightly by the (partial) story added to the Molokai Wing. The Lahaina meeting room above the Discovery Room kitchen will be demolished, which significantly improves the vista.

View from the Kaanapali Beach Hotel. Figure 11 shows the view of Black Rock from the south, as seen from the public promenade near the Kaanapali Beach Hotel. There will be no noticeable change in this view of Black Rock, as the Molokai Wing is not visible from this perspective, and the height of the renovated Discovery Room will be unchanged.

View from Honoapiilani Highway. The photographs in Figure 12 were taken from Honoapiilani Highway looking makai toward the property. From this vantage point, one can see the impact of the additional floor to the six-story Garden Tower. As indicated in the photos, there will be little noticeable difference in the view of the Garden Tower from the highway. The new building height appears especially insignificant when compared to the height of the existing Whaler condominium, at the far left of the photo. Modifications to the Seaside Village are obscured by the stand of tall palm trees to the left of the Garden Tower. Improvements to the Molokai Wing on Black Rock are not visible from this view point. Demolition of the Lahaina meeting rooms will have a positive visual impact.

View from Eldorado Resort Condominium. Figure 13 provides a "before and after" panorama from a second floor unit at the Eldorado Resort condominium (Apt. A-205), looking makai toward the property. At present, the Whaler Condominium (at the far left of the photo) is a prominent visual feature. The rooftop of the Kaanapali Beach Hotel's Molokai Wing (3 stories) is visible to the left of the Sheraton Maui's southern property line. The elevated Garden Tower and Discovery Room at Black Rock can be seen in the right corner of the photo. Because of the density and height of existing vegetation, the southern area of the hotel, as well as the ocean and horizon, are barely visible from this vantage point. However, a clear view of the horizon is available to the right (north) of Black Rock.

In the "proposed" photo, the roof tops of the new two-story lobby and Seaside Village buildings can be seen through the existing foliage. Although the Seaside Village will include structures five-stories in height, its overall visual impact will be minimized because of the density and height of the existing vegetation. The additional floor on the Garden Tower will be visible from this mauka area, but is not expected to be obtrusive. The improvements to the Molokai Wing will not be visible from this vantage point. Unobstructed ocean views are still available to the right of Black Rock and continuing up the coast.

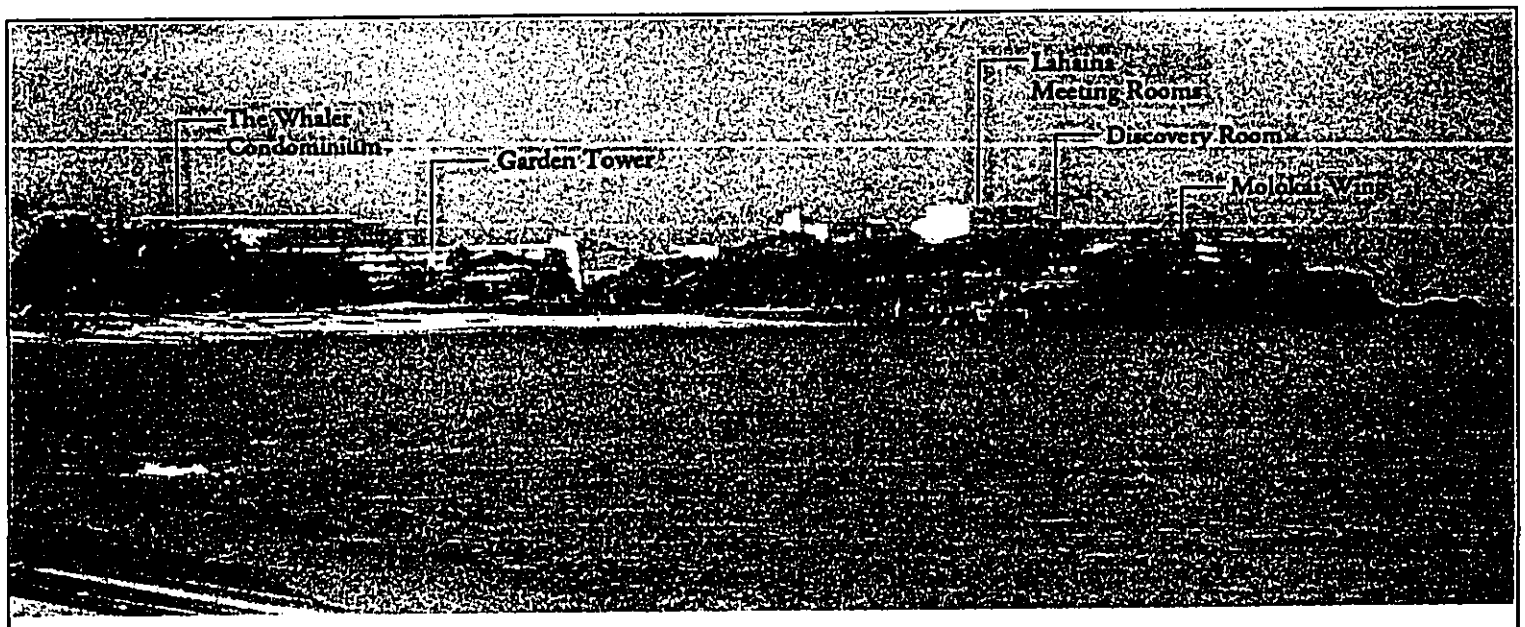
Because of the existing heavy vegetation, existing views of the ocean and of the Sheraton property from this area will not change substantially with the proposed redevelopment. Moreover, when placed in perspective with the Whaler Condominiums to the south, the proposed structures will be non-obtrusive, of low scale and blend in well with the surrounding environment.

Figure 14 illustrates a section detail of the proposed Seaside Village structures in relation to Kaanapali Parkway. Existing building codes require minimum building setbacks of one-half the building height, with a minimum of 15 feet. That is, a five-story, 60-foot high structure, like those at Seaside Village, could be placed as close as 30-feet from Kaanapali Parkway. The proposed structures have been set back over 170 feet from the Parkway, in order to minimize visual impacts from the road.

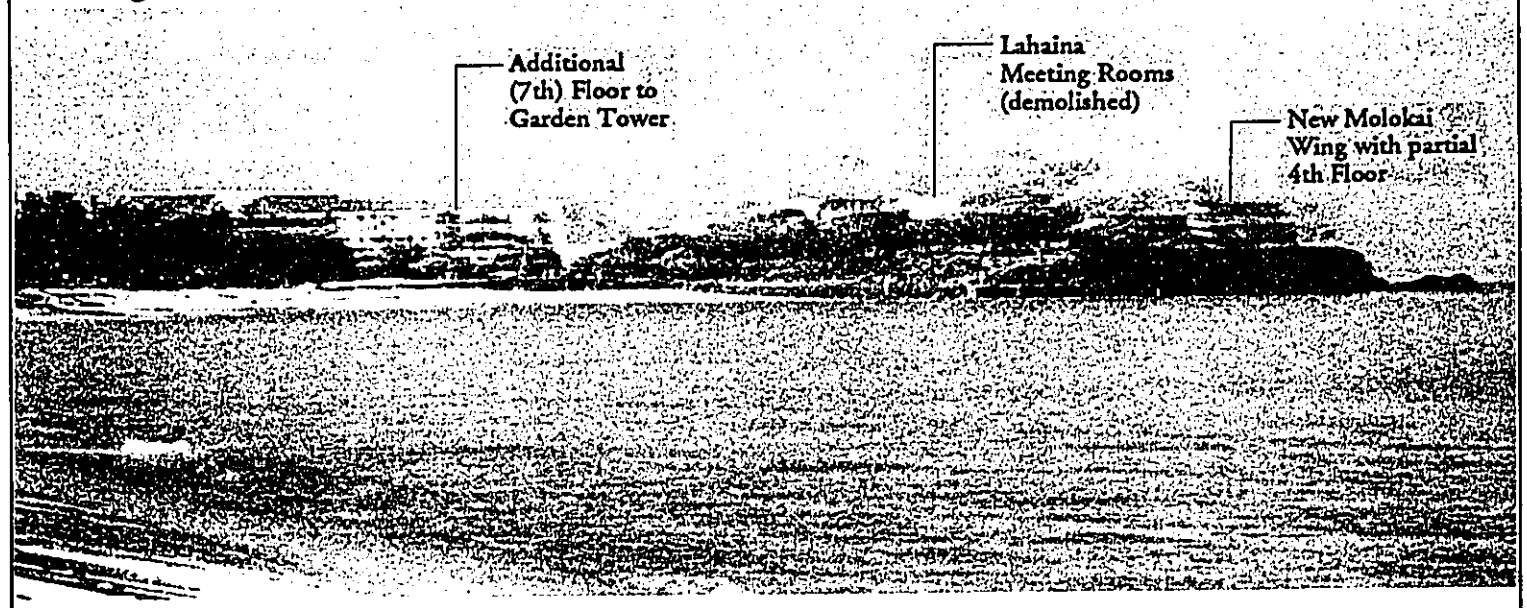
From Kaanapali Parkway, the existing view of this area is of a thick hedge of shrubs and trees, with very little of the hotel visible. That "wall of vegetation" will remain as the dominant view, even after the Seaside Village is complete.

Mitigation Measures

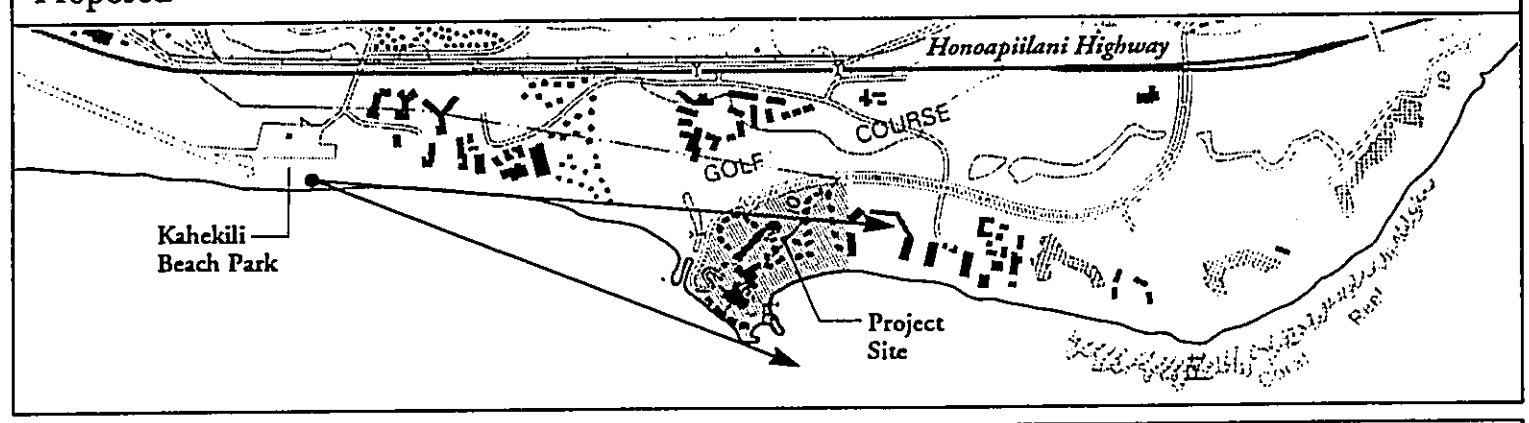
The hotel improvements and proposed landscaping have been designed to mitigate any negative visual impacts. The renovated hotel will make use of natural elements such as lava rock and other materials which look like natural wood. Multi-story structures will include planters on balconies, allowing vegetation to cascade down the sides of the buildings. Only natural, earth tones will be selected for exterior colors; no bright or reflective colors or finishes will be used. Structures will be sited in clusters of smaller buildings rather than a few than monolithic structures, to maintain a low scale, low density ambiance. A Polynesian architectural style, carried throughout the property will blend in well with the surrounding vegetation.



Existing



Proposed



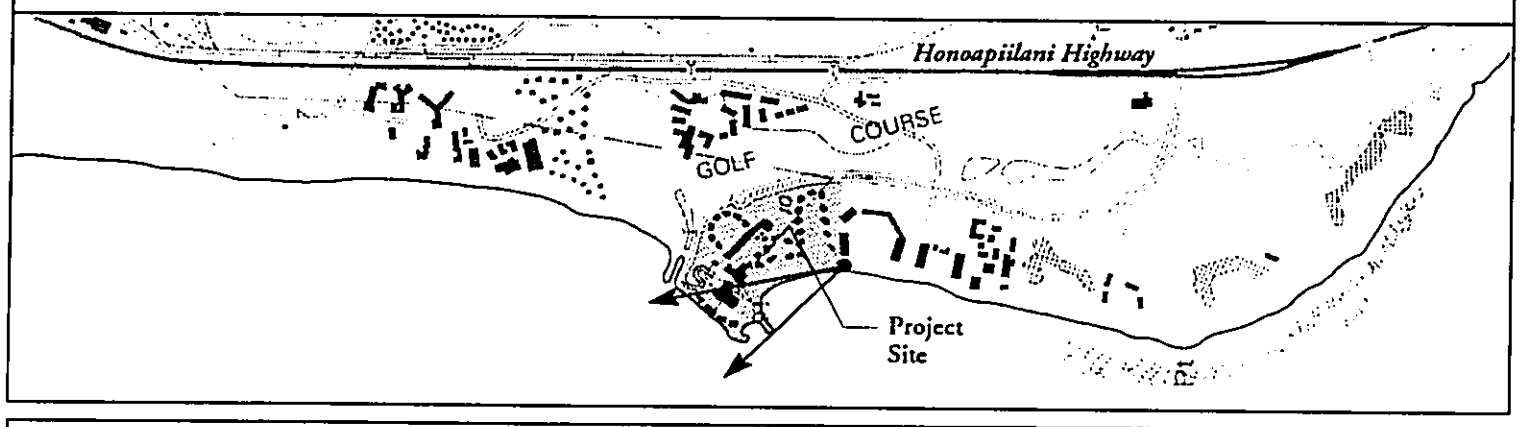
View from Kahekili Beach Park

Figure: 10

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

Existing and Proposed

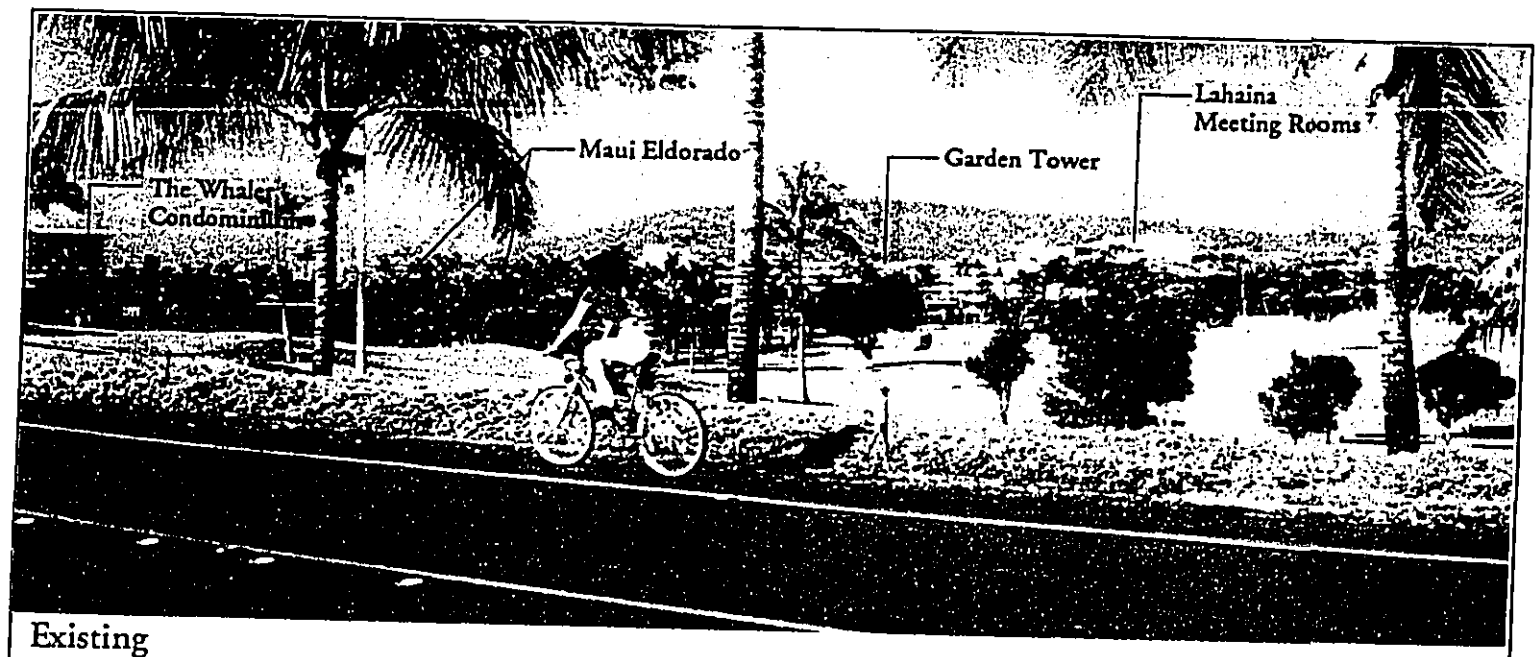


View from the Kaanapali Beach Hotel

Figure: 11

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



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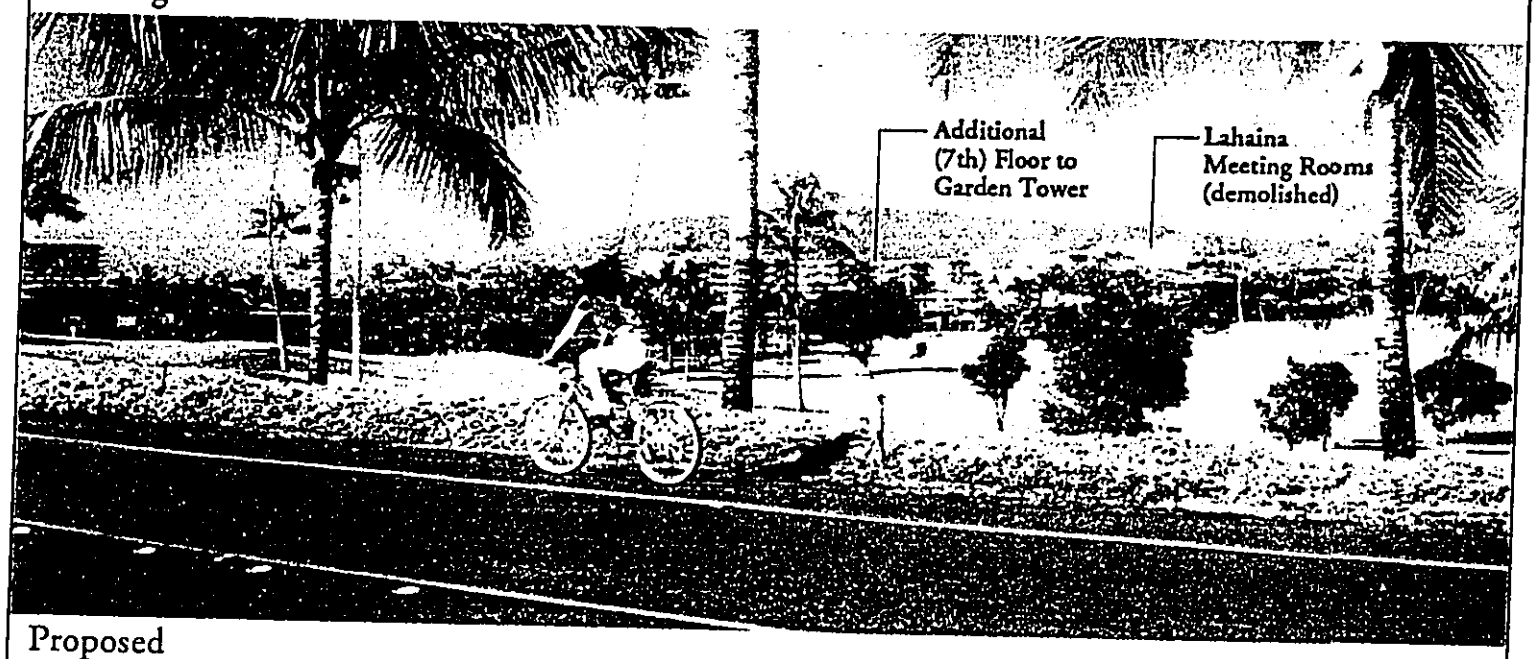

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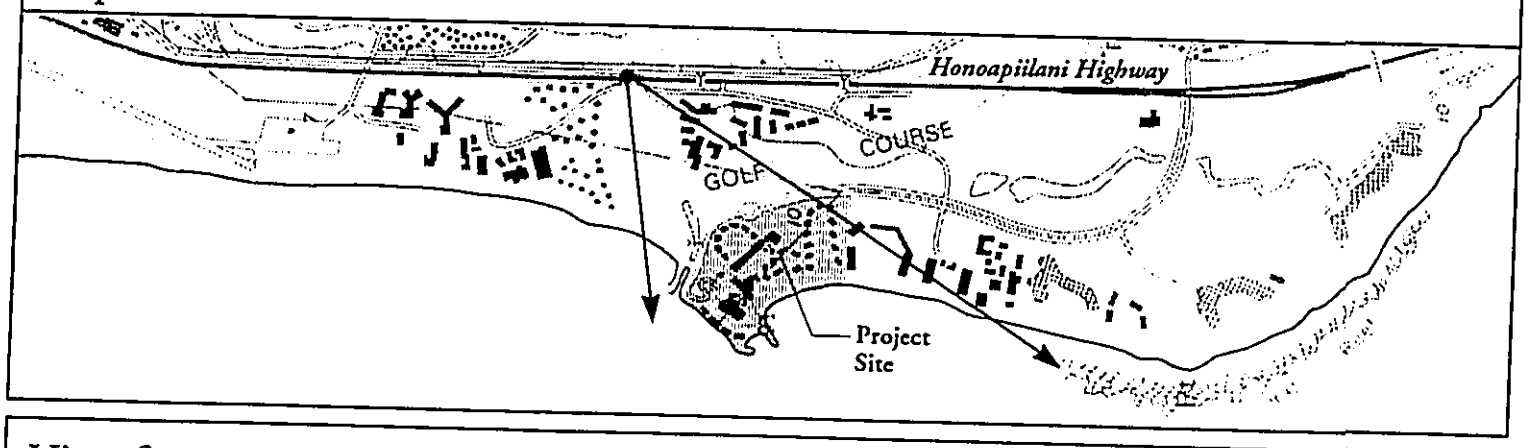
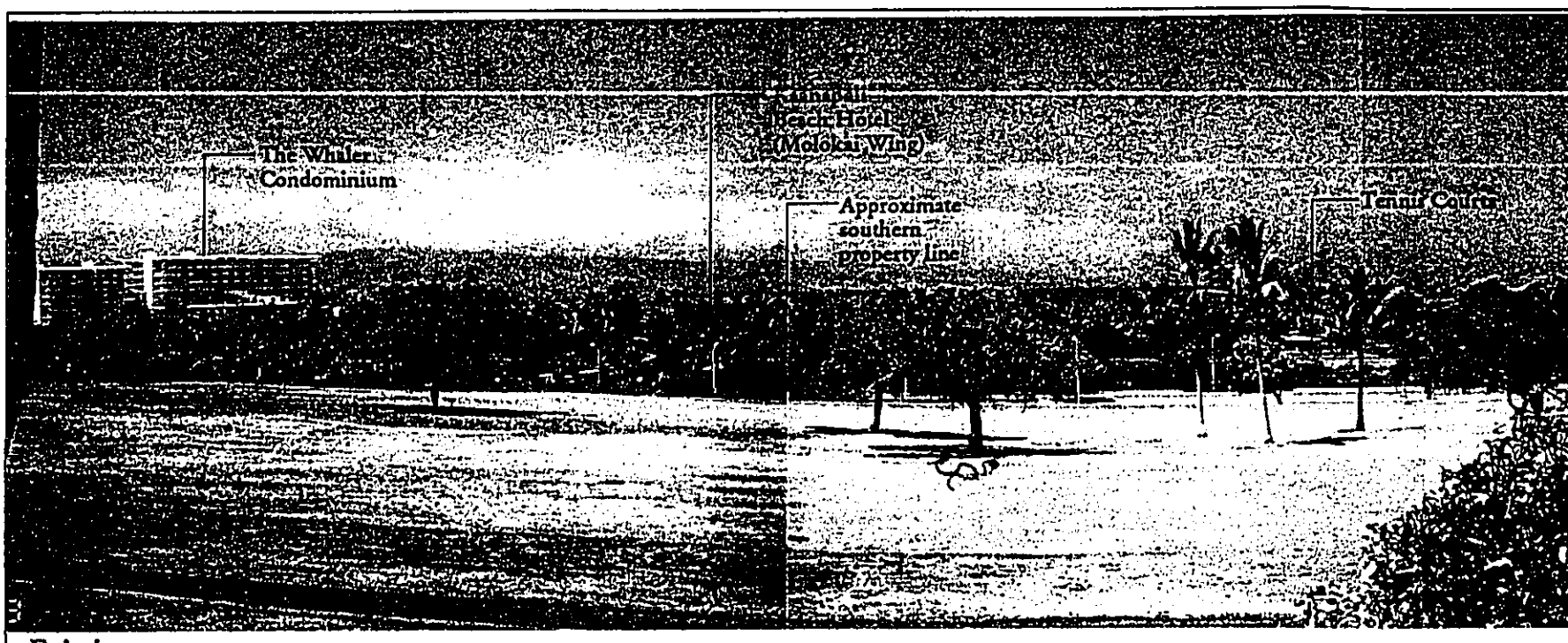


View from Honoapiilani Highway

Figure: 12

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



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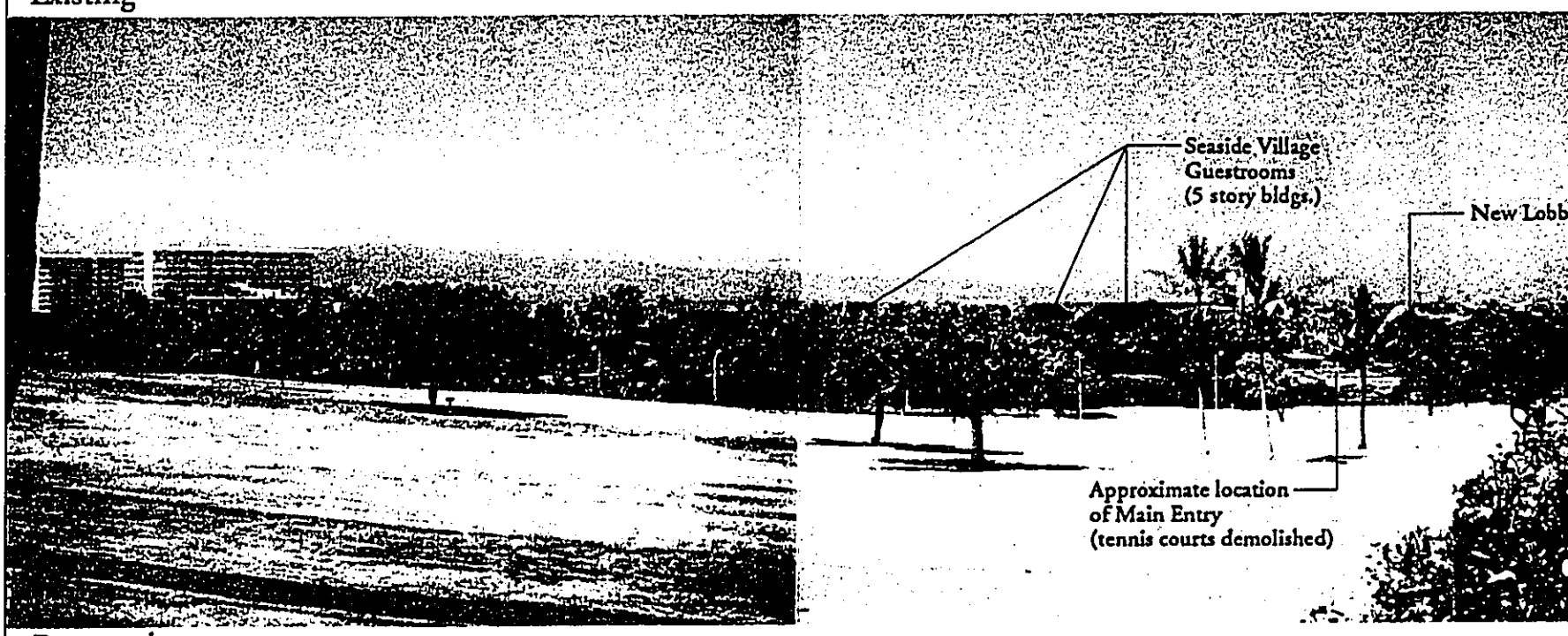

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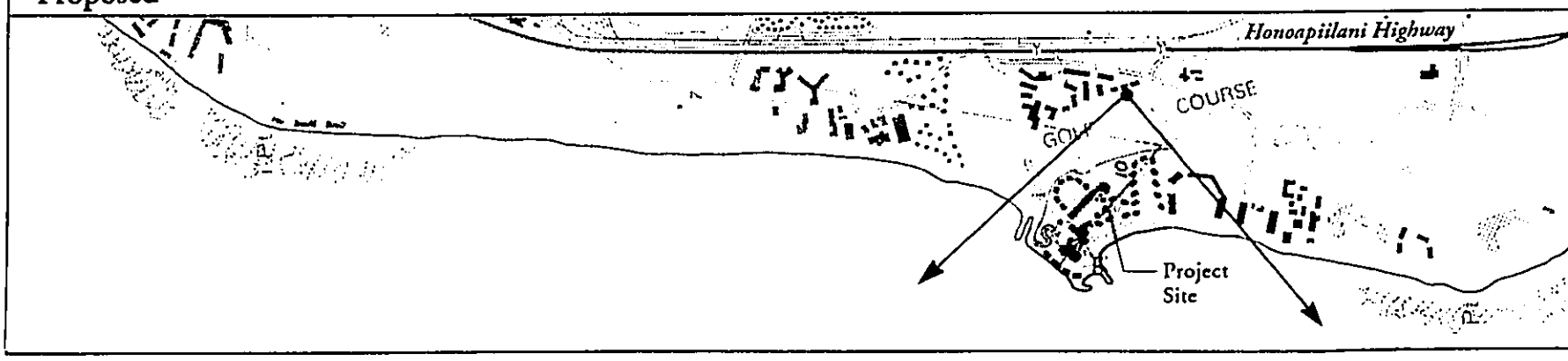
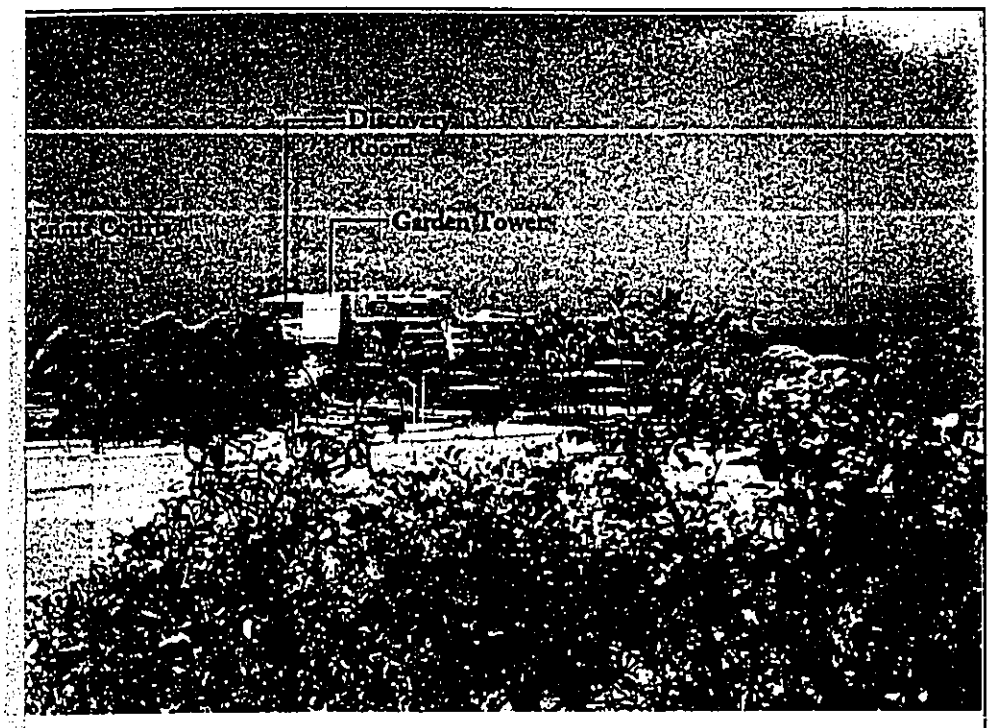
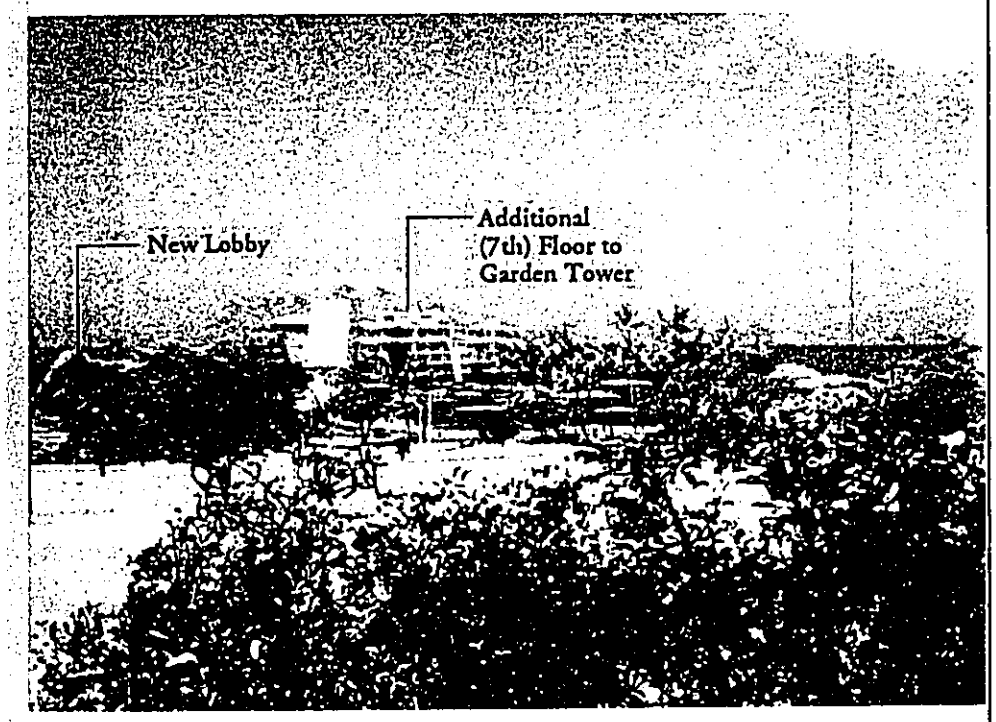






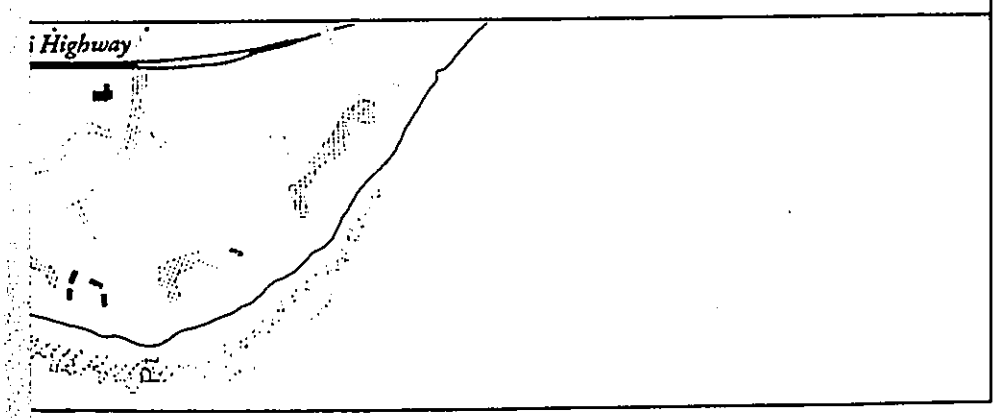
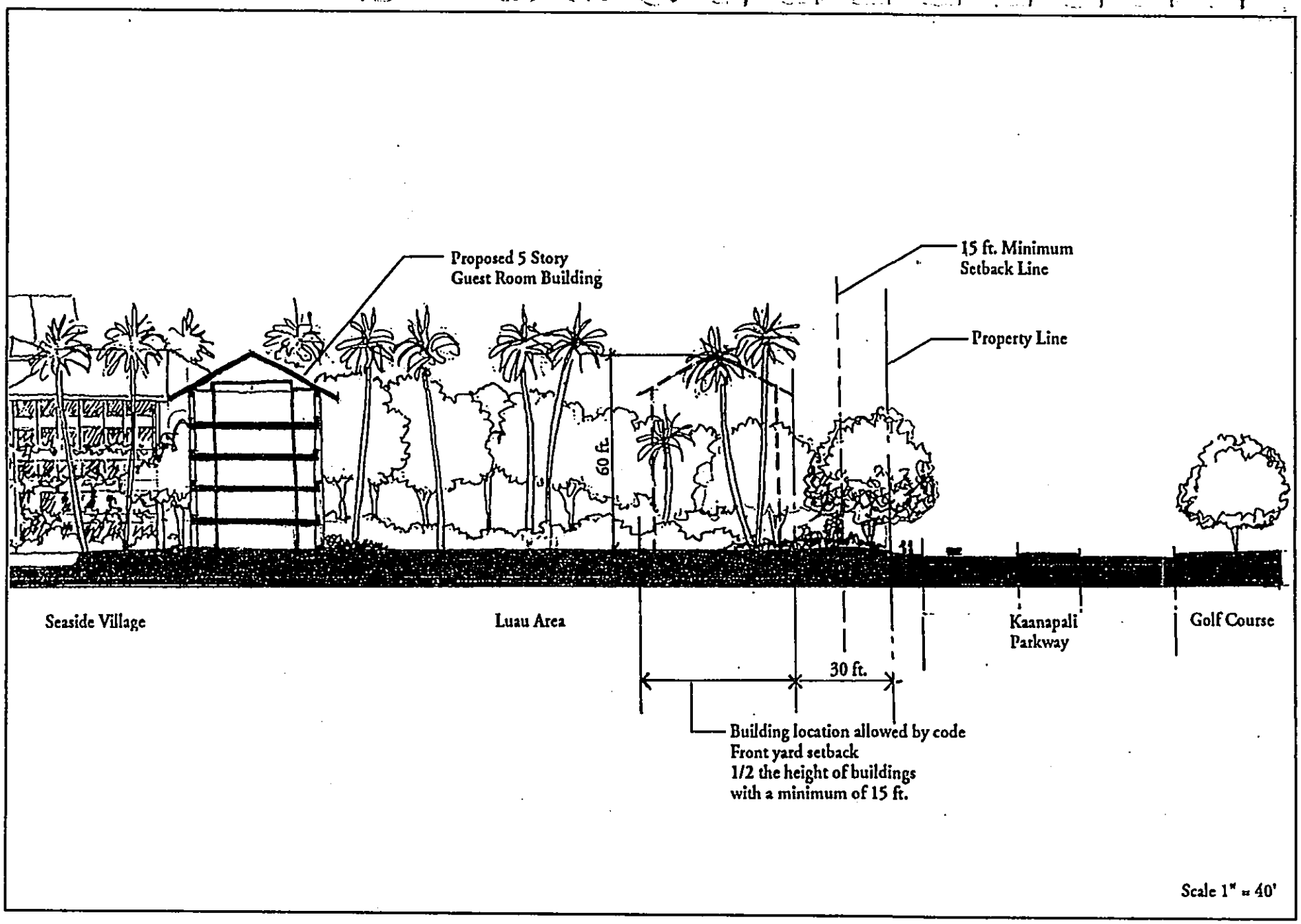


Figure: 13

View from Maui Eldorado Resort (Apt. A-205)

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Section Through Kaanapali Parkway (at Seaside Village)

Figure: 14

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

The overall visual appearance of the hotel will be softened by generous landscaping which will continue the native Hawaiian and Polynesian architectural theme. Lagoon-like pools and waterways, waterfalls and pedestrian paths throughout the property will serve to unify the landscaping within the site. As discussed previously in Chapter II and in Appendix B, the landscaping, lighting and signage will complement the hotel architecture to create a relaxed, Hawaiian experience.

Structures will be set back from Kaanapali Parkway to minimize their visual impact from the roadway. From Kaanapali Parkway, the wall of shrubs and trees visible at present would remain unchanged. The overall impression of this area for pedestrians and motorists along Kaanapali Parkway will be a pleasant sense of trees and shrubs.

It should be noted that County zoning designations for the property allow building heights of up to 12 stories. Maximum building heights proposed (5-stories) are less than one-half of the maximum heights allowed. The decision by the applicant to keep building profiles low and to set structures back from the roadway was made in order to create a hotel that blends in harmoniously with the natural environment, and minimizes potential visual impacts within the area.

The proposed improvements are subject to review by the County's Urban Design Review Board and Kaanapali Resort Architectural Advisory Committee.

4.16 Socio-Economic Characteristics

Existing Conditions

Population. Maui County (which includes the islands of Maui, Molokai and Lanai) is the third most populous County in the State. Total resident population of the County grew from 70,847 in 1980 to 100,374 in 1990, nearly a 42 percent increase. During the same period, the de facto population (which includes visitors) increased 60 percent. The District of Lahaina, where the Sheraton Maui is located, is one of the major population centers on the island, with an estimated total of 14,574 as of April 1990. (State of Hawaii Data Book 1991).

Economic Characteristics. Economic growth in Maui County, as in the rest of the State, slowed in 1992. The slowdown in the economy was evident in both tourism and construction, the County's two primary industries. In 1991, 2.3 million tourists visited Maui County, a 2.4% drop from the previous year. Figures for 1992 also fell short of post-Gulf War expectations, due largely to the struggling economies of the mainland U.S. and Japan. However, an effort is underway by public and private sectors toward diversification of the visitor market through expansion of target markets.

In the construction industry, the County's hotel construction moratorium coupled with the decline in the economy contributed to a drop in construction employment. Through May 1992, construction levels had dropped 10.5% from the same period in 1991. In mid-1992, major construction projects in the County included the Maui Community Arts and Cultural Center, a joint effort utilizing federal, State, County and private resources; a 62-unit residential project in Lahaina, a $5.5 million Kahaleakeola Resource Center developed by Maui Catholic Charities; the State Housing Finance and Development Corporation (HFDC) Lahaina Master Planned Community; and several privately-funded residential and mixed use projects which were being planned.

In the agriculture sector, Maui's sugar production in 1991 was down 10% from the previous year, due to decreases at Hawaiian Commercial and Sugar Co. (HC&S) and Pioneer Mill Co. The outlook for 1992 was not optimistic at mid-year. HC&S is conducting diversification experiments with sugar by-products, and Pioneer Mill continues its experimental coffee crop. Maui Land and Pine ended 1991 with record high production levels, and the outlook for 1992 also appeared positive.

The newly constructed, $6 million Maui Research and Technology Center (MRTC) will help attract and develop new industries on Maui and create highly skilled job opportunities. Six firms had moved into the facility as of mid-1992. Upcoming projects in the high tech field include construction of a new telescope adjacent to the Haleakala observatory and a $2 million telecommunications building next to MRTC. At the MRTC Park, a 59-acre parcel is being developed as a foreign trade zone, one of five in the State, to promote economic development and international expansion.

A 1992 First Hawaiian Bank publication indicated that if an economic recession comes to the State, Maui County would be the first of the four counties to be affected. This is largely due to the simultaneous downturns in the County's different sectors: tourism, construction, agriculture and retail. Nevertheless, the report continues, the expansion of high tech and ocean activities are encouraging signs. Furthermore, diversification within the basic industries of tourism and agriculture may help stave off the downward momentum and provide future stability.

Housing. A 1989 market study prepared by Locations, Inc. for the State HFDC's Lahaina Master Planned Community suggested that there is a considerable shortfall of housing units in the West Maui market. This has been caused by a combination of factors, including a rapid increase in population, a rapid increase in household formation as household size decreases, and a lack of new housing units to keep up with demand.

A 1989 Bank of Hawaii report states that although data on rental housing is not available, it is known that rental units at affordable rates are in particularly short supply. Current price levels and rates of increase in housing prices indicate an exceedingly tight housing market.

The same Bank of Hawaii publication indicated that the tight housing market, in turn, has affected the County's labor market, making recruitment of new employees to Maui more difficult than in the past.

Potential Impacts

As discussed above, diversification and expansion of markets within the visitor industry is seen as a positive step in dealing with the recent declines in the tourism sector. Trends appear to indicate that there are structural, more permanent changes occurring in the visitor market. A 1992 First Hawaiian Bank report points to diversification targeted at "the buoyant eastbound market and the relatively untapped European portions of the westbound market".

The proposed Sheraton Maui renovation, while not adding any additional keys, will increase the overall quality and competitiveness of the guest units. This will be enhanced further by additional conference and meeting rooms, upgraded food and beverage facilities and expanded recreational amenities.

Creation of Construction Employment. The proposed renovation will create both direct, construction-related jobs, and indirect employment. The estimated value of the renovation is $100 million (Wimberly Allison Tong & Goo estimate), over a 12 to 14 month period. This would result in approximately 800 construction related jobs as a result of this project (assuming $125,000 per job/per year). The majority of these jobs would be in the building trades, with the remainder being administrative, management and professional positions.

Direct employment of construction workers will stimulate additional purchases of goods and services, resulting in indirect and induced employment. The 800 direct construction-related jobs would in turn result in an additional 1,120 indirect and induced short-term jobs. (Personal communication with Dr. Tu Duc Pham, Department of Business, Economic Development and Tourism, Econometric Research Branch).

Creation of Operational Employment. It is anticipated that post-renovation operational employment will remain relatively unchanged from current levels. The renovated hotel will have the same number of guest rooms. Although there will be additional dining and meeting space created, the positions needed to staff these facilities will be offset, since fewer employees will be needed to maintain the hotel's upgraded mechanical plant and physical facilities than at present.

Affordable Housing. The County of Maui has an Affordable Housing Policy for Hotel-Related Developments, Maui County Ordinance No. 2093, concerning employee housing requirements for hotel developments. Because the proposed Sheraton Maui renovations will not result in an overall increase in the number of keys, the Planning Department has indicated that the project is excluded from these requirements. Moreover, the Planning Department has indicated that the concept of renovating the hotel while retaining the same number of keys is consistent with the County's policy not to increase the number of hotel rooms in the Kaanapali area.

Hotel Closure During Construction Period. The proposed schedule for the hotel renovation requires that the hotel be closed to guests during the 12 month renovation period. Several alternatives for construction phasing were investigated, which would have allowed certain areas of the hotel to be open to guests while other areas were being renovated. However, these alternatives were judged to be unsatisfactory when compared to a complete shut down.

Studies on other hotel renovations have indicated that guests who stay on the property while construction and renovation are occurring generally leave with a negative impression of their stay. The inconvenience, noise, dust and limited dining and recreational facilities generally detract from the enjoyment of the hotel. Construction hazards to guests would be an ongoing concern. As a result, many of these visitors will never return to the hotel, even after renovation is completed. The Sheraton Maui prides itself on its loyal, repeat clientele. Overall, it was felt that the negative impacts to guests resulting from construction were best avoided altogether.

Furthermore, because it must take guest needs (e.g., continuous food service) into consideration, construction phasing is usually inefficient and results in a longer construction period. Compared to the anticipated 12 month renovation period, a phased scenario would require between 18 and 20 months. Not only does this result in higher construction costs, it also magnifies the construction period impacts to adjacent property owners, such as the Kaanapali Beach Hotel.

Temporary Employee Layoffs During Construction. The major socio-economic consideration as a result of the proposed action is the impact to hotel employees during the one-year renovation period.

According to Sheraton Maui Hotel staff, the hotel currently has a total of 384 employees: 308 full-time, 26 part-time and 50 on-call. About half the employees are male and the other half female, with an average age of approximately 40 years old. The ethnic composition of the hotel staff varies, but the majority are of Filipino ancestry. The average years of service is approximately 11 years, including 123 employees who have over 29 years of service with the hotel. Many of the staff hold at least one other job within the visitor industry.

During the renovation, the hotel will be closed to guests and it is anticipated that all but approximately eight management staff would be laid off. Depending on the contractor's requirements, there could be another 10 to 12 employees retained to do project security work.

According to the Sheraton, it is not known precisely at this time what the workforce requirements of the renovated hotel will be, i.e., number of employees and job classifications. However, it is anticipated to be quite similar to current numbers and classifications.

Mitigation Measures

Of the potential socio-economic impacts discussed above, a discussion of mitigation measures is most appropriate for the issue of temporary employee layoffs during construction.

During the renovation period, all hotel employees would be considered to be on temporary layoffs. As such, the Sheraton Maui will extend the existing labor agreement, with the approval of the union to provide the necessary reemployment, seniority and retirement benefit protection. Employees willing to relocate will also be considered for suitable openings that may develop among other Sheraton Hotels in Hawaii.

The Sheraton Maui will be meeting with union representatives to discuss its plans and, in cooperation with the union, will develop a detailed plan to address all human resource issues.

V.

References

V. REFERENCES

Bank of Hawaii. Business Trends. "An Economic Profile of Maui County. March/April 1989.

Clark, John R.K. The Beaches of Maui County. 1980.

First Hawaiian Bank. Economic Indicators. "Maui County in 1992". July/August 1992.

Hawaii, State of, Department of Business and Economic Development. The State of Hawaii Data Book. 1990.

Hawaii, State of, Office of the Governor, Office of State Planning. The Hawaii State Plan. 1988.

Helber Hastert & Kimura, Planners. Kaanapali Beach Hotel Renovation Environmental Assessment. September 1990.

_____. South Beach Mauka Environmental Assessment. Prepared for: Amfac/JMB Hawaii, Inc. June 1990.

_____. North Beach Final Environmental Impact Statement. Prepared for a Joint Venture Development of Amfac Property Development Corporation and Tobishima Pacific, Inc. October 1987.

Maui, County of. Lahaina Community Plan. December 1983.

_____. The General Plan of the County of Maui, 1990 Update. 1991.

Wimberly Allison Tong & Goo. Sheraton Maui Redevelopment Master Plan. Prepared for Kyo-ya Company, Ltd. 4 January 1993.

Personal Communications with:

Assistant Chief Charles Hall, Maui County Police Department

Tom Leleikis, Department of Health, Clean Air Branch

Ruby Mizue, U.S. Army Corps of Engineers, Pacific Ocean Division, Operations Branch

John Naughton, National Marine Fisheries Service

Tu Duc Pham, Department of Business Economic Development and Tourism, Econometric Research Branch

Wendell Sano, Department of Health, Clean Air Branch

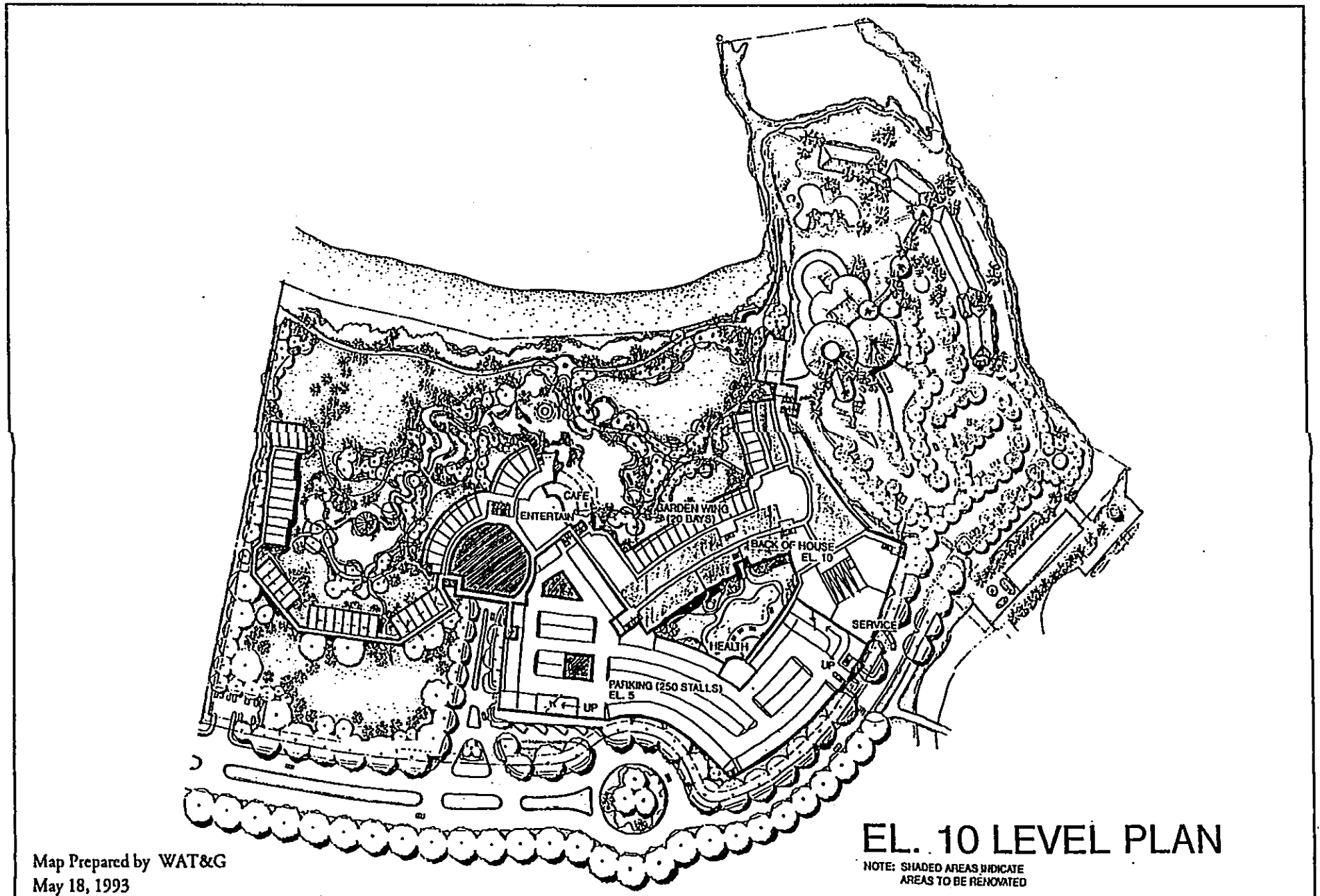
Dave Wissmar, Maui County Dept. of Public Works, Solid Waste Division

Appendices

Appendix A

Plan Sections & Elevations

Wimberly Allison Tong & Goo



Map Prepared by WAT&G
May 18, 1993

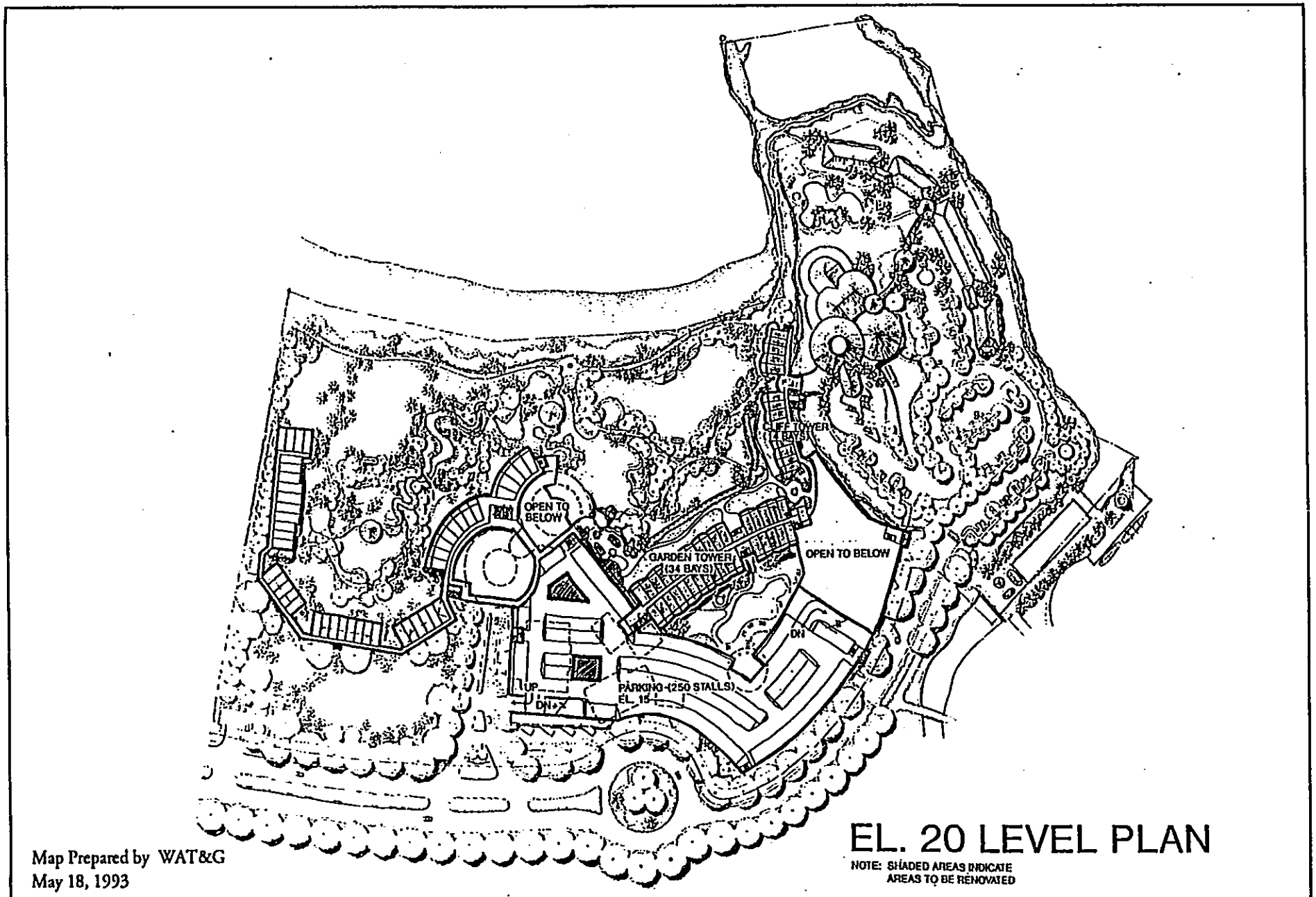
EL. 10 LEVEL PLAN

NOTE: SHADED AREAS INDICATE AREAS TO BE RENOVATED

Elevation 10 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G
May 18, 1993

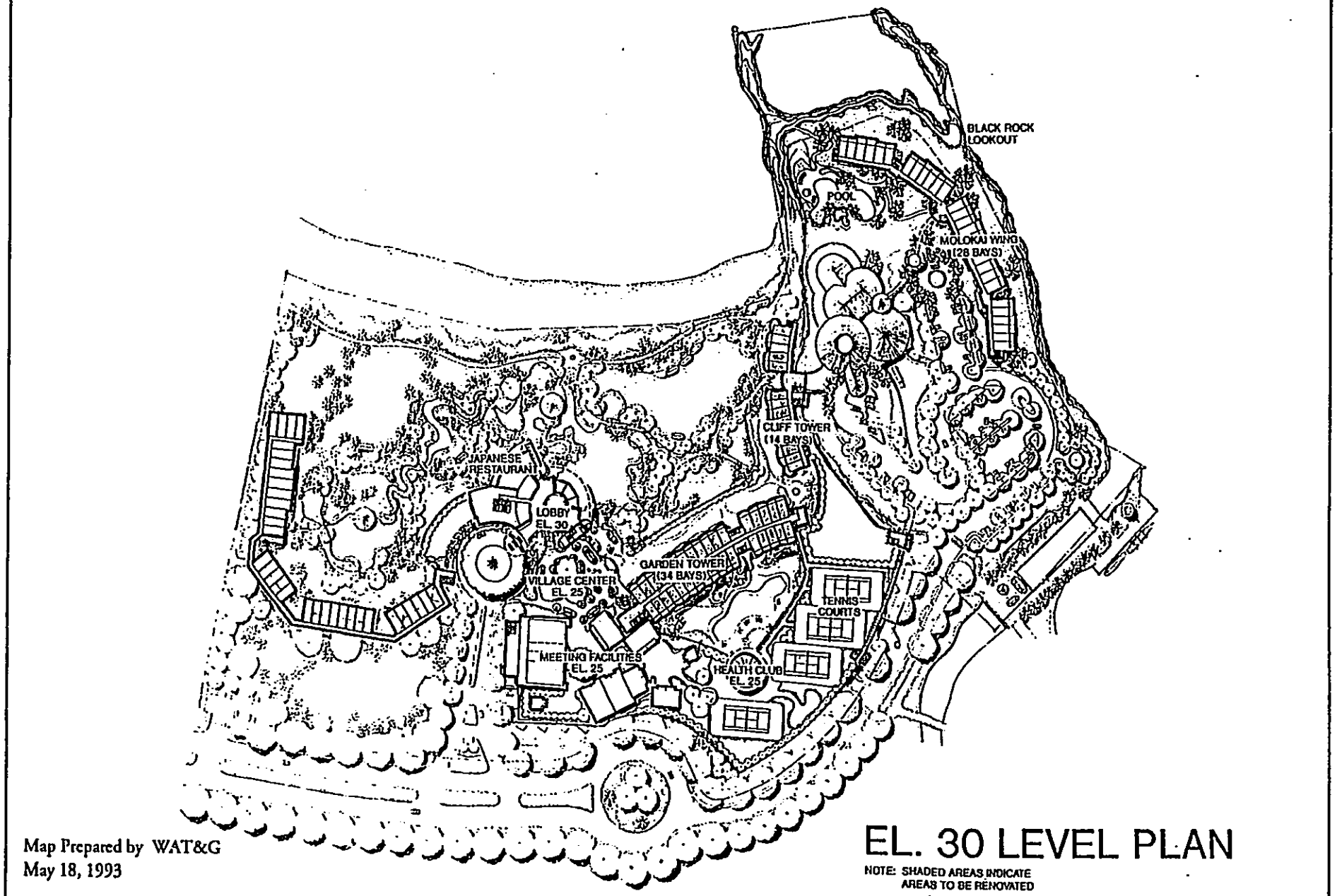
EL. 20 LEVEL PLAN

NOTE: SHADED AREAS INDICATE AREAS TO BE RENOVATED

Elevation 20 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G
May 18, 1993

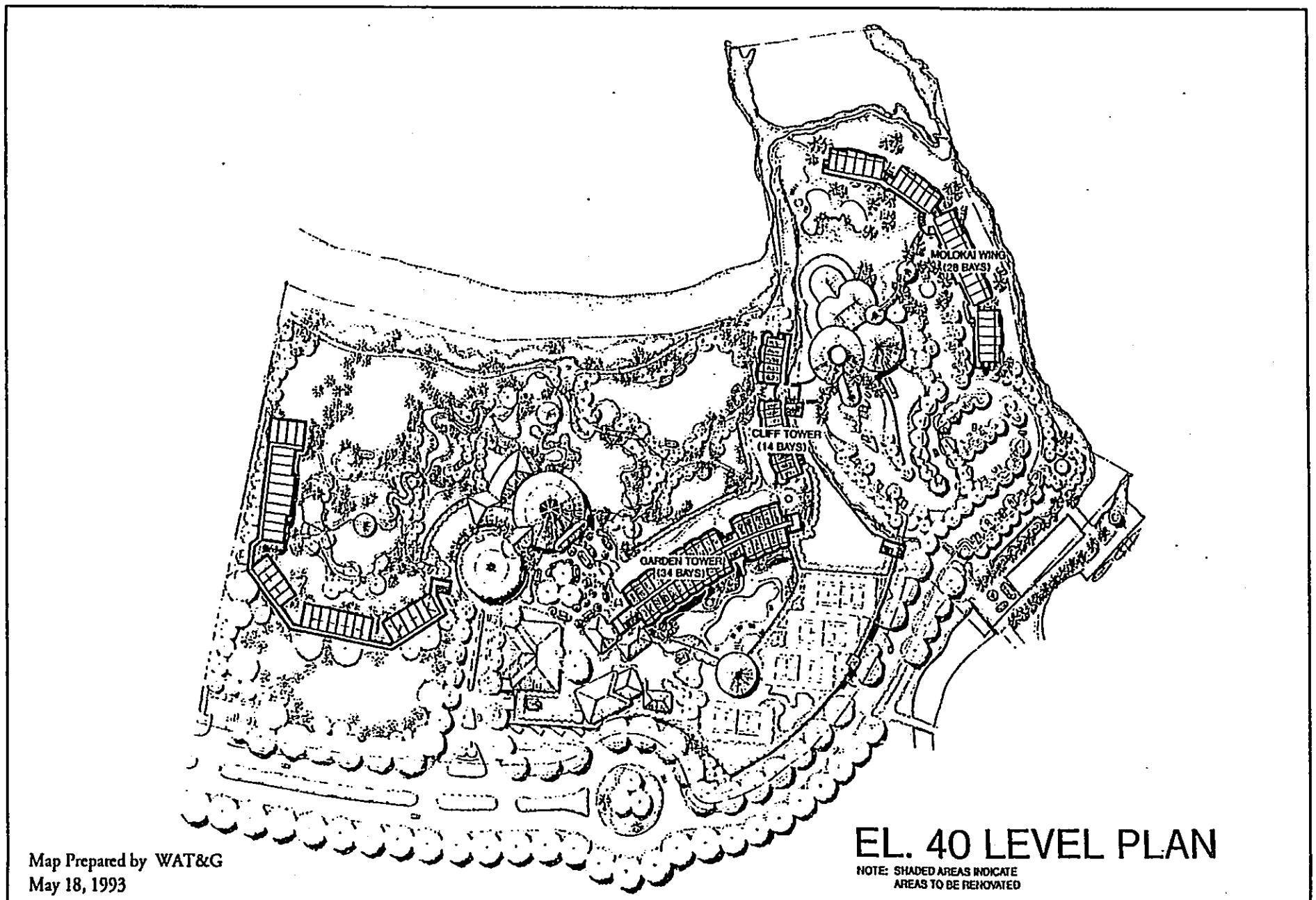
EL. 30 LEVEL PLAN

NOTE: SHADED AREAS INDICATE
AREAS TO BE RENOVATED

Elevation 30 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G
May 18, 1993

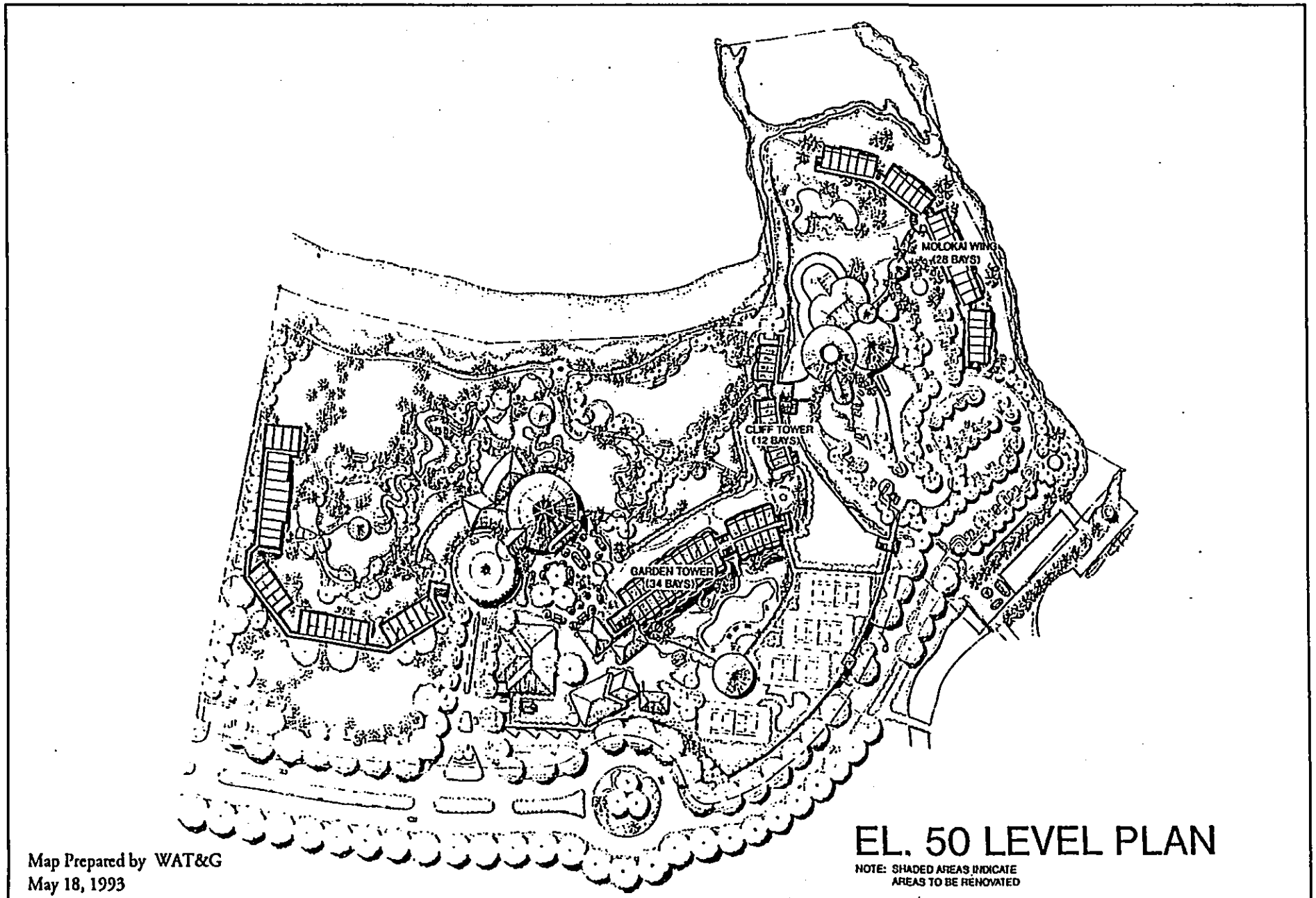
EL. 40 LEVEL PLAN

NOTE: SHADED AREAS INDICATE
AREAS TO BE RENOVATED

Elevation 40 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G
May 18, 1993

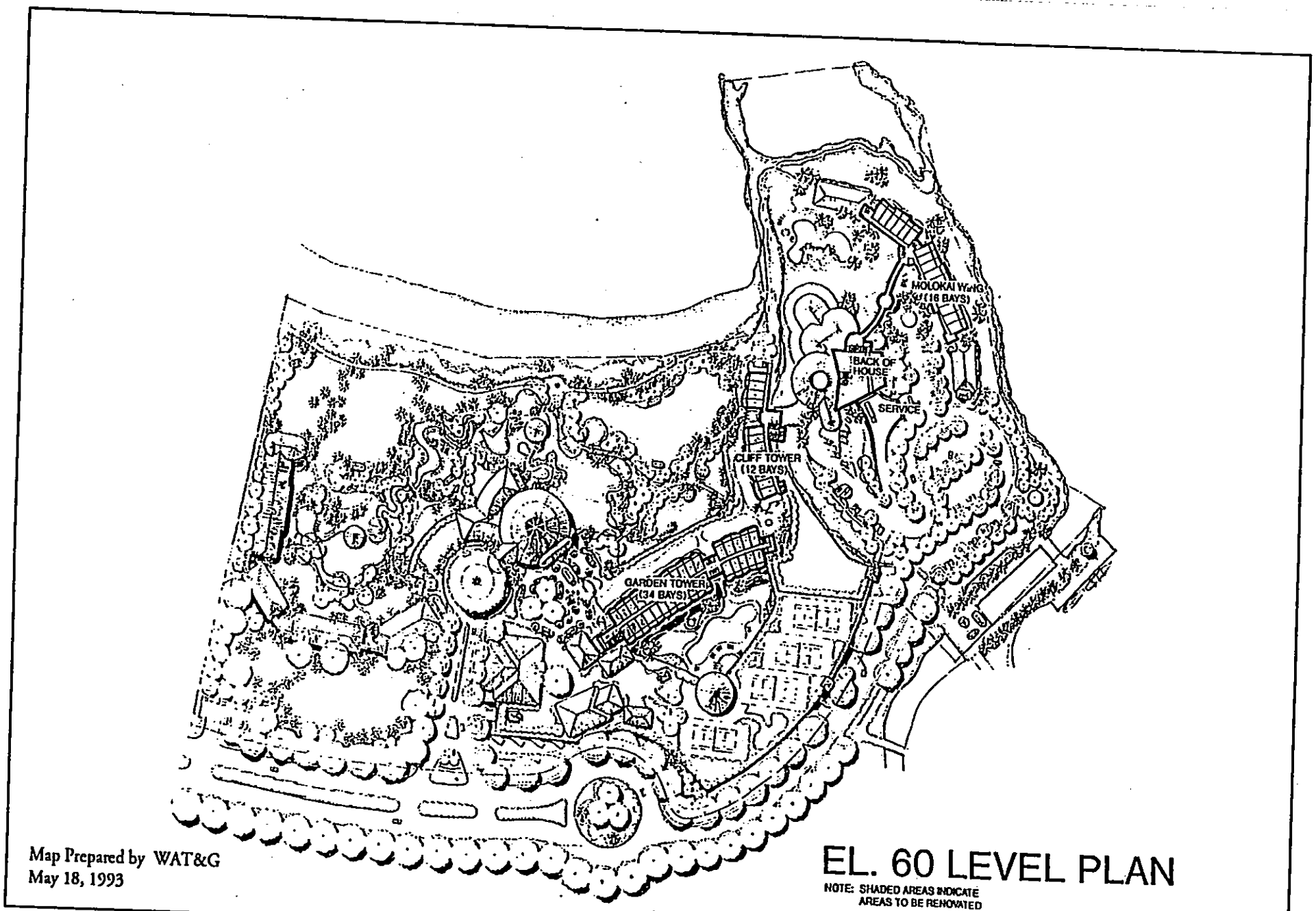
EL. 50 LEVEL PLAN

NOTE: SHADED AREAS INDICATE
AREAS TO BE RENOVATED

Elevation 50 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G
May 18, 1993

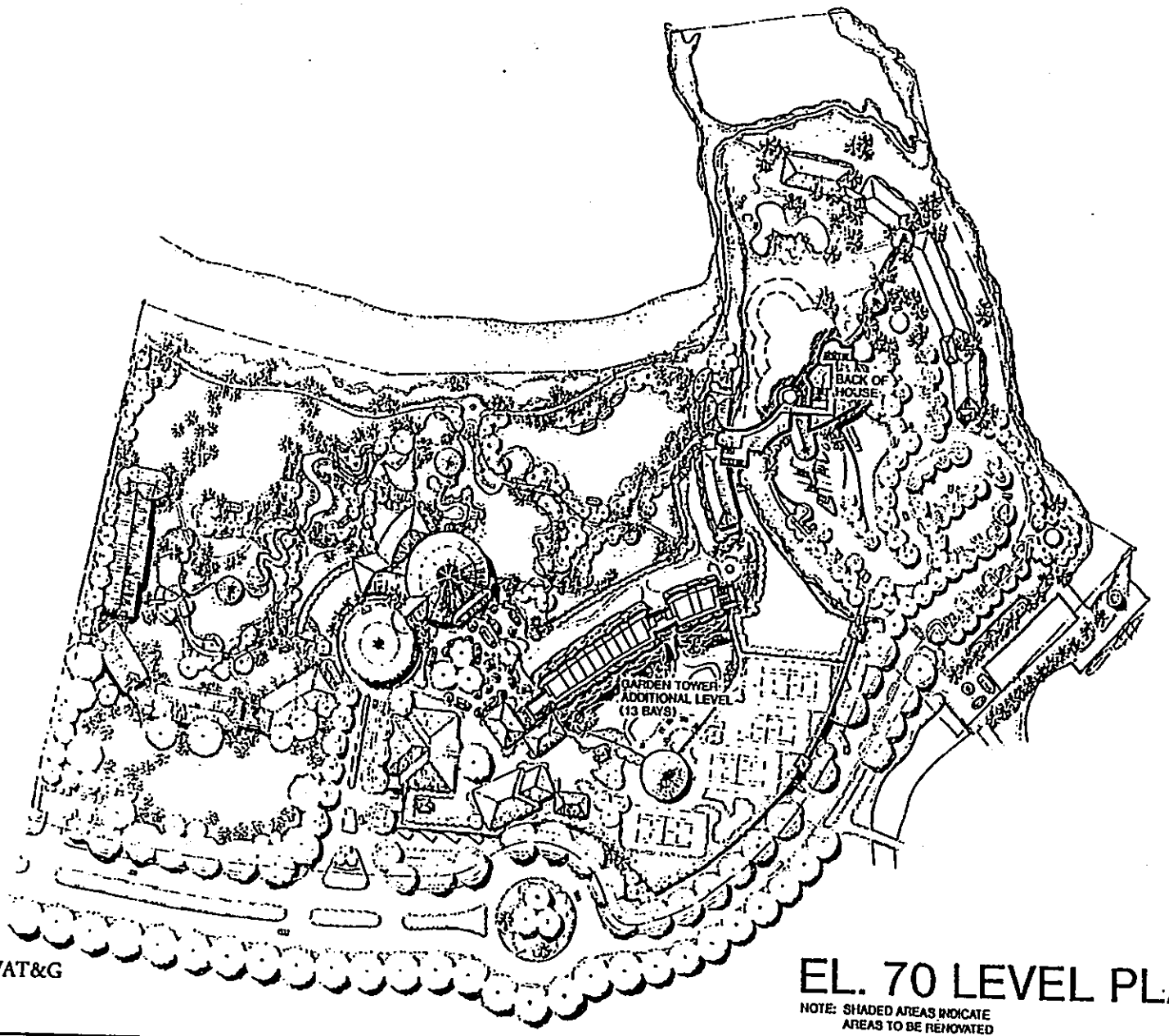
EL. 60 LEVEL PLAN

NOTE: SHADED AREAS INDICATE AREAS TO BE RENOVATED

Elevation 60 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by WAT&G
May 18, 1993

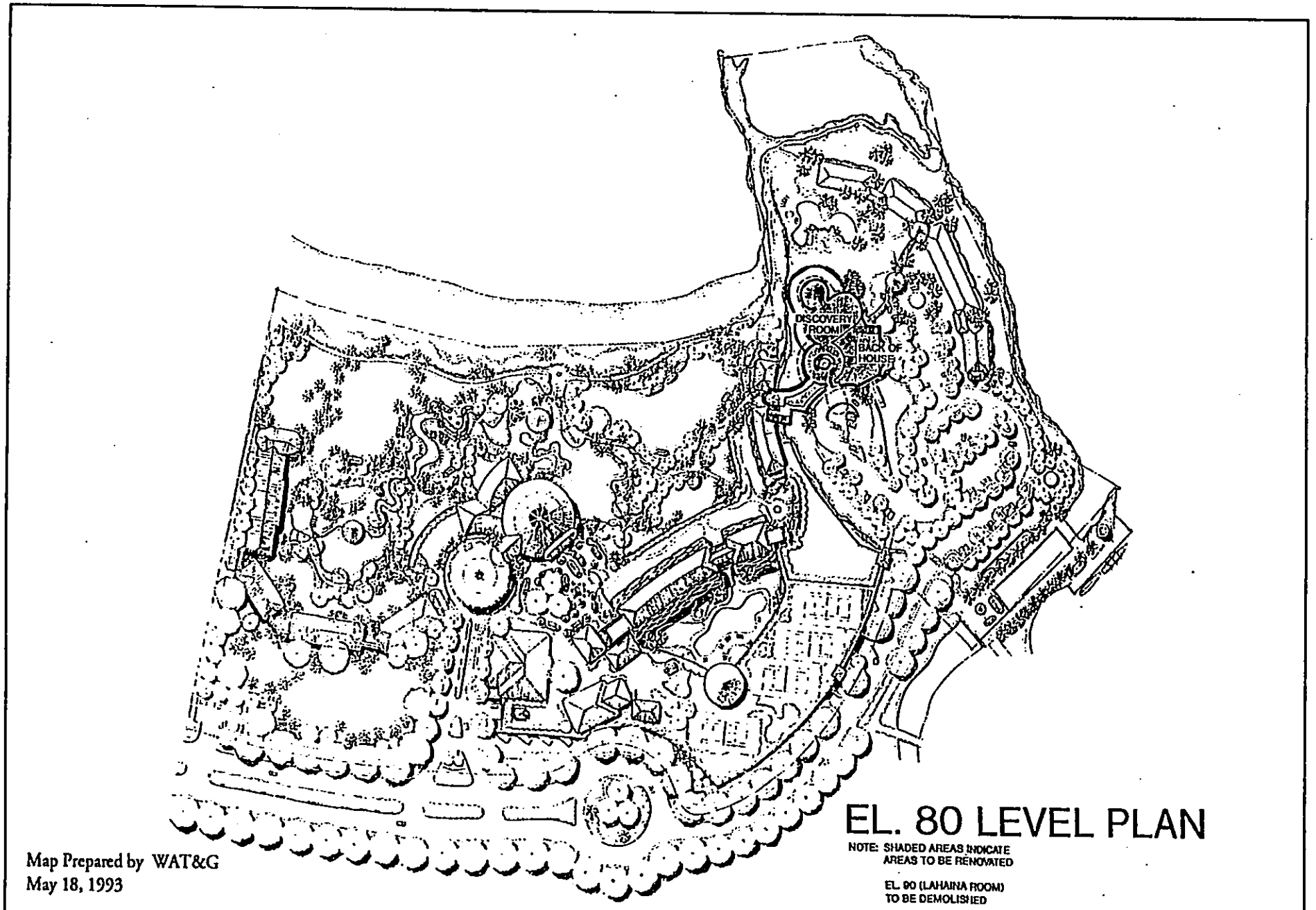
EL. 70 LEVEL PLAN

NOTE: SHADED AREAS INDICATE AREAS TO BE RENOVATED

Elevation 70 Level Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



EL. 80 LEVEL PLAN

NOTE: SHADED AREAS INDICATE AREAS TO BE RENOVATED

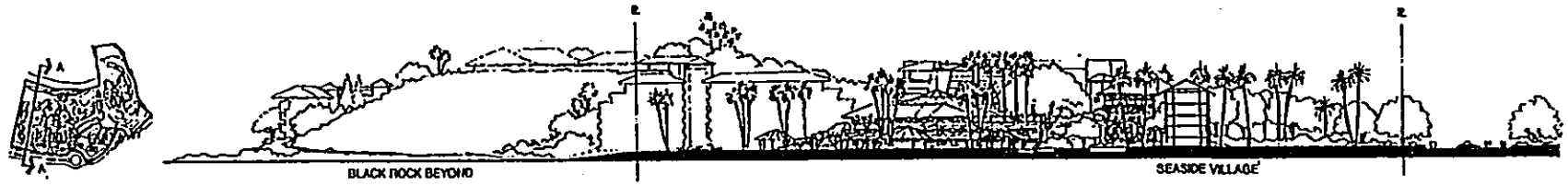
EL. 80 (LAHAINA ROOM) TO BE DEMOLISHED

Map Prepared by WAT&G
May 18, 1993

Elevation 80 Level Plan

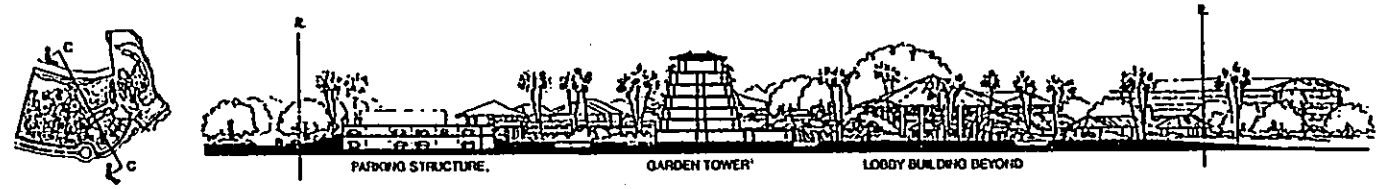
SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

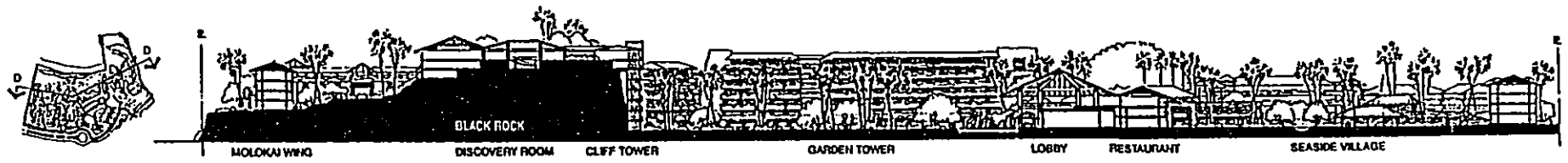


SITE SECTION A·A

SITE SECTION B·B



SITE SECTION C·C



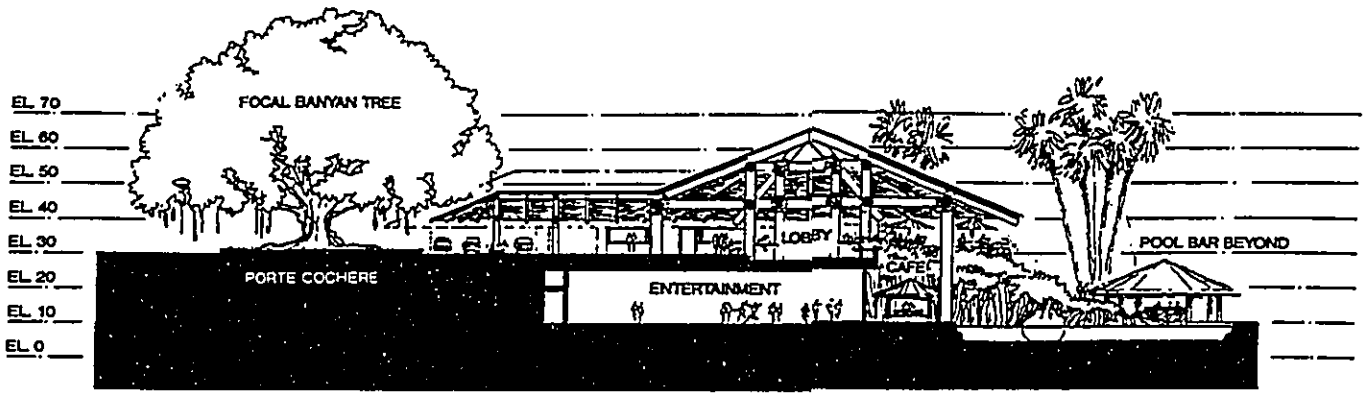
SITE SECTION D·D

Map Prepared by WAT&G

Site Sections

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



LOBBY BUILDING SECTION

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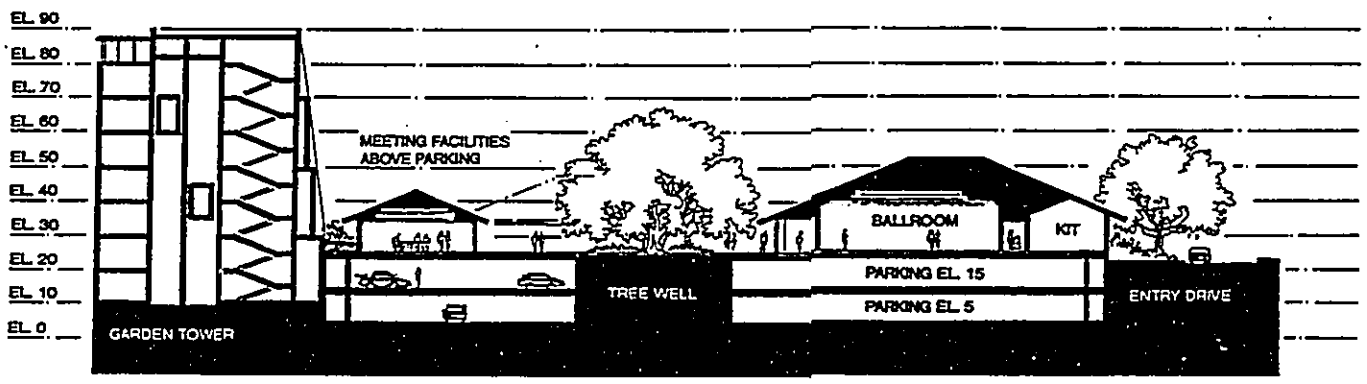
0 5 10 20 40 80



GARDEN TOWER / PARKING SECTION

1" = 20'
0 5 10 20 40 80

Map Prepared by WAT&G

Building Sections

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

Appendix B

Landscaping/Signage/Lighting Plan

Walters Kimura Motoda

Landscape Design Concept

Signage Concept

Landscape Lighting Concept

Landscape Irrigation Concept

Prepared by:

Walters, Kimura, Motoda, Inc.
Landscape Architects

SHERATON MAUI

Landscape Design Concept

The unassuming entry, the lack of a cohesive landscape design, the small swimming pools and the poor pedestrian circulation patterns of the Sheraton Maui are all negative factors which detract from what is the prime property at Kaanapali. The landscape design concept seeks to solve these problems, in the context of a Hawaiian experience environment, while complementing the overall goal of creating a special place for people to relax, play and meet other people.

Over the years, a wide variety of plants have been added to the original planting plan creating a sense of disarray. There is a lack of cohesiveness because there is no organization to the planting. The landscape design will solve this problem by combining existing and new plant material into a plan which will unify the entire property, thereby creating a stronger, singular image of the hotel.

The landscape design will incorporate as many existing trees and shrubs as possible. These plants will be protected during the construction/renovation of the hotel. Where this is not possible, the plant material may be relocated to another area of the site. Plant material will also be relocated to group similar plants together for aesthetic purposes. Only those plants which are in a healthy growing condition will be saved; diseased plant material, which cannot be treated, will be removed.

Additional plant material will be brought in from nurseries on Maui, Oahu and/or Hawaii. These plants, including the native Hawaiian species, will be plants cultivated for landscaping purposes; no plants will be taken from the wild.

The landscape plant palette consists predominantly of native Hawaiian and Polynesian introduced plants; an emphasis has also been placed on drought-resistant and salt-tolerant plant material. While these plants will provide the framework for the landscaping, tropical plants will be used to add color, texture, form and fragrance. The result will be a lush, tropical paradise that hotel guests only dreamed of before.

The existing entry is very nondescript; there is no focal point or special planting to distinguish the hotel. In contrast, the proposed landscape plan indicates a grove of stately Loulu Fan Palms with flowering groundcover below to accentuate the entry. A new sign wall will also be located beneath the Fan Palms, instead of in the grassed median strip, to highlight the entry.

Medium canopy trees will line the entry drive creating a lowered overhead plane. This dramatically gives way to the focal point of the entry sequence, a large Banyan Tree at the porte cochere. The Banyan Tree, with its dense canopy and hanging, aerial roots, serves to define the outdoor space and give the feeling of arrival. More Loulu Fan Palms ring the drop-off area, repeating the visual imagery of the hotel entry.

The dominant and organizing element of the landscaping is the new, lagoon-like swimming pool. Two smaller free-form pools will also be built. They will replace the 2 existing, small, geometric pools. Although the hotel is located at the best beach in Kaanapali, the swimming pool will be equally as enticing; guests will be given the best of both worlds.

All of the 45,000 square feet of the pools are swimmable. The new pools will increase the amount of pool area at the hotel by over 11 times. Larger, traditional, pool-like areas will be connected by swimmable waterways. These waterways, like the pedestrian paths, will provide an enjoyable experience as one swims throughout the site, exploring the different areas and finding one's own special place. There will also be waterfalls, adding their soothing sounds and visual appeal, to complement the peaceful, relaxful open pool areas and the active waterways.

The swimming pools will be able to accommodate approximately 600 people. Taking into account the number of people who are in surrounding areas, but not in the pool, the number of users increases to 1,000. Paved deck spaces and lawn areas are provided intermittently for lounging and sunbathing while groundcovers and shrubs afford privacy.

The landscape design, like the architectural, uses a series of small scale, people places to create a special sense of place. Large lawn areas provide outdoor function spaces and a sense of openness, while smaller, intimate spaces provide a peaceful, tranquil setting. The shade of a tree, a bench tucked into a lushly planted area and a secluded lawn area can all be comfortable places for people to relax and call their own. Even in large, public spaces such as the Village Center, canopy trees are used to create people spaces, thereby enhancing the low density character of the hotel.

Theme gardens, which reflect Hawaii's rich botanical heritage, are situated throughout the property; there is a Ginger and Heliconia, tropical fruit and flower, palm, and native Hawaiian coastal garden to name a few. These gardens will be used to create a series of smaller spaces within the overall landscaping. Displays and signage will accompany the plants to explain their historical, ethnobotanical and cultural significance.

Meandering paths link the theme gardens, as well as other site amenities, in addition to providing an enjoyable route for walking tours of the site. The beach promenade links the Kaanapali Beach Hotel with the famous Black Rock, a favorite gathering place for both tourists and locals alike.

Thatched pavilions will be located throughout the site to provide areas for craftsmaking displays, storytelling or other Hawaiian activities. Smaller pavilions will be used as shelters for guests to relax.

While the existing luau area is located in a private space next to the cottages, the new luau area will be built in a more public-oriented space. Instead of a stage, a traditional hula mound will be built. This space can also be used as a multi-purpose area for

outdoor activities and events. Adjacent to the luau area will be the imu and a lawn area for playing Hawaiian games. The planting around the luau area will consist of plants which will be used for the luau and the imu such as banana, green ti and sweet potato.

The 3 existing tennis courts between the entry and cottages will be demolished; new courts will be built adjacent to the Health Center. The new location will be farther away from hotel rooms and occupy a less prominent area on the property. A swimming pool and exercise lawn are also located nearby. These amenities will provide venues for physical activities which are so important to the outdoor-oriented Hawaiian lifestyle.

The landscape design seeks to complement the goal of creating a place for people to relax, play and meet other people by dividing the property into a series of smaller, people spaces; different areas are dedicated to different activities with each having its own atmosphere. However, the swimming pool, walkways and plant material serve to organize the various design elements into a cohesive whole to create a hotel which will provide a truly Hawaiian experience.

Signage

The signage for the Sheraton Maui will include directional, identification and traffic signs. Natural materials such as carved wood and stone will be used to create a feeling of old Hawaii, while Hawaiian design motifs will serve as a unifying element and reinforce the importance of a Hawaiian experience environment.

Hawaiian petroglyphs, specific to the subject matter of the individual signs, will be carved in the directional and identification signs; the petroglyph of a turtle or canoe may be used to signify the Seaside Village, while a figure grouping would be appropriate for the Village Green.

The signs for the theme gardens will feature relief carvings that incorporate the design motifs of Hawaiian quilt patterns. The carvings for each garden will be unique and capture the essence of the beautiful plants which are grown in Hawaii. Individual plants will also have signs giving their name, both botanical and common, and a brief description of the significance of the plant.

Large ground signs will be supported by a stone wall base. Stone was the predominant building material used by the Hawaiians because of its availability; it was used in the construction of walls, houses, fishponds and heiaus.

Small ground signs will be hung from traditional Hawaiian "storage racks. These racks, located outside of the hales, were used to hang calabashes.

Traffic signs will use internationally recognized symbols and be of sufficient size and quality to ensure the public's safety.

The signage for the hotel will not only direct and inform hotel guests and visitors, but give insight into the history and culture of Hawaii.

Landscape Lighting Concept

The landscape lighting concept is to provide varying light levels throughout the property to evoke specific moods while ensuring the safety and security of hotel guests. Activity areas will be brightly lit to accommodate nighttime functions whereas other areas will have more subdued lighting to create a peaceful, relaxful atmosphere. A combination of tiki torches, well lights, accent lights, path lights and moonlighting will be used.

Tiki torches will be used primarily in the luau area and along the edges of the swimming pool. The reflections of the soft, glowing flames in the water will create the feeling of a romantic, island paradise and encourage moonlit walks through the property.

Well lights and accent lights will be used to up-light the entry sign wall, trees, shrubs and other items of interest so guests will be able to enjoy the beauty of the hotel at night. Well lights will be located in lawn areas, whereas accent lights will occur in groundcover areas; both will be directed away from the observers to prevent direct glare.

Path lights will be located where the tiki torches, well lights and accent lights do not provide adequate ambient light to ensure the safety and security of hotel guests. These lights will be carefully placed in areas where there are obstacles or stairs.

Moonlighting will also be used to accentuate the landscaping. Shadows cast onto the ground from breadfruit trees, kukui trees, and other plant material with interesting leaf forms will create rich patterns to delight pedestrians.

The landscape lighting design, which involves the proper selection and location of light fixtures, will permit guests to enjoy the hotel both during the day and at night while serving aesthetic, safety and security purposes.

Landscape Irrigation Concept

The landscape irrigation concept is to promote the healthy growth of the plant material while conserving water. Many of the native Hawaiian and Polynesian-introduced plants, which make up a majority of the plant material, are drought-resistant and salt-tolerant and therefore, do not require much water. These plants would also adapt more readily to the use of brackish water for irrigation.

The irrigation system will be separated according to grass and groundcover areas and the locations of plant material will be based on similar watering requirements; this will ensure that plants which require large amounts of water will be sufficiently irrigated without overwatering those that are less-thirsty.

The sprinkler heads will be selected so their precipitation rates do not exceed the infiltration rate of the soil; this will conserve water by eliminating run-off. It will also prevent the leaching of nutrients, pesticides and fertilizers in the soil past the root zone.

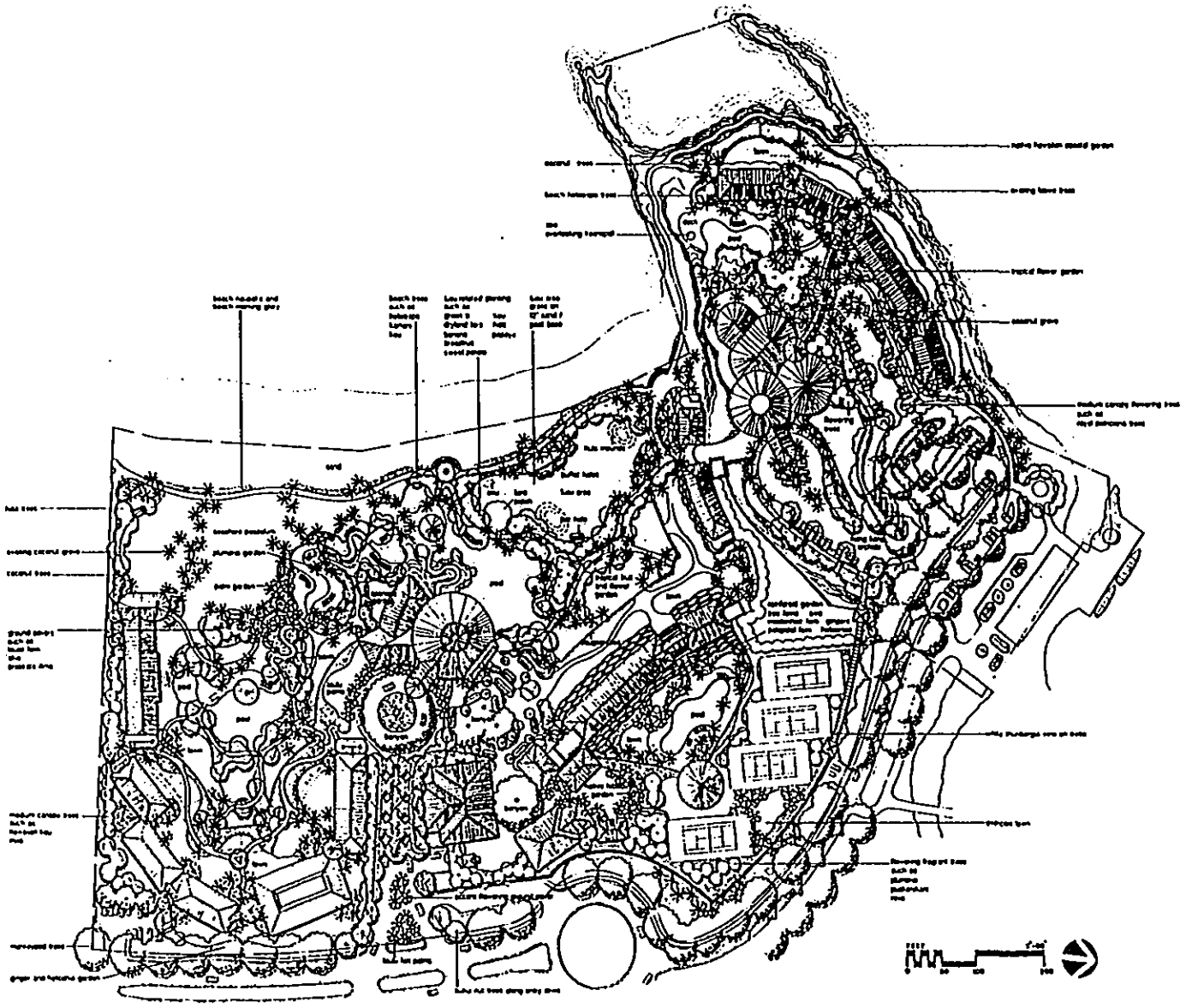
The layout of the sprinkler heads will be designed to provide a uniform distribution pattern. Attention will be given to avoid overspraying buildings, walkways, roads, etc.

A drip system will be used to irrigate interior and lanai planters. It is an efficient means of irrigating because the loss due to evaporation is minimal. There is also no wetting of the building and planters. Drip irrigation systems also reduce the occurrence of insect, disease and fungal problems by minimizing the wetting of the soil surface and plant foliage.

The irrigation system will be controlled by a central computer; this will not only conserve water, but energy and human resources as well. The computerized control system can:

1. Automatically adjust station operating times based on evapotranspiration rates.
2. Be connected to a weather station which records air temperature, solar radiation, relative humidity, wind speed, wind direction and rainfall.
3. Create irrigation schedules which can adjust to seasonality and the growth cycle of the plants.
4. Monitor the gallonage of water used on a hourly, daily or seasonal basis.
5. Monitor equipment failures in the system.

A properly designed landscape irrigation system is necessary to keep the plants in a healthy growing condition. Together with a good maintenance program, the landscaping will provide guests with the perfect setting for a memorable vacation experience.



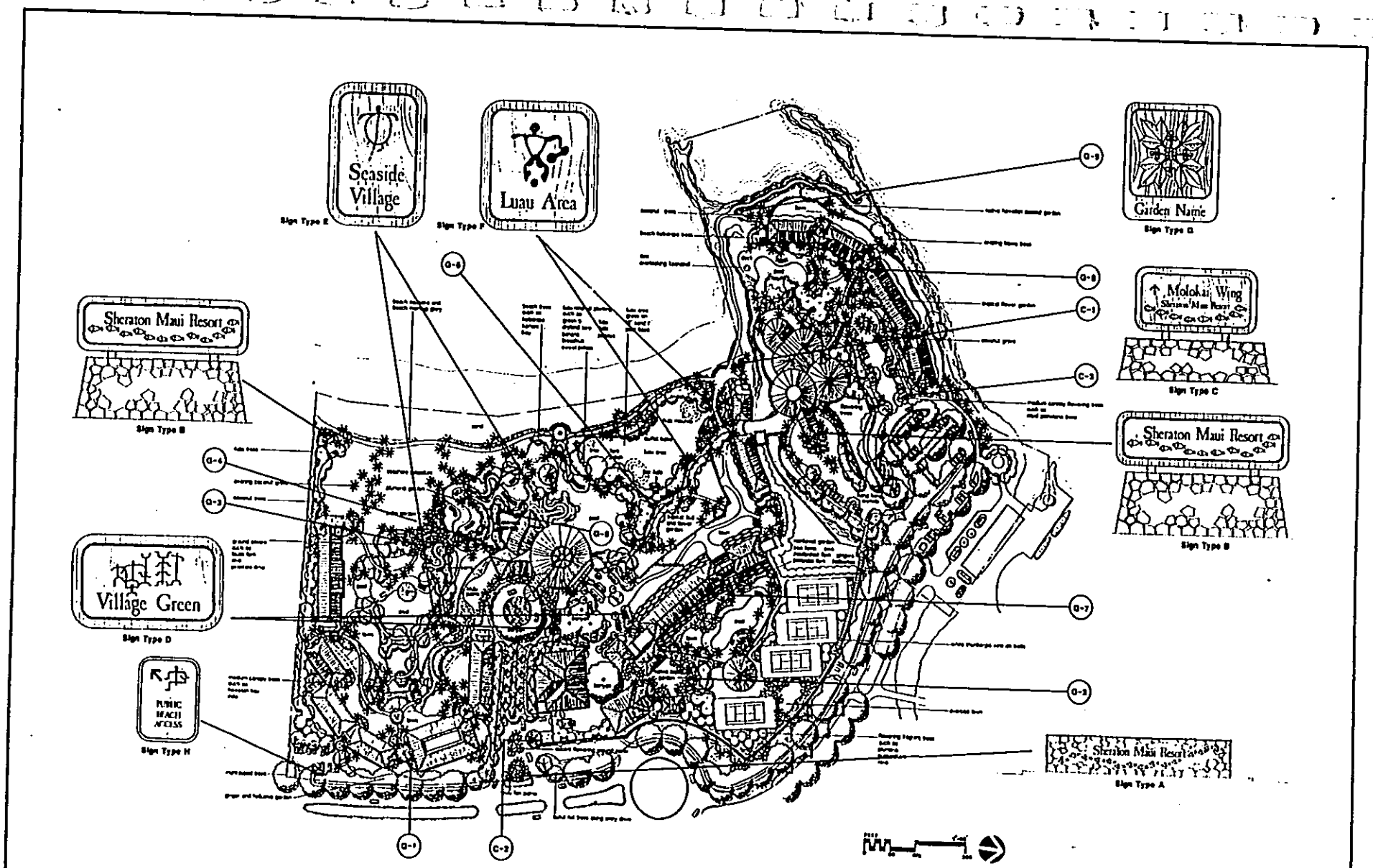
Map Prepared by Walters Kimura Motoda
November 1, 1992

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, Landscape concepts illustrated are still applicable to the current plan.

Landscape Site Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



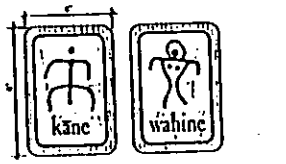
Map Prepared by Walters Kimura Motoda
November 1, 1992

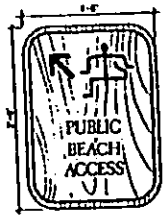
Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, Signage concepts illustrated are still applicable to the current plan.

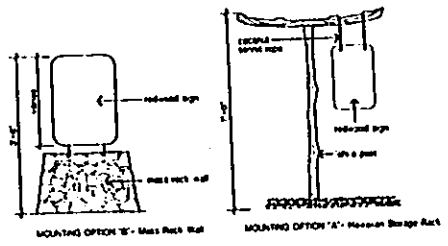
Signage Site Plan

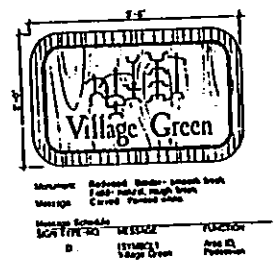
SHERATON MAUI REDEVELOPMENT

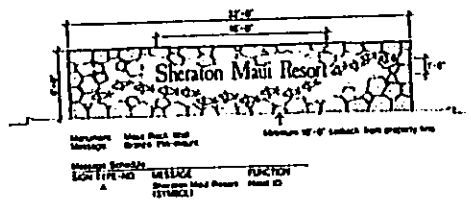
Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners









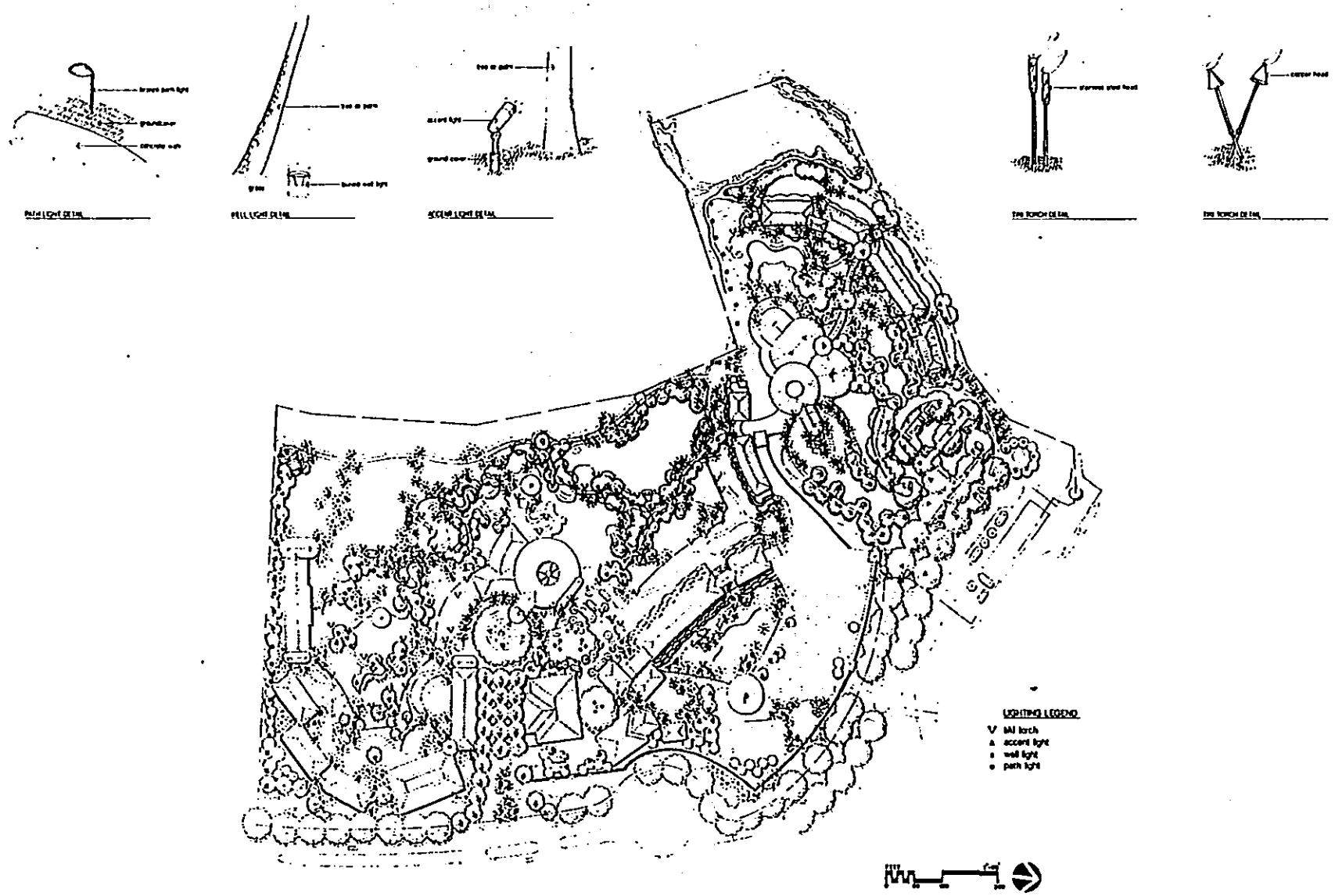


Map Prepared by Walters Kimura Motoda

Signage Plan Details

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners



Map Prepared by Walters Kimura Motoda
November 1, 1992

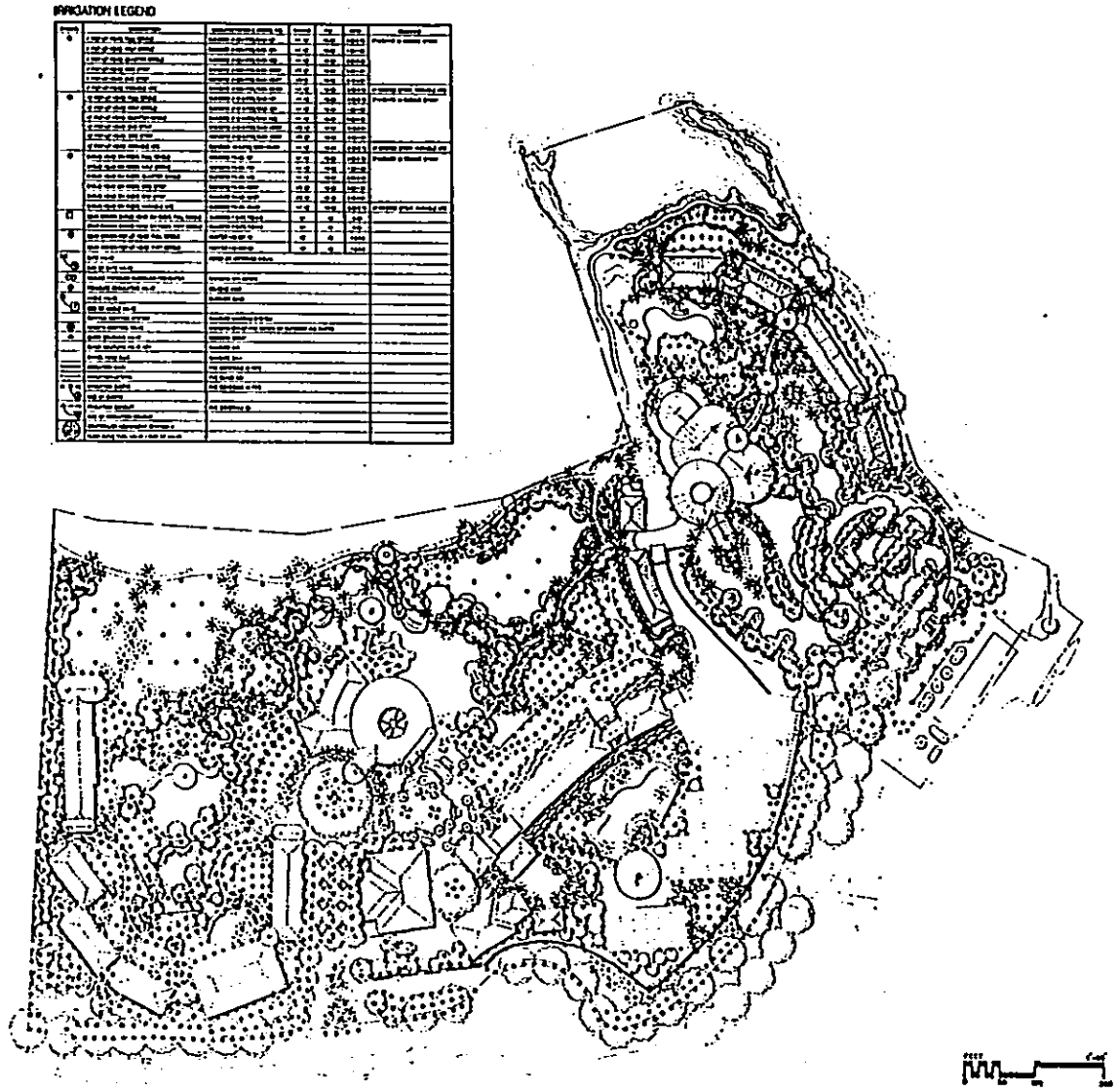
Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, Lighting concepts illustrated are still applicable to the current plan.

Proposed Landscape Lighting Plan

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

IRRIGATION LEGEND



Map Prepared by Walters Kimura Motoda
November 1, 1992

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, Irrigation concepts illustrated are still applicable to the current plan.

Proposed Landscape Irrigation Plan

SHERATON MAUI REDEVELOPMENT

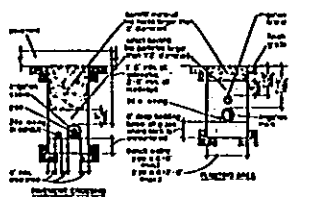
Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

IRRIGATION NOTES

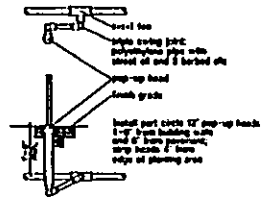
1. Perform a pressure test at the Point of Connection to verify static and working pressure. Notify the Landscape Architect if any discrepancies should occur.
2. The minimum static pressure to be ___ psi. The irrigation system is zoned to operate at the pressure indicated on the Irrigation Legend for all head types. The Landscape Contractor is required to: be aware of remote control valves and operate to locate operate at the specified pressure.
3. The Contractor shall verify location of all existing utility lines prior to construction operations. Any utility lines damaged by Contractor's operations shall be repaired at no additional cost.
4. For finish grading see Civil drawings.
5. For finish earthbody layout see Civil drawings.
6. Contractor shall notify Landscape Architect of any discrepancies prior to commencement of work.
7. For building layout see Architectural drawings.
8. Provide 6" pop up body for all finish located in lawn areas.
9. Provide 12" pop up body for heads located in groundcover areas adjacent to curbs, walkways and road edges.
10. All other irrigated heads to be shrub spray on riser unless shown as noted on plan.

Pipe Legend

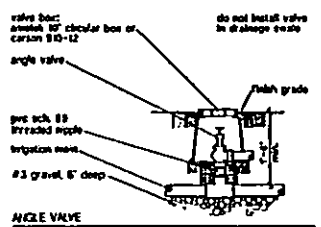
Type Size	Sleeve Size (Schedule 40 PVC)
1/2"	2"
3/4"	2"
1"	2"
1 1/4"	4"
1 1/2"	4"
2"	4"
2 1/2"	4"
3"	6"
4"	6"



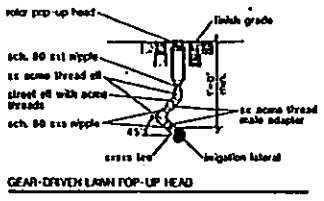
TYPICAL PIPE TRENCH



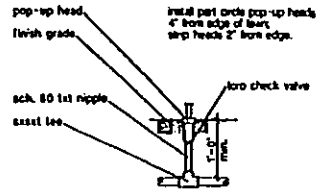
12" POP-UP HEAD



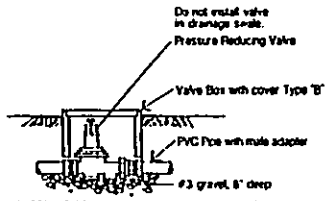
ANGLE VALVE



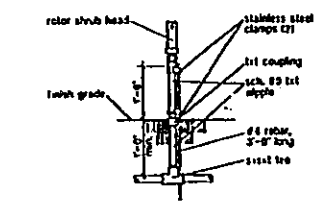
GEAR-DRIVEN LAWN POP-UP HEAD



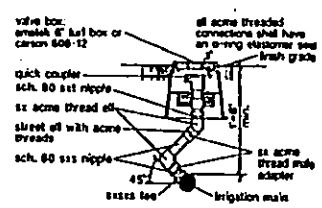
4" POP-UP HEAD



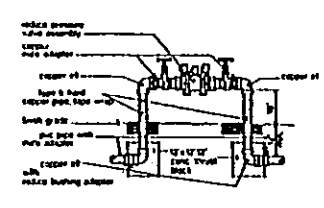
PRESSURE REDUCING VALVE INSTALLATION DETAIL



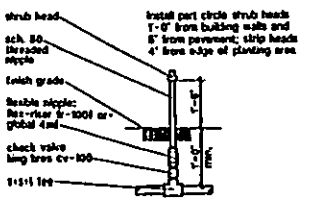
ROTOR SHRUB HEAD



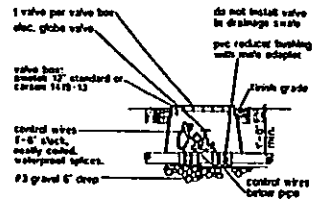
QUICK COUPLER



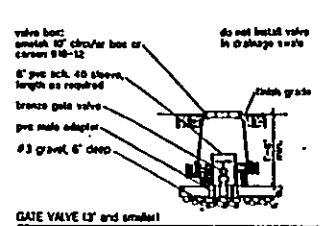
REDUCE PRESSURE BACKFLOW PREVENTER



SHRUB HEAD



ELECTRIC VALVE



GATE VALVE 13" and smaller

Map Prepared by Walters Kimura Motoda

Irrigation Plan Details

SHERATON MAUI REDEVELOPMENT

Prepared for: Kyo-ya Company, Ltd.
Prepared by: Helber Hastert & Fee, Planners

Appendix C

Archaeological Subsurface Inventory Survey

Paul H. Rosendahl, Inc.

JOHN WAIHEE
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

KEITH AHUE, CHAIRPERSON
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May 3, 1993

RECEIVED
-5
HELBER HASTERT & FEE

LOG NO: 8168
DOC NO: 9304AG67

Dr. Paul H. Rosendahl
PHRI
305 Mohouli Street
Hilo, Hawaii 96720

Dear Dr. Rosendahl:

SUBJECT: Historic Preservation Review of an Archaeological Report (PHRI Final Report No. 1378-041993) Hanakao'o, Lahaina, Maui

Thank you for submitting a copy of this report entitled *Archaeological Subsurface Inventory Survey, Sheraton-Maui Redevelopment Project* (Graves 1993) for our review and comments.

We have reviewed this report. It seems that the three areas which our office has specified for archaeological subsurface testing have been adequately tested. No evidence of historic sites was identified in the 15 backhoe trenches. Disturbed, interbedded deposits and modern trash indicate that the areas were extensively modified during hotel construction. We concur with this finding.

We also found the report to have adequately presented the results of the background research and to have a good discussion on the regional and *ahupua'a* settlement pattern. The fieldwork findings would have been adequate if not for the missing drawings of representative sections from the backhoe trenches. They are supposed to be included in this report, as stated on page 12, first paragraph. Photocopies of the original field drawings were submitted to our office in a separate envelope, but these should be incorporated in the report for this document to be adequate and complete. We contacted Mr. Alan Walker by telephone on April 30, 1993 and he agreed to send the profile drawings to be attached as an appendix.

In sum, we find this report acceptable, with the condition that the trench profile drawings be submitted to our office. If you have any questions about these comments, please contact Ms. Annie Griffin at 587-0013.

Sincerely,

for DON HIBBARD, Administrator
State Historic Preservation Division

c: Leslie Kurisaki, Helber Hastert & Fee

AG:111

Archaeological Subsurface Inventory Survey
Sheraton-Maui Redevelopment Project

Land of Hanakaoo, Lahaina District
Island of Maui

PHRI
Paul H. Rosendahl, Ph.D., Inc.
Archaeological • Historical • Cultural Resource Management Studies & Services
365 Mohouli Street • Hilo, Hawaii 96720 • (808) 969-1763 • FAX (808) 961-6998
P.O. Box 23305 • G.M.F., Guam 96921 • (671) 472-3117 • FAX (671) 472-3131

Report 1378-041993

Archaeological Subsurface Inventory Survey
Sheraton-Maui Redevelopment Project

Land of Hanakaoo, Lahaina District
Island of Maui

by

Donna K. Graves, M. A.
Projects Manager - Hawaii

Prepared for

Helber Hastert & Fee
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

April 1993

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SUMMARY

At the request of Ms. Leslie Kurisaki, of Helber Hastert & Fee, for their client, Sheraton-Maui, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological subsurface inventory survey within the Sheraton-Maui Redevelopment project area, located in the Land of Hanakaoo, Lahaina District, Island of Maui. The basic objective of the survey was to provide information appropriate to and sufficient for satisfaction of all current historic preservation regulatory review requirements of the Maui County Planning Department (MCPD) and the Department of Land and Natural Resources - State Historic Preservation Division (DLNR-SHPD).

The present survey was conducted April 7-9 1993, under the supervision of Hawaii Projects Manager Donna K. Graves, M.A. Assisting on the project were Field Archaeologists Mikele Fager, B.A. and Mike Stubing, B.A. Approximately 72 man-hours were required for the field work.

A total of 15 backhoe trenches were excavated in three specified areas, to test for possible subsurface cultural deposits. No prehistoric subsurface cultural deposits, burials, or human skeletal remains were identified within the project area.

In view of the negative findings for the current project it is concluded that construction and other activities associated with the redevelopment of the Sheraton-Maui will not affect archaeological or historic sites of significance, and no further treatment or consideration of archaeological resources is necessary.

CONTENTS

ILLUSTRATIONS

Figure

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INTRODUCTION

BACKGROUND

At the request of Ms. Leslie Kurisaki, of Helber Hastert & Fee, for their client, Sheraton-Maui, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological subsurface inventory survey within the Sheraton-Maui Redevelopment project area, located in the Land of Hanakaoo, Lahaina District, Island of Maui (Figure 1). The basic purpose of the survey was to provide information sufficient for satisfaction of all current historic preservation review requirements of the Maui County Planning Department (MCPD) and the Department of Land and Natural Resources - State Historic Preservation Division (DLNR-SHPD).

The present survey was conducted April 7-9 1993, under the supervision of Projects Manager Donna K. Graves, M. A. Assisting on the project were Field Archaeologists Mikele Fager, B.A., and Mike Stubing, B.A. Approximately 72 man-hours were required for the field work.

SCOPE OF WORK

The basic purpose of the inventory survey was to identify all sites and features of potential archaeological significance within the specified project area. An inventory survey is an initial level of archaeological investigation. It is extensive rather than intensive in scope, and is conducted with the primary aim of determining the presence or absence of archaeological resources. A survey of this type is used to determine the general nature and variety of archaeological remains present, and the general distribution and density of such remains. It permits a general significance assessment of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for any subsequent mitigation work that might be necessary. Mitigation could include further data collection involving detailed recording of sites and features, and limited excavations. Such work could also involve subsequent data recovery research excavations, construction monitoring, interpretive planning and development, and/or preservation of sites and features with significant scientific research potential, interpretive qualities, and/or cultural values.

In consideration of the above, the basic objectives of the present survey were fourfold: (a) to identify all sites and site complexes present within the project area; (b) to evaluate the potential general significance of all identified archaeological remains; (c) to determine the possible impacts of proposed development upon the identified remains; and (d) to define the general scope of any subsequent further data collection and/or other mitigation work that might be necessary or appropriate.

Based on a review of readily available background literature, basic familiarity with the general project area and extensive familiarity with the current requirements of review authorities, and based on discussions with Ms. Annie Griffen, DLNR-SHPD staff archaeologist for Maui County, the following specific tasks were determined to constitute an adequate scope of work for the survey:

1. Review archaeological and historical literature relevant to the project area, and conduct limited historical documentary research, with an emphasis on readily available literature and documentary sources;

2. Conduct subsurface testing by means of backhoe trenching (supplemented by hand excavations, if appropriate) in order (a) to determine the presence or absence of potentially significant subsurface cultural deposits and features (e.g., firepits), (b) to obtain suitable samples for age determination analyses, (c) to determine the presence/absence of human burials or human skeletal remains;

3. Perform appropriate analyses of field and background research data; and

4. Prepare Final Report.

No fewer than 15 backhoe trenches were to be excavated: three in Area 1, four in Area 2, and eight in Area 3. The Black Rock area in the western portion of the project area did not require subsurface testing (memos dated 24 March 1993 from L. Kurisaki to PHRI). There are no sand dune deposits in the area and the area will not be subjected to subsurface excavations during hotel construction work. The testing program was modified slightly in the field because of physical restrictions such as the locations of buried utility lines (identified by Sheraton-Maui staff), buildings, and landscaping (large trees and shrubs). Thus, three trenches were placed in Area 1, five trenches in Area 2, and seven trenches in Area three. Despite this minor deviation from the original scope, the project objectives were met. The trenches were to be placed c. 10.0 to 20.0 m apart. The trenches were to measure 5.0 m by c. 1.0 m, and were to be deep enough to permit the evaluation of the presence or absence of significant subsurface remains. Backhoe trenches were to be left open only long enough to record any pertinent archaeological data, and then they were to be backfilled.

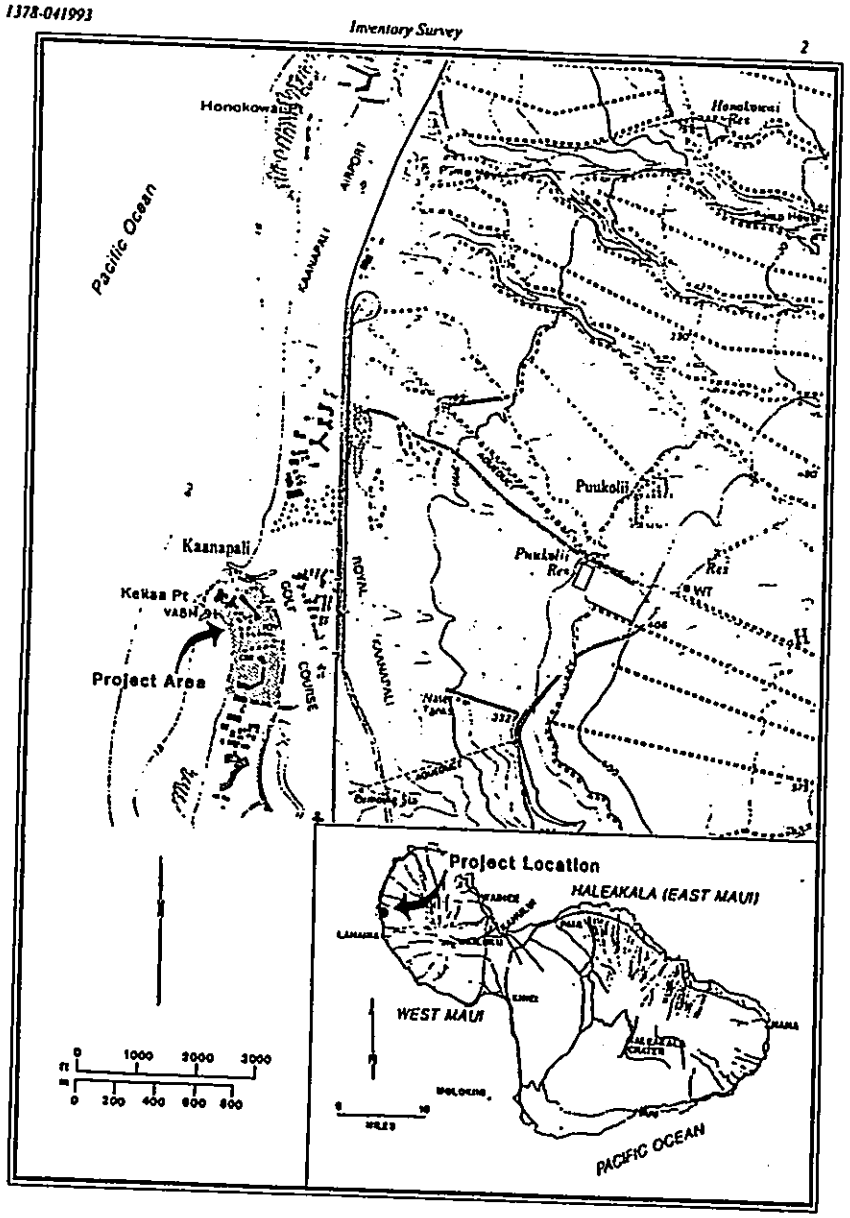

Figure 1. Project Area Location

The inventory survey was carried out in accordance with the standards for inventory-level survey recommended by DLNR-SHPD. The significance of all archaeological remains identified in the project area was to have been assessed in terms of (a) the National Register criteria contained in the Code of Federal Regulations (36 CFR Part 60), and (b) the criteria for evaluation of traditional cultural values prepared by the National Advisory Council on Historic Preservation. DLNR-SHPD uses these criteria to evaluate eligibility for both the Hawaii State Inventory of Historic Places (SIHP) and the National Register of Historic Places.

To assist the client with decisions regarding the subsequent treatment of archaeological resources, the general significance of the resources identified during the inventory survey was also to have been evaluated in terms of potential scientific research, interpretive, and cultural values. *Research* value refers to the potential of archaeological resources for producing information useful in the understanding of culture history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. *Interpretive* value refers to the potential of archaeological resources for public education and recreation. *Cultural* value, within the framework for significance evaluation used here, refers to the potential of archaeological resources for the preservation and promotion of cultural and ethnic identity and values.

PROJECT AREA DESCRIPTION

The Sheraton-Maui Hotel consists of a variety of high-rises, cottages, shops and open areas laid out along the beach front, just south of Kekaa Point, in the Kaanapali Resort complex. Three areas (1-3) have been identified for redevelopment, their locations are shown in Figure 2.

Vegetation in each of the areas comprises introduced ornamental species, landscaped to enhance the hotel grounds. Annual rainfall in the project area is estimated to be about 15-20 inches annually (Armstrong 1983:56). This water supply, combined with the deep rich soils, supported dense stands of native vegetation in prehistoric and early historic times. However, the extensive development of agriculture and resort complexes within the general area has resulted in removal of virtually all of this cover. Small pockets of relatively undisturbed terrain containing stands of native and introduced species comprise less than about 5% of lands within the general project vicinity. They are restricted to the steep-sided, non-arable gulches found *mauka* of the project area.

PREVIOUS ARCHAEOLOGICAL AND HISTORICAL RESEARCH

General Overview and Settlement Model

There has been a great deal of recent development on the island of Maui, and data from archaeological inquiries is only beginning to be synthesized and to make possible hypotheses concerning settlement patterns and land use. The present archaeological background section was prepared largely by Jensen and Mehalchick (1993:2-9), in conjunction with their work at the North Beach Mauka and Puukolii Village project areas. They focus on prehistoric and proto-historic patterns of settlement and land use within the Land of Hanakaoo, the current project area *ahupua'a*.

One point which should be emphasized concerning the documentary information is the fact that a high percentage of sites in the Lahaina District generally, and Hanakaoo and adjacent *ahupua'a* in particular, have been lost to early historic and continuing agricultural activities. One consequence of this is that no studies have been attempted, to date, in which an *ahupua'a*-wide settlement model has been developed on the basis of a zonal study involving sites from coastal through upland zones.

While some indirect information is available in the ethnographic and historic literature, it has not been possible, to date, to adequately test or evaluate this information on the basis of archaeological data. In short, due to the large scale destruction of sites in this area, it may never be possible to achieve a level of understanding for Hanakaoo comparable to that for other, less severely affected, areas on Maui and elsewhere within the Hawaiian archipelago.

These problems aside, early historic references describe the Lahaina District as a rich agricultural oasis irrigated by aqueducts descending from well-watered valleys. This oasis extended "...about three leagues in length [roughly nine miles along the coast] and one [three miles] in its greatest breadth. Beyond this all is dry and barren" (Handy and Handy 1972:493). Cultivated crops included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and a variety of melons and gourds. According to one informant who had lived to see the reign of four Kamehamehas, these crops supported a dense population, which was reflected by the fact that "a hut existed under every breadfruit tree" (ibid.).

By the time of initial contact with European populations, Maui had become an important center of political and social

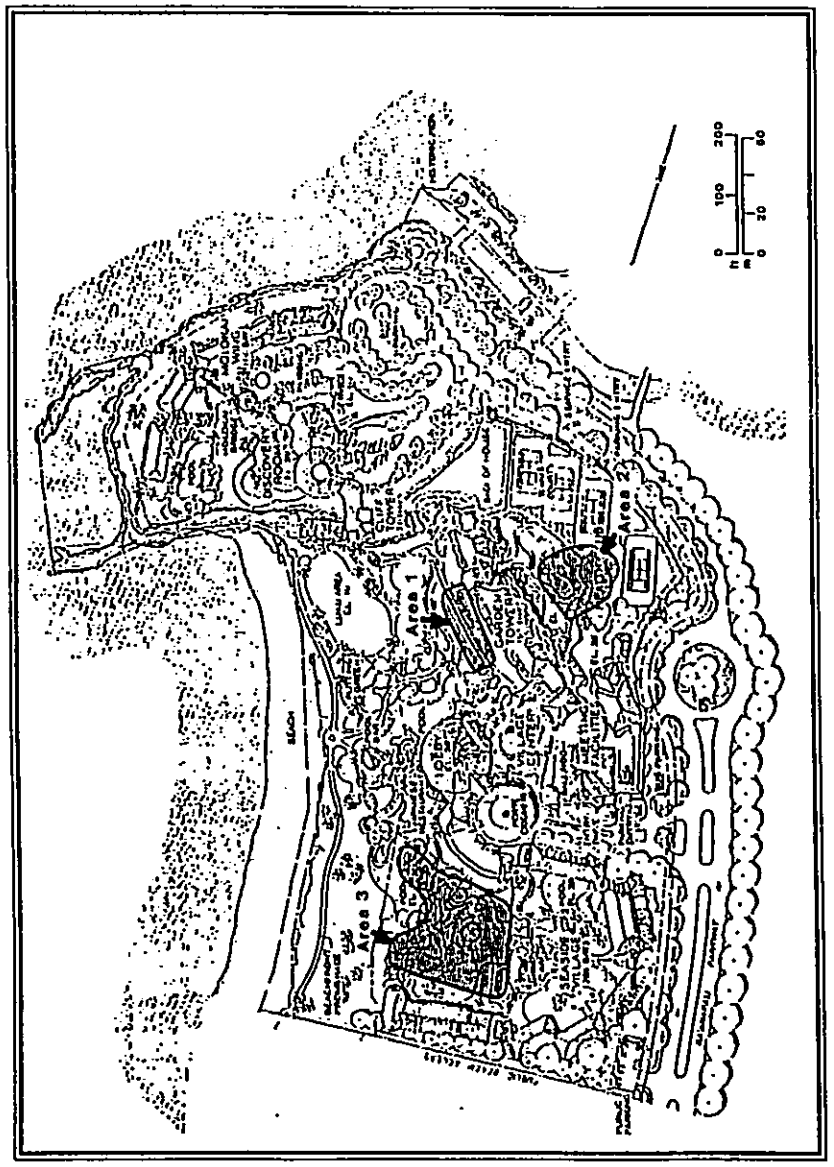

Figure 2. Redevelopment Areas 1-3

development, and had served as the residence of several powerful chiefs (Kirch 1985:134). One of the most notable of these was Kahekeli, the arch-enemy of Kamehameha. The Lahaina District in general was considered by high chiefs to be a favorable place, due to the abundance of natural resources, its proximity to the islands of Lanai and Molokai, and the equable climate (Handy and Handy 1972:492). In 1789, Kamehameha I invaded Maui and conquered the island at the Battle of Kepaniwai o Iao at Wailuku. By 1795 Kamehameha I was firmly established on Maui, and by 1802 had built a brick palace from which to administer the collection of taxes (Ashdown n.d.). Lahaina was the capital of the Hawaiian Kingdom from that time until 1850, when the capital was moved to Honolulu.

At contact, and just before, the chiefs appear to have acquired extensive control, through their overseers, over land and individuals living in the area. Although the construction of hundreds of agricultural terraces and miles of irrigation channels would have required a large labor force, and presumably centralized control, Earl (1980) has argued that this may not always have been the case, and that these systems could have been constructed and maintained by small social groups. Data recently acquired from Launiupoko, concerning the distribution of habitation-feature types within the upland zone south of Lahaina (Graves 1991) is inconclusive on this issue.

In any case, ethnohistoric and historic sources largely agree that east of Lahaina virtually all of the land between sea-level and c. 700 ft elevation was a nearly continuous band of agricultural and related habitation features. Initial development of this field system is likely to have begun early in the Kirch's (1985) Expansion Period (i.e., AD 1200-1400). The first features to be constructed may have served dryland farming, which may have been seasonal, with most of the activity occurring during the rainy winter months. Increasingly, however, water diversion and water-distribution projects were undertaken. These changes eventually culminated in the ethnographically documented pattern in which intensive, irrigation-based farming associated with nearly year-round habitation (at least in certain areas) replaced the less intensive dryland system.

A zonal distribution of habitation and agricultural sites that is generally similar to the pattern that has been documented in other leeward areas of the archipelago has not yet been documented archaeologically for the Lahaina District, although this may eventually be done. Such a zonal distribution would have begun to occur during the early Expansion Period (Kirch 1985), when sites would have been differentially distributed in three broad zones paralleling the coast, with the highest density of habitation sites occurring along the coast and in the well-watered uplands. Also characteristic of such distribution is an intermediate zone, relatively devoid of sites. Within the Lahaina District generally and Hanakaoo in particular, however, the middle zone may not only have been compressed in terms of its width, but may have also merged more quickly with the upper zone. The reason for this is that the productive zone between the coastline and the West Maui Mountains at Lahaina is relatively narrow. Consequently, water redistribution systems might be expected to have rapidly and effectively erased distinctions between these areas, which were initially created by differences in natural water availability.

Concomitantly with these postulated changes in land use, one would expect additional changes in patterns of site composition and feature distribution. These changes would have accompanied evolution in Hawaiian social structure and organization, which evolved from a lineage-based system to a highly stratified system of ranked classes linked by land units and residence, e.g., the *ahupua'a* pattern. This general model describing mid- to late-prehistoric through Proto-historic changes in land use, social structure and political organization has already been documented at Palauea (Kirch 1971, IN Kirch 1985:141) and Kahikinui, in leeward East Maui (Chapman and Kirch 1979, IN Kirch 1985:138), and elsewhere in the archipelago (cf., Cordy 1981).

Occupation and use of the project vicinity before the Expansion Period (Kirch 1985) is poorly documented. While the first Polynesian occupation of Maui may have been characterized by small, permanent, nucleated communities situated in favorable areas such as windward valleys, some minimal level of early prehistoric use of other environments obviously occurred. The interdependent elements suspected in the transformation of early Hawaiian culture into the complex system observed at the time of European contact include population increase, increasing efficiency in the technology and social organization of production, and the increasing consumption by competing elements of Hawaiian society and culture. Early in the Expansion Period (Kirch 1985), one of the archipelago-wide responses to the changing socio-cultural-environmental equation included a deliberate expansion of population and exploitative activities into regions that previously had been only minimally utilized, primarily upland and leeward coastal environments, as at Lahaina.

Specific Archaeological Findings Supporting Settlement Model

Archaeological survey work began relatively early on Maui. Some of this early work, as much of the subsequent research, has contributed directly to the general settlement and land-use model outlined above.

Winslow Walker's Bishop Museum study involved a partial assessment and inventory of larger sites and *heiau* around the island. Along the shoreline, a short distance south of Lahaina, Walker references information from Thrum concerning several *heiau* remnants (Walker's Sites 7, 8, 9, and 10). However, all of these features had been completely, or nearly completely destroyed by the time that Walker conducted his own survey field work (n.d.). Walker also identified a *heiau* (Walker's Site 11) at Lahaina, north of Mala Wharf, which he described as a "large heiau for human sacrifice..." However, by 1930 only a "...few fragments of walls remain[ed]." Walker identified no additional sites, either along the coast or inland several miles north of Lahaina. Walker does not even mention the existence of the Alaloa ("Long Road") through the present project area. Although major segments of this 16th century alignment remain intact elsewhere, according to Handy and Handy (1972:490-491):

> "...it was formerly clearly visible across the West Maui golf links, but was obliterated in the Lahaina area and beyond by the cultivation of cane and pineapple."

Some productive research was undertaken in East Maui during the 1960s (Sochren 1963, Pearson 1970), and Chapman's intensive survey and excavation work in Kahikinui, referenced above, contained island-wide implications for prehistoric patterns of settlement and land use (Chapman and Kirch 1979).

During the succeeding decade, and through the 1980s, West Maui began to receive more attention, as urbanization and resort development led to greater numbers of intensive, contracted survey and excavation projects. Proposed flood-control improvements for Kahoma Stream, which is c. two miles south of the project area, was conducted on the south side of the stream during the 1970s (Connolly 1974, Hommon 1973, Ahlo and Morgenstein 1980). Development of the nearby Mala Wharf Boat Launch Ramp at Lahaina likewise was accompanied by several archaeological studies, including those by Sinoto (1975), Davis (1974), and Hammatt (1978). The latter projects identified numerous human burials, principally historic, in the sand berm inland of the Mala Wharf. Also identified, south of Kahoma Stream, was a historic earth oven, or imu, and a ditch which Hammatt (1978) believed may have connected the well-documented Alamihi Fishpond to Kahoma Stream to the north (cf. Joerger and Kaschko 1979).

Additional subsurface reconnaissance surveys were undertaken by PHRI within the immediate vicinity of Alamihi Fishpond and Mala Wharf. One of these projects (Haun 1988:16) was undertaken in January of 1988 and involved excavation of 19 backhoe trenches, recording of stratigraphic information, and evaluating subsurface soil components for the presence of cultural materials and features. The program yielded a total of 33 glass bottles, 24 of which were dated to the period just prior to and immediately following the turn of the century (Haun 1988:16). In addition, volcanic glass and radiocarbon age determinations indicated prehistoric use and occupation of the area between AD 1260 and 1640 (Haun 1988:17).

Further inland at Lahaina, additional cultural resources have recently been relocated along Kahoma Stream. Originally recorded in April of 1974, SIHP Site 1203, known as the Kahoma Complex and consisting of 38 petroglyphs and a rockshelter, was relocated by Barrera, in conjunction with his documentary research and field survey of Alternative C of the proposed Honoapiilani Highway realignment between Lahaina and Honokawai (Barrera 1989:9). In reexamining this previously recorded site, Barrera also discovered additional agricultural features, including at least three terraces and a possible irrigation ditch on the alluvial floodplain on the south side of Kahoma Stream. On the basis of his conclusion that the site probably retained significant information value, Barrera recommended that project effects be further evaluated in the event that the road is to be constructed through or close to these features. Following submission of Barrera's report, the State Historic Preservation Officer concluded that basic identification and evaluation of the resource had not been adequately completed, and additional recording and evaluative work was undertaken in 1991 (Jensen 1991). Jensen concurred with Barrera's original evaluation, recommending data recovery if the site was to be affected.

As part of the same 1991 re-inspection of the Alternative C Road Corridor, first surveyed by Barrera, PHRI conducted an archaeological inventory survey of the 1,200-acre HFDC project area (Jensen 1991). During this survey, 12 sites containing 44 component features were identified. Of these 12 sites, one (the Kahoma Complex, discussed above) had been previously identified and partially recorded (SIHP Site 1203), and the remaining 11 sites were newly identified. Ranging in physical condition from poor to excellent, the identified sites included both single and multiple components

and displayed a range of feature types comprising overhangs/caves, platforms, walled enclosures, petroglyphs, graves, agricultural terraces, and a single historic agricultural access road alignment. Tentatively identified functional types included habitation, agriculture (both prehistoric as well as historic), ceremonial/religious, probable burial, recreation, and some sites of indeterminate function. Although limited to undisturbed gulch lands, these findings support the information from historic sources that the lands above Lahaina and Kaanapali were extensively utilized during prehistoric and early historic times.

South and inland of Lahaina, at Wainee Village townsite, Hommon (1982) surveyed several hundred acres in the early 1980s. No intact cultural resources were encountered during the project. More recently, southeast of Wainee Village, PHRI completed archaeological inventory survey work in conjunction with the proposed Launiupoko Golf Course (Graves 1991). During the aerial and pedestrian survey of the 440-acre Launiupoko project area, 47 sites containing 70+ component features were identified. The features included terraces, clearing piles, agricultural plots, rock piles, canals, retaining walls, flumes, a flaked boulder, alignments, rock shelters, C-shapes, walls, uprights, L-shapes, petroglyph panels, coral items, fences, cairns, and roads. Functional types represented included agriculture, animal husbandry, habitation, temporary habitation, and markers. The findings at Launiupoko also confirm that the ethnographically and historically documented pattern of land use and settlement existed within this area south of Lahaina, and that in areas less heavily affected by agriculture, numerous archaeological sites, containing a wide range of formal and functional feature types, are likely to be present. In general, the Launiupoko inventory survey data document that agricultural features are the most common functional type in this area and that they occur in very high density. This area ranges in elevation from 380 to 800 ft above sea level, higher than the present project area.

East of the present project area, a large block of land was subjected to inventory survey with strikingly different results than those at Launiupoko. During his initial survey of the North Beach Mauka and South Beach Mauka project areas (involving c. 240 acres), Hommon (1982) identified only three sites, including a single agricultural complex and two short wall-segments. A subsequent re-survey of portions of these same lands failed to identify more-significant resources or a higher density of them, than previously identified along the gulches in this area (Jensen 1989).

Additional work in the same area was conducted by Jensen and Mehalchick (1992, 1993), who identified seven new sites, including two historic sites associated with the Pioneer Mill electrical generating facility, four agricultural terraces, and a small overhang containing human skeletal remains.

Hommon's findings in the North and South Beach Project area, and the subsequent re-evaluation of the parcels (Jensen 1989), clearly highlighted the extensive surface disturbance to which much of West Maui has been subjected by both resort development and historic and contemporary agriculture.

Despite the disturbance to sites in leeward West Maui generally, monitoring of construction work along the beachfront at the site of the Kaanapali Alii Condominiums did confirm the presence of prehistoric burials (Dobyns and Allen-Wheeler 1982), a discovery which later resulted in recommendations of monitoring for other such coastal development areas. In addition to this work, the Archaeological Research Center of Hawaii undertook intensive survey of several hundred acres in conjunction with the proposed realignment of the Honoapiilani Highway corridor through Kaanapali, between Honokawai and Alaeloa Ahupua'a (Griffin and Lovelace 1977). During this survey only four sites were encountered, two walls, a trail, and a small midden deposit. The latter feature was further evaluated and eventually yielded radiocarbon dates confirming occupation for several centuries prior to western contact.

Besides the work by Dobyns and Allen-Wheeler, and by Griffin and Lovelace, additional studies have been undertaken north of Lahaina and north of the present project area. During the early 1970s, Kirch documented intermittent marine exploitation at several small sites at Hawea Point, for the period post-dating c. AD 1500 (Kirch 1973b). Over a decade later, PHRI conducted a surface reconnaissance survey of the Sheraton-Maui Master Plan Site, in the Lands of Honokawai and Hanakaoo, a short distance northwest of the present project area. The archaeological team discovered that virtually all of the project area was fully developed, containing hotels, parking lots, driveways, and landscaping. The only unaltered portions of the project area were the barren coastal flats and the exposed faces of the old cinder cone at the point. No surface cultural material was encountered during the examination of these areas, and conditional archaeological clearance was recommended (M.L.K. Rosendahl, 1986).

In 1986, Barrera (1986) conducted an additional archaeological reconnaissance survey of the North Beach project area, in conjunction with newly proposed developments at Kaanapali. No surface structures were identified during the survey, which (in view of the previous findings by Dobyns and Allen-Wheeler [1982]) concluded with a recom-

mendation for subsurface reconnaissance of the sand dune area (Barrera 1986:3-4). The recommended dune reconnaissance (subsurface coring) was undertaken the succeeding year by PHRI (Rosendahl 1987), but failed to reveal any subsurface prehistoric cultural deposits or human skeletal remains. Although fragments of glass and metal were present in approximately 20% of the cores, most of the pieces were recovered from upper strata and were recent. The generally negative findings were interpreted as evidence that there had been little to no prehistoric use of the area, or that such evidence was simply no longer present.

Still further north, a proposal by the U.S. Department of Agriculture-Soil Conservation Service to establish a desilting basin at Kahana was accompanied by a program of subsurface archaeological reconnaissance (Walker and Rosendahl 1985). The program was undertaken in order to evaluate possible subsurface accumulations of cultural material at several previously recorded prehistoric sites (Kaschko 1974). Detailed recording and test excavations had already been undertaken at several of these sites by the Bishop Museum (Komori 1983), whose findings suggested the possibility that additional significant cultural material may remain buried within the vicinity, and that this material reflected historic cattle ranching in the area. The PHRI evaluation suggested, on the other hand, that the project area sites represent an inland portion of the agricultural component of the traditional Hawaiian land use system, with historic period re-use of the area following initial displacement of native Hawaiians (which accompanied the introduction of commercial sugar cane and pineapple cultivation) (Walker and Rosendahl 1985:22).

Finally, significant cultural deposits have been located at the proposed Kapalua Hotel Development Site, in the Land of Honokahua, Lahaina District. Situated at Honokahua Bay, evidence of prehistoric burials within the project area was first noted and recorded by Kirch in 1973 during a reconnaissance survey for Kapalua Resort (Kirch 1973a). The burial site was subsequently listed with five other prehistoric sites within the Honokahua Archaeological District (SIHP Site 1342). In early 1986, vegetation grubbing associated with initial clearing for access roads required for engineering studies exposed five areas of disturbed skeletal material. Subsurface survey conducted in the spring of 1986 documented intensive use of the area as a cemetery, as well as previously unrecorded cultural features (including buried midden) within the project area (Donham 1986). Following additional surface and subsurface evaluations, mitigation data recovery field work was initiated in March of 1987 and continued more or less uninterrupted through late December of 1988. Interim reports (Donham 1989) document a complex, multi-component burial site with initial use as early as AD 600 (Donham 1989).

Specific Findings of Historical Documentary Research Supporting Settlement Model

As noted above, a considerable number of ethnohistoric and historic sources describe native Hawaiian and early historic uses of, and activities in, the Lahaina area. A comprehensive review of this information, including Hawaiian myths and legends, place names, Land Commission Awards, map references, and other information, is contained in a recently completed overview (cf. Smith 1989). For present purposes, information relevant to the general model of settlement and land use outlined above consists of selected historical references.

There is no question that Lahaina was an important area in the past. Many of the early accounts document the high density of population in the area, as well as the extent to which all of the region around Lahaina had been developed for agricultural use.

One of the earliest accounts of Lahaina is given by Archibald Menzies, a surgeon with Captain Vancouver in 1793, who trekked through the forests about three miles inland of the Lahaina shore:

> Here our conductors importuned us to dine, and a pig being killed and got ready, together with yams and sweet potatoes, we partook of a hearty meal, after which we continued our journey, and soon entered the verge of the woods where we observed the rugged banks 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. We could not indeed but admire the laudable ingenuity of these people in cultivating their soil with so much economy. The indefatigable labor in making these little fields in so rugged a situation, the care and industry with which they were transplanted, watered and kept in order, surpassed anything of the kind we had ever seen before. It showed in a conspicuous manner the ingenuity of the inhabitants in modifying their husbandry to different situations of soil and exposure, and it was with no small degree of pleasure we here beheld their labor rewarded with productive crops.
>
> March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with the two Niihau women, to see the village of Lahaina, which we found scattered along shore on a low tract

> of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regular 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 greater part of the plantation.
>
> These little fields were transplanted in a variety of forms, some in rows, in squares, in clumps and others at random; some according to their nature were kept covered with water, while others were with equal care kept dry by gathering earth around them in little hills. In short, the whole plantation was cultivated with such studious care and artful industry as to occupy our minds and attention with a constant gaze of admiration during a long walk through it, in which we were accompanied by a numerous group of natives that continued very orderly and peaceful the whole time (Menzies 1920:105-112).

Thirty years later, in 1823, Reverend William Ellis visited Lahaina and wrote:

> At day-break, on the 4th, we found ourselves within about four miles of Lahaina, which is the principal district in Maui, on account of its being the general residence of the chiefs, and the common resort of ships that touch at the island for refreshments. A dead calm prevailed, but by means of two large sweeps or oars, each worked by four men, we reached the roads, and anchored at 6 a.m.
>
> The level land of the whole district, for about three miles, is one continued garden, laid out in beds of taro, potatoes, yams, sugar-cane, or cloth plants. The lowly cottage of the farmer is seen peeping through the leaves of the luxuriant plantain and banana tree, and in every direction white columns of smoke ascend, curling up among the wide-spreading branches of the bread-fruit tree.
>
> The sloping hills immediately behind, and the lofty mountains in the interior, clothed with verdure to their very summits, intersected by deep and dark ravines, frequently enlivened by glittering waterfalls, or divided by winding valleys, terminate the delightful prospect. (Ellis 1963:42)

Handy and Handy (1972) present an account by Arago, who also visited Lahaina in 1823:

> 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; little pathways sufficiently raised, and kept in excellent condition, serve as communications between the different estates. These are frequently divided by trenches, through which a fresh and limpid stream flows tranquilly, giving life to the plantations, the sole riches of the country. Hollow squares of the depth of two, three, and sometimes four feet, nourish 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, intercept the rays of the sun, and allow you to walk at mid-day. Every cabin has its enclosure, and every enclosure is well taken care of; it seems to suffice for the wants of the family. Here the father turns the ground with his long staff of red or sandal wood; there, the son clears the soil of weeds, and prepares; farther off the mother is seated at the door of her hut, and weaves the stuff with which she clothes herself; whilst her youthful daughter, unencumbered with drapery, is seated by her side, and tempts you by her unsophisticated caresses.

In the following passage, Handy and Handy describe the agricultural practices in this area of Maui, noting the abundant streams that made the cultivation of this hot, dry terrain possible.

> West Maui had two main centers of population concentrated in areas where the abundant streams from the deeply eroded central dome brought water to large lo'i systems.
>
> Lahaina's main taro lands, on the lower slopes, running up to the west side of Pu'u Kukui, were watered by two large streams, Kanaha and Kahoma, which run far back into deep valleys whose sides were too precipitous for terracing (ibid:492).
>
> The space cultivated by the natives of Lahaina is about three leagues in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation (Arago IN Handy and Handy 1972:493).

According to legend, Keka'a, the area north of Lahaina, where Black Rock is located (and the current project), was once intensively cultivated (ibid:494). This would imply that cultivation was continuous along this northwest coastal region of Maui, as reported by Fornander (cited IN Handy and Handy 1972:494):

> Kekaa was the capital of Maui when Kakaalaneo was reigning over West Maui...Many houses were constructed and people cultivated a great deal of potatoes, bananas, sugar cane, and things of a like nature. I have been told that the country from Kekaa to Hahakea and Wahikuli — that country now covered by cactus, in a northwesterly direction from Lahaina — was all cultivated...

According to Maly (Appendix A), Black Rock was believed to have supernatural qualities, being a place where the souls of the dead leaped into the next world. Local informants also recall a cemetery located near Keka'a point, according to Maly's research.

By the late 1800s most of Lahaina's residents, including the missionaries, who had arrived around 1823, and the whalers, whose presence peaked between about 1840 and 1860, had left for other areas of Hawaii. During this period, Lahaina became the focus of early sugar cane production and processing enterprises. In 1849, Judge A.W. Parsons operated a sugar mill at Lahaina. This mill, along with 1,000 acres of land, was sold to O.H. Gulick at auction. Henry Dickenson, a Lahaina store owner, began a plantation in 1859, and the success of his Lahaina Sugar Co. encouraged the establishment of a second plantation the following year, Pioneer Mill Co. It was founded by three partners: James Campbell, Henry Turton, and James Dunbar, on lands deeded to them by Benjamin Pittman. In 1863, Lahaina Sugar Co. went bankrupt and sold out to Pioneer Mill Co. (Conde 1973:252). Another plantation, formed in 1870 by Lot Kamehameha and others, was also bought out by Pioneer Mill Co. a few years later.

The firm of Walker & Allen appears to have been the plantation agent in the early years, but in 1877 H. Hackfeld replaced them (Conde 1973:252). An 1883 evaluation of plantations represented by H. Hackfeld lists Pioneer Mill Co. assets at $500,000 (Simpich 1974).

From its modest beginnings in 1862, Pioneer Mill eventually became the largest sugar plantation in West Maui. In 1882 the Mill began construction of a narrow gauge railroad to haul cane to the processing plant. Several lines were constructed, including one that originated at the operations site, above Lahaina, and proceeded northward toward Kaanapali and Keka'a landing (just north of the current project). According to Clark (1989:61):

> A landing was built on the north side of Black Rock [Pu'u Keka'a] to ship out the sugar that was bagged and processed at the mill in Lahaina and hauled to the landing by train...The bagged sugar was stored in a warehouse to the rear of Black Rock. When the sugar boats called, the bags were run out to the end of the landing on flatcars...Other buildings in the area included oil and molasses tanks and, on the beach, a pavillion and beach cottages reserved for use of Pioneer Mill Company's Supervisors.

Sheraton-Maui employees who grew up in the area also recall a lumber yard, and a cattle holding pen on the site of the present hotel. The landing at Black Rock was abandoned just prior to World War I, according to Maly (Appendix A).

In 1895, when the company was finally incorporated, Pioneer Mill began a period of rapid expansion and growth. During this same decade Henry P. Baldwin established Honolua Ranch. Interested in using his extensive West Maui lands for pineapple, Baldwin brought David T. Fleming to Honolua as the ranch manager. Fleming had been with the original Maui pineapple pioneers at Ha'iku and, within a few years, established pineapple as a commercial crop in West Maui. Baldwin Packers opened a cannery in Lahaina in December 1919, which provided employment for many local residents.

Extensive field clearing and road construction was undertaken in conjunction with these sugar cane and pineapple plantation operations, beginning with the initial small operations around the middle of the 19th century, and continuing, with increasing mechanization and efficiency, through the first two or three decades of the 20th century. This may be responsible for the destruction of perhaps 75% of all cultural features that once existed in the Lahaina area.

Sugar cane and pineapple sustained Lahaina economically until the sugar industry began mechanizing its field labor. The cannery at Lahaina finally closed in the early 1960s, forcing many residents to leave the town and the surrounding villages for other parts of Hawaii. During this same period, however, American Factors, the owner of Pioneer Mill Co., had begun developing an 800-acre site as a resort complex called Kaanapali. By early 1963, two hotels, the Royal Lahaina and the Sheraton-Maui, were in operation. This development marked the beginning of a new period of expansion and commercial growth for Lahaina, which peaked during the 1970s. Some additional impacts to intact cultural resources accompanied these developments, particularly the first Kaanapali construction work, during the early and mid-1960s. Increasingly during the 1970s, however, new environmental laws required that archaeological properties be subjected to pre-impact evaluation and mitigation work.

IMPLICATIONS OF PREVIOUS FINDINGS FOR THE PRESENT PROJECT

The model of prehistoric settlement and land use generated from previous archaeological research and historical documents suggests that a high density of significant archaeological sites, of great variety, once existed within leeward West Maui, in general, and the project area, in particular. At the time of Western contact, it seems likely that virtually all of the land east of Lahaina, between sea level and c. 600 to 700 ft elevation, contained a nearly continuous band of agricultural features and related habitation features. Initial development of this field system is likely to have begun early in the Expansion Period (Kirch 1985) (i.e., AD 1200-1400) in support of seasonal dryland farming. Increasingly, however, water diversion and water distribution projects were undertaken in certain areas, eventually culminating in the ethnographically documented pattern of intensive, irrigation-based farming associated with nearly year-round habitation.

A zonal distribution of habitation and agricultural sites may have emerged during initial development of the system, and might be detectable archaeologically, given sufficient levels of site preservation. The zonal concept suggests that archaeological sites may at one time have been differentially distributed in three broad zones paralleling the coast and conditioned by differences in available moisture. The highest density of habitation sites would most likely have first appeared along the coast, then in the well-watered uplands, and finally within an "intermediate zone," in direct response to the development of water redistribution systems. The construction of such systems would eventually have erased distinctions among these areas as irrigation eventually made it possible to intensively cultivate nearly all of the land between the coastline and the base of the West Maui mountains.

Along with these postulated changes in land use, the model predicts changes in patterns of site composition and feature distribution in and around the project area. These changes, in turn, would have been accompanied by the emergence of a highly stratified class system in which social distinctions and allegiances were no longer based primarily on ties of consanguinity, but rather by ties to particular land units and places of shared residence. This was the *ahupua'a* pattern.

Expected corresponding changes in site composition would have included an increase in the number of permanently occupied features, and an increase in the range and density of feature types present with site clusters, within upland zones.

Pre-Expansion Period (Kirch 1985) occupation and use of the project vicinity remains poorly documented at present, although initial use of coastal environments by small populations, followed shortly by sporadic, special-purpose occupation within upper elevation zones, is most likely to have characterized the period between about AD 800-1200. In this context, small, temporarily occupied feature clusters (i.e., sites) would be expected to be composed primarily of simple surface habitation features, caves, and rockshelters.

For the present project area, there is virtually no direct corroboration of this model, based on specific archaeological sites located within or immediately adjacent to the project area. However, legendary references and historic accounts indicate the potential for human burials and/or cultural deposits in undisturbed sand areas near Keka'a Point.

FIELD METHODS AND PROCEDURES

Backhoe trenches (BTs) were placed in each of the redevelopment areas (Areas 1-3); they were placed at intervals designed to ensure representative samples. The number and placement of the BTs varied slightly from those in the original scope of work, due to physical restrictions within the project area. The excavation of each trench was carefully monitored and the backdirt pile was frequently checked for any sort of cultural materials. Excavation was terminated either after groundwater was encountered, or a visual inspection of the trench indicated only sterile layers. Maximum depths of all trenches were recorded on profiles.

Scaled section drawings of representative sidewalls were completed for all BTs except BT-8, which was extremely unstable, even at shallow depths, and repeatedly collapsed during excavation. It was considered unsafe to enter the trench, thus it was examined from the surface. Because it appeared almost identical to BTs 4-7, the profiles and stratigraphic information obtained from those trenches is considered adequate. Stratigraphic information was recorded for each significant layer in all trenches (except BT-8) using standard Soil Conservation Service guidelines (Soil Survey Staff 1962) and a Munsell Color Notation Chart.

FINDINGS

Subsurface testing within the three designated areas (Areas 1-3) consisted of the excavation of 15 backhoe trenches. A summary of backhoe trenching results is presented in Table 1, which provides trench number, maximum depth, number of soil layers identified, and comments regarding the individual trenches. Detailed stratigraphic information for each trench is presented in Appendix B. Field drawings of a representative section of each trench are included with this report.

Each of the 15 backhoe trenches was 5.0 meters in length, and c. 0.75 meters wide (bucket width). Stratigraphic deposits within the trenches varied from as few as five layers, to as many as nine layers. Depths varied from 1.71 to 2.90 meters.

Area 1

Three trenches were placed in Area 1 (Figure 4). Generally, all three of the trenches displayed a mixed stratigraphy of alternating sand, loamy sand, and sandy clay, with a great deal of the mottling and interbedding typical of disturbed deposits. The deposits in each of the trenches appeared to be introduced fill, based on stratigraphy, and the presence of modern trash (i.e. glass and metal fragments) encountered in Layer V of Trenches 2 and 3. A subsurface charcoal lens encountered in Trench 1, at 112 cm, may be related to areas of rootburn identified elsewhere in the trench. The charcoal lens was not associated with cultural materials, and was in introduced fill. The water table was encountered at 2.90 m in BT-2, apparently almost directly under the introduced fill. No intact soil deposits were noted in Area 1, nor were any prehistoric materials encountered.

Area 2

Five backhoe trenches were placed in Area 2 (Figure 5). Generally, all five of the trenches displayed a mixed stratigraphy of alternating loamy sand, clay, and sand; and again, all displayed a great deal of the mottling and interbedding typical of disturbed deposits. Layer VI in Trench 6 was compact and may have been an older surface at one time, although there was possibly introduced fill below it. The water table was encountered at c. 2.20 m. in Area 2. No intact soil deposits were noted in Area 2, nor were any prehistoric materials encountered.

Area 3

A total of seven backhoe trenches were placed in Area 3 (Figure 6). The layout of utility lines, buildings, and landscaping prohibited the placement of more trenches in this area. Generally, Layers I-III, and IV appeared to be introduced fill in each of the trenches. Layers V, VI (c. 90 cmbs) may have been intact deposits due to the presence of a thick layer of tan beach sand with little or no mottling or interbedding. All layers within each of the trenches were culturally sterile.

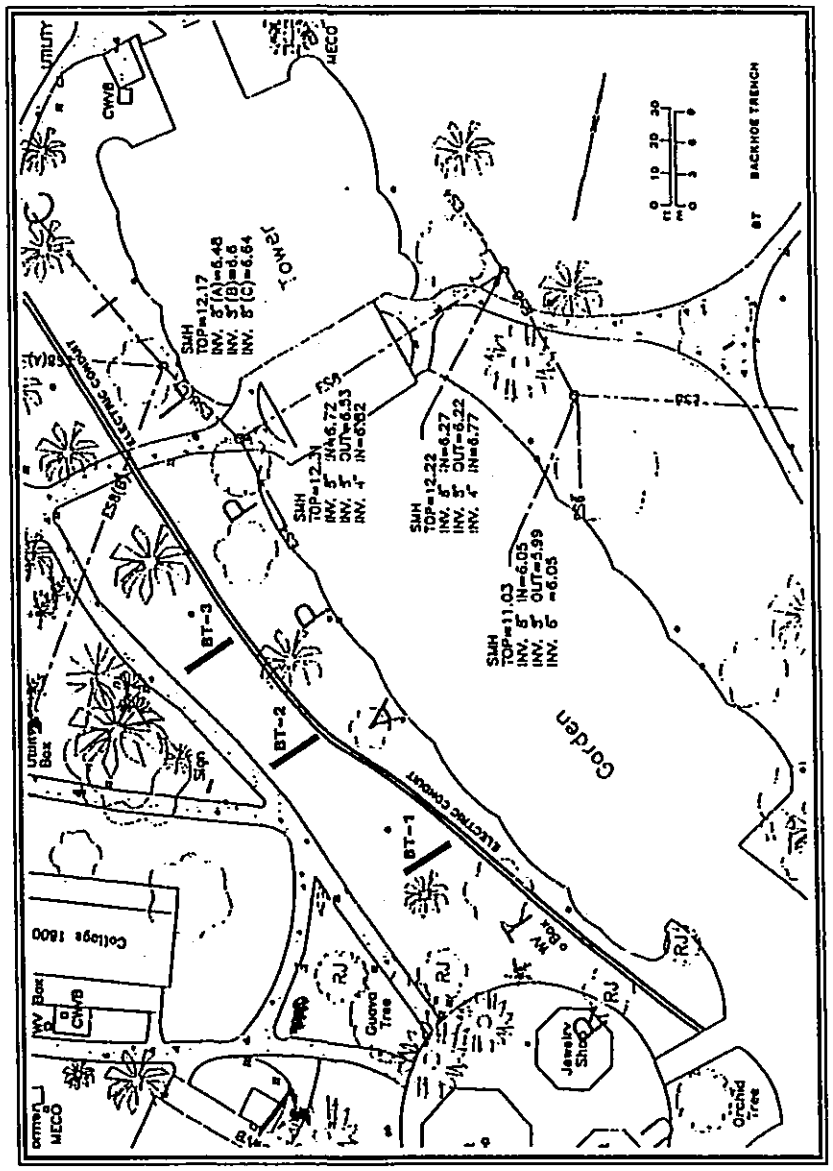

Figure 3. Area 1 Backhoe Trench Locations

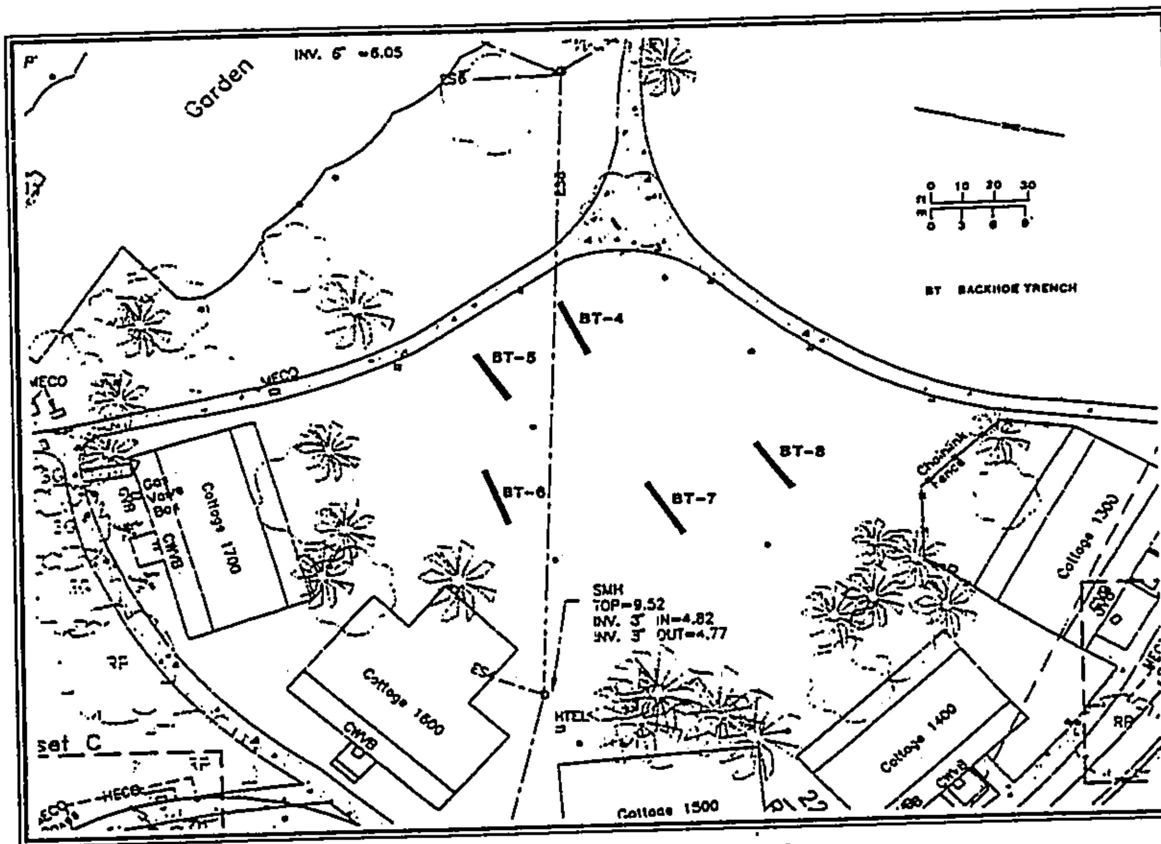

Figure 4. Area 2 Backhoe Trench Locations

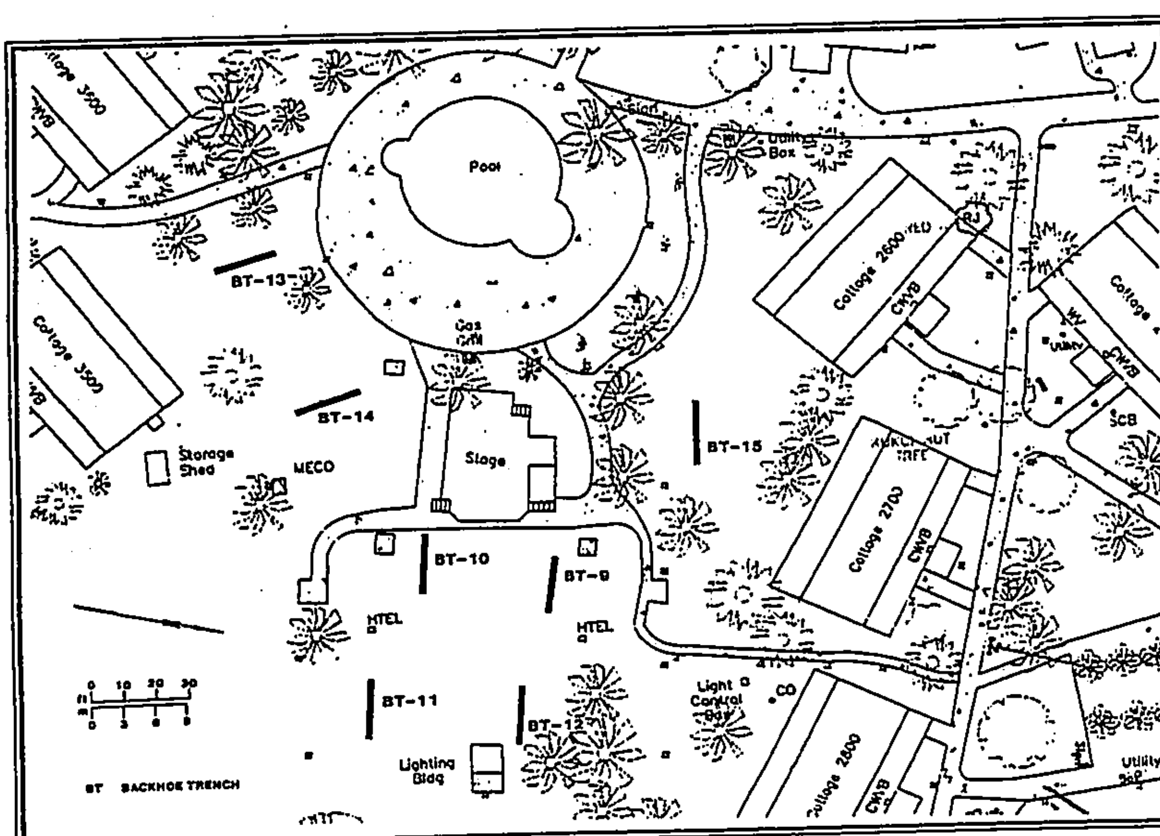

Figure 5. Area 3 Backhoe Trench Locations

Table 1.

BACKHOE TRENCH SUMMARY

BT-	Area	Max. Depth cmbs	Layers	Comments
1	1	200	I - IV	SF-1 in Layer IV (non-cultural)
2	1	290	I - V	Recent historic artifacts in Layer V; water table at 290 cmbs
3	1	180	I - VII	Modern glass fragment in Layer VII
4	2	236	I - IX	Sterile; water table encountered at 233 cmbs.
5	2	230	I - IX	Sterile; water table at 230 cmbs
6	2	234	I - IX	Layer IX possibly intact sand; water table at 234 cmbs
7	2	221	I - VI	Sterile; water table at 221 cmbs
8	2	220	I - VI	Sterile; water table at 220 cmbs
9	3	192	I - VI	Sterile
10	3	194	I - V	Sterile
11	3	181	I - VI	Layer VI possibly intact sand
12	3	119	I - III	Layer III possibly intact sand
13	3	180	I - IV	Layer IV possibly intact sand
14	3	171	I - V	Sterile
15	3	200	I - IV	Sterile

Note: All layers appeared to be introduced fill unless otherwise noted.

CONCLUSION

Although historic documentation indicated the possible presence of human remains in the project area, no such remains were identified during subsurface testing. And while the Keka'a area has been described as densely populated during the proto-historic period, no prehistoric cultural deposits were noted. In fact very few, if any, soil deposits in the redevelopment areas are intact; most of them are fill.

Previous research has also identified Keka'a as an important historic site, associated with the development of the Pioneer Mill. However, no intact historic deposits were located in the specified project areas. These findings may be attributed to the amount of disturbance that had already occurred in the area.

Each of the areas tested during the current work provided evidence for extensive modern disturbance, probably associated with construction of the hotel in the late 1960's. While a few modern materials such as glass and metal were associated with the lower layers of Area 1, they appear to be typical of discards (i.e. fragmented, burned) rather than representative of an intact historic deposit. No prehistoric cultural materials or significant historic materials were located in any of the areas. In addition, the backhoe trenching did not result in the identification of human burials or any human skeletal remains.

In view of the negative findings for the current project it is concluded that construction and other activities associated with the redevelopment of the Sheraton-Maui will not affect archaeological or historic sites of significance, and no further treatment or consideration of archaeological resources is necessary. None of the areas (1-3) are slated for excavation during the proposed redevelopment (pers. comm., John Robinson, Chief Engineer, Sheraton-Maui). Thus the likelihood of encountering significant cultural deposits in unsampled areas during construction is low.

The above recommendations are based on the findings of a subsurface inventory survey using backhoe trenches to sample specified areas. Thus, there is always the possibility, however remote, that potentially significant unidentified cultural remains might be encountered in the course of future development activities. In such a situation, archaeological consultation should be sought immediately.

REFERENCES CITED

ACHP (Advisory Council on Historic Preservation)

1985 Guidelines for Consideration of Traditional Cultural Values in Historic Preservation Review. Advisory Council on Historic Preservation, Washington, D.C. (Draft report, August)

Ahlo, H.M., and M.E. Morgenstein

1980 Archaeological Test Excavations Near the Mouth Area of Kahoma Stream, Lahaina, Maui. Hawaii Marine Research, Inc. (Honolulu). Prepared for Corps of Engineers, Pacific Ocean Division, Department of the Army. Fort Shafter, Hawaii.

Armstrong, R.W. (ed.)

1983 *Atlas of Hawaii*. Honolulu: University of Hawaii Press. (Second edition)

Ashdown, I.

n.d. Personal Notes on file at the Maui Historical Society Library, Wailuku.

Barrera, W., Jr.

1986 North Beach, Maui: Archaeological Reconnaissance. Chiniago, Inc. Prepared for Helber, Hastert, Van Horn & Kimura.

1989 Honoapiilani Highway, Maui: Archaeological Reconnaissance. Prepared for Environmental Communications, Inc.

CFR (Code of Federal Regulations)

36 CFR Part 60 National Register of Historic Places. Dept. Interior, National Park Service, Washington, D.C.

Chapman, P.S., and P.V. Kirch

1979 Archaeological Excavations at Seven Sites, Southeast Maui, Hawaiian Islands. Report Series 79-1. Dept. Anthro., B.P. Bishop Museum, Honolulu.

Clark, J.

1989 *The Beaches of Maui County*. Honolulu: University of Hawaii Press.

Conde, J.C.

1973 *Sugar Trains: Narrow Gauge Rails of Hawaii*. Felton, California: Glenwood Publishers.

Connolly, R.D.

1974 Phase I Archaeological Survey of Kahoma Stream Flood Control Project Area, Lahaina, Maui. Ms. on file, Dept. Anthro., B.P. Bishop Museum, Honolulu.

Cordy, R.

1981 A Study of Prehistoric Social Change: The Development of Complex Societies in the Hawaiian Islands. New York: Academic Press. (Virtually identical to author's 1978 Ph.D. Dissertation, with addition of an epilogue.)

Davis, B.D.

1974 Preliminary Report, Mala Wharf Burials, Phase I, Mala, Lahaina, Maui Island. Report No. 14-105. Archaeological Research Center Hawaii, Inc.

Dobyns, S., and J. Allen-Wheeler

1982 Archaeological Monitoring at the Site of the Kaanapali Alii Condominium, Island of Maui. Dept. Anthro., B.P. Bishop Museum. Prepared for Egan Stanley Corporation.

Donham, T.K.

1986 Archaeological Survey Test Excavations, Kapalua Hotel Development Site 2-H, Kapalua Bay Resort. PHRI Report 224-052286. Prepared for Kapalua Land Company.

1989 Interim Report - Kapalua Mitigation Program, Data Recovery Excavations at the Honokahua Burial Site, Land of Honokahua, Lahaina District, Island of Maui. PHRI Report No. 246-020689. Prepared for Kapalua Land Company.

Earl, T. K.

1980 Prehistoric Irrigation in the Hawaiian Islands: An Evaluation of Evolutionary Significance. *Archaeology and Physical Anthropology in Oceania* 15:1-28.

Ellis, W.

1963 *Journal of William Ellis, Narrative of a Tour of Hawaii, or Owhyee...* Honolulu: Advertiser Publishing Co.

Fornander, A.

1972 IN Handy and Handy 1972:494.

Graves, D.

1991 Archaeological Inventory Survey, Launiupoko Golf Course, Land of Launiupoko, Lahaina District, Island of Maui (TMK:4-7-01:2). PHRI Report 837-111390. Prepared for AMFAC/JMB Development (Hawaii), Inc.

Griffin, P.B., and G.W. Lovelace (Eds.)

1977 Survey and Salvage - Honoa Pi'ilani Highway. The Archaeology of Ka'anapali from Honokowai to 'Alaeloa Ahupua'a. Archaeological Research Center Hawaii, Inc. *Occasional Papers* 77-1.

Hammatt, H.H.

1978 Archaeological Investigation and Monitoring, Mala Wharf Boat Launch Ramp Area, Lahaina, Maui. Archaeological Research Center Hawaii, Inc. Prepared for State of Hawaii, Water Transportation Facilities Division.

Handy, E.S.C., and E.G. Handy

1972 Native Planters in Old Hawaii. *Bishop Museum Bulletin* 233. Bishop Museum Press, Honolulu.

Haun, A.E.

1988 Subsurface Archaeological Reconnaissance Survey, Lahaina Cannery Makai and Mauka Parcels, Land of Moalii, Lahaina District, Island of Maui [TMK: 4-5-05:9,10,11; 4-5-11:3]. PHRI Report 374-020988. Prepared for Hawaii Omori Corporation.

Hommon, R.J.

1973 Report of a Walk-Through Survey of Kahoma Stream Flood Control Project Area. Ms. 072073. Dept. Anthro., B.P. Bishop Museum.

1982 An Archaeological Reconnaissance Survey of the North Beach Mauka and South Beach Mauka Areas, Hanakao'o, West Maui. Science Management, Inc. Prepared for Belt, Collins and Associates.

Jensen, P.M.

1989 Archaeological Inventory Survey, North Beach Mauka/South Beach Mauka Development Sites, Land of Hanakaoo, Lahaina District, Island of Maui. PHRI Report 482-111189. Prepared for Amfac, Inc.

1991 Archaeological Inventory Survey, Honoapiilani Highway Realignment Project, Lahaina Bypass Section, Modified Corridor Alignment. PHRI Report 1064-081091. Prepared for Michael T. Munekiyo Consulting.

Jensen, P.M., and G. Mehalchick

1992 Archaeological Inventory Survey, Puukolii Village Project Area, Land of Hanakaoo, Lahaina District, Island of Maui. PHRI Project No. 1252-092392. Prepared for AMFAC Property Investment Corporation.

1993 Archaeological Inventory Survey North Beach Mauka (Kaanapali) Site. Land of Hanakaoo, Lahaina District, Island of Maui. PHRI Project No. 1251-092392. Prepared for AMFAC Property Investment Corporation.

Joerger, P.K., and M.W. Kaschko

1979 A Cultural History Overview of the Kahoma Stream Flood Control Project, Lahaina, Maui and the Ma'alaea Small Boat Harbor Project, Ma'alaea, Maui, Hawaii. Hawaii Marine Research, Inc. Prepared for U.S. Army Corps of Engineers, Pacific Ocean Division, Honolulu, Hawaii.

Kaschko, M.W.

1974 Archaeological Walk-Through Survey of Specified Areas in the Wailuku Flood Prevention Project and the Honolua Watershed, Maui. Ms. 091674. Dept. Anthro., B.P. Bishop Museum.

Kirch, P.V.

1971 Archaeological Excavations at Palauea, Southeast Maui, Hawaiian Islands. *Anthropology and Physical Anthropology in Oceania* IV (1):62-86.

1973a Archaeological Survey of the Honolua Development Area, Maui. Dept. Anthro., Ms. 060673, B.P. Bishop Museum, Honolulu.

1973b Archaeological Excavations at Site D12-1, Hawea Point, Maui. Ms. 091173. Dept. Anthro., B.P. Bishop Museum, Honolulu.

1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory.* Honolulu: University of Hawaii Press.

Komori, E.

1983 Archaeological Investigations at Kahana Gulch, Lahaina District, Island of Maui. Ms. 110883. Dept. Anthro., B.P. Bishop Museum, Honolulu.

Menzies, A.

1920 *Hawaii Nei 128 Years Ago.* Honolulu: The New Freedom Press. (William F. Wilson, Ed.)

Pearson, R.J.

1970 The Archaeology of Hana: Preliminary Survey of Waianapanapa State Park. *Hawaii State Archaeological Journal* 70-2. Dept. of Land and Natural Resources.

Rosendahl, M.L.K.

1986 Archaeological Field Inspection, Sheraton Maui Master Plan Project Area, Lands of Honokowai and Hanakaoo, Lahaina District, Island of Maui. PHRI Report 222-030386. Prepared for Wimberly, Whisenand, Allison, Tong and Goo.

Rosendahl, P.H.

1987 A Plan for Archaeological Monitoring of Shoreline Construction, Kaanapali North Beach Development Site, Land of Hanakaoo, Lahaina District, Island of Maui. PHRI Report 345-082487. Prepared for Kaanapali North Beach Joint Venture.

Simpich, F.

1974 *Dynasty in the Pacific.* New York: McGraw-Hill Book Co.

Sinoto, A.

1975 An Archaeological Reconnaissance of the Mala Wharf Boat Launch Ramp Area, Lahaina, Maui. Ms. 082075. Dept. Anthro., B.P. Bishop Museum, Honolulu.

Smith, H.W.

1989 Historical Documentary Research IN Archaeological Inventory Survey, Lahaina Master Planned Project Site, Land of Wahikuli, Lahaina District, Island of Maui. PHRI Project 653-100689. Prepared for Housing Finance and Development Corp.

Soehren, L.J.

1963 An Archaeological Survey of Portions of East Maui, Hawaii. Unpublished Ms. Dept. Anthro., B.P. Bishop Museum, Honolulu.

Soil Survey Staff

1962 U.S. Dept. of Agriculture-Soil Conservation Service. *Handbook* No. 18. Government Printing Office, Washington, D.C.

Walker, A.T., and P.H. Rosendahl

1985 Testing of Cultural Remains Associated with the Kahana Desilting Basin, Honolua Watershed, Land of Kahana, Lahaina District, County of Maui. PHRI Report 128-040185. Prepared for U.S. Department of Agriculture, Soil Conservation Service, Honolulu.

Walker, W.M.

n.d. Archaeology of Maui. Ms. on file. Dept. Anthro., B.P. Bishop Museum, Honolulu. (1930)

APPENDIX A

HISTORICAL DOCUMENTARY RESEARCH

by Kepā Maly

The Sheraton-Maui Kā'anapali Beach Hotel project area is situated in Lāhainā District in the *ahupua'a* of *Hanaka'ō'ō (bay [of] the digging stick), and is associated with the site called Ke-ka'a (The rolling; descriptive of rumbling sounds that seem to roll down the slopes of the black lava promontory which rises above the site). Pu'u Keka'a (Keka'a hill) is a prominent feature on this coastline, and is the source of interesting narratives pertaining to Hawaiian customs associated with the after life.

In the 1800s, several experts in Hawaiian culture and history referred to Keka'a as being an ancient capital of Maui (Kamakau 1964, Fornander 1969, Malo 1903). Though there is little specific information about events and features in Keka'a which is readily available to the modern researcher, it can be hoped that as more narratives from Hawaiian language newspapers are translated, that additional information will become available. One reason for this apparent lack of information is probably that in the early 1800s, Lele, in the *ahupua'a* of Wahikuli became established as the "royal capital" of Hawai'i. The name Lele later gave way to Lāhainā, the general name of the larger land district.

By the time of the 1848 *Māhele*, the island of Maui was divided into 12 major districts; Lāhainā and Kā'anapali were two of the twelve old districts (Barrere 1974:31). Kā'anapali (Kā'ana - the dividing cliff) was an independent district of Maui until around 1859, at which time it was included with the lands of Lāhainā District. An excerpt from the legend of Ka-Miki (Maly, in prep.) provides readers with a lengthy place-name riddle, and in the riddle, an alternative description of the ten ancient *moku-o-loko* (districts or regions) of Maui Island is offered. The Hawaiian narrative comes from an account of the chief Kahuku who, challenged Ka-Miki, the legendary hero and great-grandchild of the goddess Haumea (also called Papa) to a riddling contest. Thinking Ka-Miki would be unfamiliar with the island of Maui, Kahuku described Maui with the following riddle:

Ku ku'u moku i Kahiki; ke pō a'e la i ka pahulu; ke hana ala; no mā'e'ele; a ka'o i ka lau; o'u mau mākua i ka poko i ka loa; ke ao a'ela i ka 'ula wena; a make i ke kula; ke ka'a ala i ka pali. A hua a pane!

My island appears at Kahiki; darkness sets upon the ghosts [nightmares, a play on the name of Pahulu, a ghost-god of nightmares]; numbing the clustered leaves; my parents in the short and long of it; the light reddens; and dyes upon the plain, and rolls along the cliff. Answer!

Ka-Miki responded to the challenge by accurately describing Maui's major regions:

Ku ka moku i Kahiki; [1] o Kahiki-nui ka moku i 'ōlelo 'ia ilaila i po'ohina ai ka makani; [2] Ke pō a'e i Kīpahulu; [3] kanaka-makua aku i Kaupō; [4] Ke hana ala no a mā'e'ele, o Hāna ka moku i hānau ai ka makani mā'e'ele, o Honomā'e'ele ia, he 'ōkana ia aia ilaila ka ulu 'ōhi'a o Kealakomo; [5] Ke ka'o ala i ka lau; o ke Ko'olau ia, o ke kai kuapuhi a ka makani; [6] O'u mau mākua i ka poko i ka loa; o Hāmākua poko a me [7] Hāmākua loa, i ka nome a ka lā i ka pohu o Māliko; [8] Ke ao a'e la i ka 'ula wena; o Makawao ia, o ka ua hō'elo a ka 'Ūkiu i ka 'ula wena, o Honua'ula 'ia, ilaila i make ai ka makani; [9] A make i ke kula; o Mākena la he 'ōkana 'āina a me Kula, o kauwahi moe kokolo alualu hele a ke kula ho'i mai, he 'āina ua kaulana mai nā li'i kahiko loa mai; [10] Ke-ka'a ala i ka pali; o Kā'anapali ia. O ka 'umi o nā moku i loko o Maui-loa ke keiki a Papa i hānau ai.

The island that resembles Kahiki; (1) refers to Kahiki-nui, the district made silvery by the mists [blowing in from the ocean]; (2) Mist darkened is Kīpahulu; (3) becoming mature, mists settling densely at Kaupō; (4) Where one becomes numb refers to Honomā'e'ele, Hāna; the district in which the winds are born, and it is there in the combined lands that the *'ōhi'a* grove of Kealakomo is located; (5) The cluster of leaves refers to Ko'olau where the ocean wells up in the wind; (6) My short and long parents refers to Hāmākua poko and (7) Hāmākua loa, where the sun munches away at the calm of Māliko; (8) The light which reddens refers to the lands of Makawao in the moistening rains of the 'Ūkiu, and Honua'ula, where the wind is destructive; (9) Dying upon the plain refers to the combined lands of Mākena and Kula, where the mist lies

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* *Hana-ka-'ō'ō - The Hawaiian word "hana" is used to describe both a natural bay of water and a land formation which has the appearance of a protected cove. Thus the place name could recount the occurrence of work done with digging sticks in preparation for planting of sweet potatoes etc., in a favored agricultural locality.*

low, creeping, traveling to and fro along the plain, this is a land famous with the chiefs from the distant past; (10) Keka'a [a rumble] rolls along the cliffs refers to the lands of Ka'anapali. And so these are the ten districts within Maui-loa, the [island] child born to Papa (Maly, in prep.).

Legendary References

In *Native Planters of Old Hawaii* (1972), Handy provides some background to legends of the area and a brief description of life in and around Keka'a.

> There is a traditional record of the dividing and subdividing of Maui's territories (Beckwith, 1940, p. 383). "It was during the time of (the Ali'i) Kakaalaneo of Maui that the division of lands is said to have taken place under a kahuna named Kalaiha'ohi'a (Hew the bark of the 'ohi'a tree) which portioned out the island into districts, subdistricts, and smaller divisions..."
>
> Kakaalaneo lived on a hill named Keka'a in Lahaina District, owned fishponds on the shores of far-distant Hana, planted a famous breadfruit grove, and married a Moloka'i chiefess who brought him the first feather cap seen on Maui (1972:491).
>
> Lahaina District was a favorable place for the high chiefs of Maui and their entourage for a number of reasons: the abundance of food from both land and sea; its equable climate and its attractiveness as a place of residence; it had probably the largest concentration of population, with its adjoining areas of habitation; easy communication with the other heavily populated areas of eastern and northeastern West Maui, "The Four Streams," and with the people living on the western, southwestern and southern slope of Haleakala; and its propinquity to Lanai and Molokai... All this area, like that around and above Lahaina, is now sugar-cane land....Lahaina's main taro lands, on the lower slopes running up to the west side of Pu'u Kukui, were watered by two large streams, Kanaha and Kahoma, which run far back into deep valleys whose sides were too precipitous for terracing (1972:492).
>
> According to Handy, in *The Hawaiian Planter* (1940):
>
> On the south side of western Maui the flat coastal plain all the way from Kihei 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 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).

Native informant S. Kaha (IN Fornander 1917-1919) describes special features of Keka'a and its role as the capital of Maui in the following narratives:

> Concerning the great amount of human bones at this place. On account of the great number of people at this place there are numerous skeletons (this was the vicinity of several bloody battles, that doubtless left their toll), as if thousands of people died there; it is there that the Lahainaluna students go to get skeletons for them when they are studying anatomy. The bones are plentiful there; they completely cover the sand.
>
> This is also a ghostly place. Some time a number of people came from Kaanapali (from the other side) going to Lahaina in the dark. When they came to Kekaa stones rolled down from the top of the hill without any cause. Listening to it, it seemed as if the hill was tumbling down; the people going along were startled and they explained, Kekaa is ghostly! Kekaa is ghostly!" Certainly this is a strange thing for this hill to do.
>
> It is said that when a person dies his spirit journeys to Kekaa; if he has a friend there who had previously died, that one would drive it away when the spirit is nearing Kekaa. Sometimes the spirit of a person would return and re-enter the body, and cause it to come to life again; that is what happened too those who are living again. Many souls came to this place Kekaa. It is called the Leina-a-ka-uhane, the leaping place of the soul... If they have friends there some of them are driven back [whence they re-enter the body] and live again...
>
> ...At Kekaa lived Maui [the demi-god] and Moemoe... The great desire of one [Moemoe] was to sleep. The other [Maui] desired to travel. When Moemoe slept, Maui was traveling, each according to his taste... [Moemoe] made up his mind...to search for his friend, Maui.

> A road on the northeast side of Kekaa was named after one of these men; it is called "Ke alanui kikeekee a Maui" – the zig zag pathway of Maui" (Fornander, Vol.5:540-544).
>
> To this day, "Ke ala kike'eke'e a Māui – The winding trails of Māui" (Pukui 1983, No. 1674) remains a famous saying of Maui Island; used in description of the trails traveled by the demi-god Māui.
>
> The Hawaiian concept of a "*leina*" (spirit leaping spot) mentioned above in the Kaha narratives, is an important one in the context of the Keka'a area. Hawaiian historian Samuel Kamakau explains the importance of the Leina-a-ka-'uhane (Leaping place of souls) and the Hawaiian concepts of the after-life: Following death, one's spirit traveled across the land until it was met by an '*aumakua* or family god. For a soul who had no benevolent '*aumakua* to guide it upon the right path, it might cross "over the flat lands like a wind, until it came to a leaping place of souls..." (1964:47)
>
> There spirits would be bathing in the sea in an area where there was a valley in the sea floor below a jutting rock. If it found no 'aumakua soul to warn it, and it leaped from this soul-catching leaping place (...that is the rock), it would leap into the po pau 'ole o Milu [never ending night of Milu]. That was the purpose of these places that were spoken of frequently by the ancients. Many people who had died and come to life again had pointed them out... (ibid.:47-48).
>
> There were Leina-a-ka-'uhane and 'Ulu-o-Leiwalo on Hawaii, Maui, Molokai, Lanai, Kauai, and Niihau as well as on Oahu. The traditions about these places were the same. They were where spirits were divided to go into the realm of wandering spirits, the ao kuewa or ao 'auwana; or to the ancestral spirit realm, the ao 'aumakua; or to the realm of endless night... (ibid.:48).
>
> In Thrum's "Tales from the Temples" (1909:45), the author provides one tale that mentions the land of Keka'a. In it, a beautiful woman named Wahine-o-Manu'a was ill treated by her husband. When she fled from him, Wahine-o-Manu'a hid within the temple of Halulukoʻako'a, in Wahikuli. Upon departing from the heiau, Wahine-o-Manu'a was guided by an owl-god to a place mauka of Keka'a where she recuperated and then departed. To this day, the stone by which she rested is called Pōhaku-o-Wahine-o-Manu'a, or the Stone of the Woman of Manu'a.

Prehistory

By c. 950 A.D. the Lāhainā region had become established as a chiefly community, where Hua-a-Pohukaina built at least two *heiau* (Kamakau 1991:148-149). Keka'a itself became the ruling seat of the chief Kaka'alaneo (c. 1200 A.D.). In order to support "royal" communities, there needed to be substantial *hoa'āina* (tenants - cultivators of the land). It is likely that areas on the *ko kula uka – ko kula kai* (upland and coastal plains) were planted with crops such as sweet potatoes, sugar cane, bananas, breadfruit, and dryland taro in the higher elevations, etc. It was in this way that the land provided the "bread" of the Hawaiian diet. Additionally, certain upper slopes supported valleys and streams which could have been developed for *loʻi kalo* (taro pond field systems). Land use practices would also have included propagation and harvesting of *olonā* (*Touchardia latifolia*) for cordage, and collecting various woods from the upland forests to be used for spears, paddles, canoes, and tools etc.

Fishing in this region was considered some of the best on Maui, and it is likely that a great deal of energy went into the various practices associated with the harvesting of ocean resources as well. Though a farmer would gather some ocean resources, and a fisherman would keep some food plants near by his residence, it is generally accepted that specialists often carried responsibility for various tasks in contributing to the overall community. It is reasonable to assume that fish and other ocean resources would have been provided to those who supplied the material needs and main agricultural resources of the land to the fishermen; and of course, the fishermen in turn provided the meat of the Hawaiian diet to the agriculturalists.

Early Historical Accounts In Description of the Lahaina District

Menzies, the naturalist and surgeon on HMS *Discovery* during Captain George Vancouver's 1793 tour, made these observations of the Lāhainā coast and the village:

> ...[We] soon entered the verge of the woods where we observed the rugged banks 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...
>
> March 17...[We went] to see the village of Lahaina, which we found scattered along shore on a low tract

of land that was neatly 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 IN Handy and Handy 1972:492-493).

J. Arago, who visited Hawai'i with Captain Louis de Freycinet in 1819, was impressed with the area as well:

> 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... The space cultivated by the natives of Lahaina is 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 (IN Handy and Handy 1972:493).

Rev. C.S. Stewart visited Hawai'i twice, first in 1823, as a missionary assigned to the station at Lahaina, and next as chaplain of the U.S. Frigate *Vincennes*. His diary entry for May 31, 1823 reads:

> 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 cocoa-nut, the only tree we have before seen except on the tops of the mountains, but also of the breadfruit and of the kou...while the banana plant, kapa [*wauke* or paper mulberry growth] and sugar-cane are abundant, and extend almost to the beach, on which a fine surf constantly rolls (IN Taylor 1928:42).

Another Stewart entry reads:

> ...The breadfruit trees stand as thickly as those of a regularly planted orchard, and beneath them are kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kapa 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 (ibid.:43).

Another interesting account is found in the *Maui News* (December 24, 1926); entitled "Historic Lahaina," it provides the following narrative of a 1926 trip on horseback through the region:

> [Departing from the lands Honokōhau, north of Hanaka'ō'ō] ...The road during the rest of the journey to Lahaina is first-class. For a great part of the way the traveler can indulge in a brisk canter whenever he chooses. It skirts the sea beach very closely, running, in some places, within eight or ten feet of high water mark. Beyond this part, all the way into Lahaina, it lies further from the sea, but is equally good for riding.
>
> ...The large number of mango, bread fruit, tamarind, and other trees, with innumerable bananas, which are growing in all parts of the town and around it, give the place a most picturesque appearance. The luxuriance with which these trees grow here I have not seen equaled at any other place in the Kingdom. Mr. Turton's sugar plantation also is quite near to the town. Sugar cane is planted here wherever land can be obtained, a proof how rich the soil is...It [Lahaina] has suffered from the advance of other places, and also, in common with all the formerly populous parts of the Kingdom, from the lamentable depopulation, which is the most striking feature in the history of the islands since they became known to European nations. It has, I believe, experienced of late some revival, but its prospects are by no means so good as those of many other Hawaiian towns, which, under the influence of what is now the staple industry of the Kingdom, sugar growing, are making rapid strides in advance (Cummings 1926).

Land Commission Awards

During the *Māhele* of 1848, Hawaiian tenants of the land were required to provide testimonies in support of their Land Commission Awards (LCAs). The registry and testimonies often provide insights into land use and physical features of particular areas. In Hanaka'ō'ō, nearly the entire *ahupua'a* was awarded to Lot Kamehameha (Kamehameha V) in LCA 7715. Because *ali'i* (royal) claimants were not required to provide documentation for their awards, there is little land use documentation from the *Māhele* period at Hanaka'ō'ō.

The Interior Department files at the Hawai'i State Archives provide the following information regarding lands in Hanaka'ō'ō:

> Interior Dept. Aug. 27, 1850: Set apart for Lot Kapuaiwa in the land division of Hanakaoo.
>
> Interior Dept. Dec. 31, 1855: In letter from J. W. Austin to Minister of Int. (Young) enclosing a statement of a/c which is attached, showing that $50 had been paid to Kaiheekai for road damages over lands in the above place.
>
> Interior Dept. April 7, 1865: In letter from Campbell & Turbun to C. C. Harris asking information relative to the # of acres, the lowest figure asked, together with the terms of payment which may be accepted for the king's lands of the above land.
>
> Interior Dept. Aug. 11, 1866: In letter from P. Nahalehua to J. O. Dominis stating that he had spoken to him relative to the desire of Hema, et al to lease the kula of the above land & Ahikuli for $300, but states that said Ahikuli belongs to C. C. Harris and H. A. Widemann.
>
> Interior Dept. Sept. 30, 1873: In letter from P. Nahalehua to J. O. Dominis inquiring as to whether the boundaries of the above land belonging to R. Keelikolani, had been settled.

By the mid 1800s the Kā'anapali - Lāhainā region was being turned to sugar cultivation. The area was the setting of some of the earliest sugar enterprises in Hawaii. In 1849, Judge A. W. Parsons operated a sugar mill here. This mill, along with 1,000 acres of land, was sold to O. H. Gulick at auction. Henry Dickenson, a Lāhainā store owner, began a plantation in 1859, and the success of his Lāhainā Sugar Co. encouraged the establishment the following year of a second plantation, Pioneer Mill Co. It was founded by three partners: James Campbell (a carpenter who later became Hawai'i's first millionaire) and Henry Turton, and James Dunbar, on lands deeded to them by Benjamin Pittman. In 1863, Lāhainā Sugar Co. went bankrupt and sold out to Pioneer Mill Co. (HRHP Site Form 50-03-1598 and Conde 1973:252). Another plantation, formed by Lot Kamehameha and others in 1870, was also bought out by Pioneer Mill Co., a few years later (HRHP Site Form 50-03-1598). The firm of Walker & Allen appears to have been the plantation agent in the early years, but in 1877 H. Hackfeld replaced them (Conde 1973:252). An 1883 evaluation of plantations represented by H. Hackfeld lists Pioneer Mill Co. assets at $500,000 (Simpich 1974).

Development of the sugar plantations brought about extensive changes in Hawaiian land use, involving thousands of acres of land. In the 1880s, the Pioneer Mill Company built a railroad which extended north from the mill, several blocks from the center of Lāhainā Village, to a point north of the town of Pu'ukoli'i in Hanaka'ō'ō, five miles distant and, at the north end, about 350 feet above the sea (Conde 1975:169). Use of the rail system was finally phased out in 1953 (Conde 1973:254).

The "Hawaii Sugar Manual" (IN Conde, 1973) provides the following commentary on the extent of sugar cultivation in the region:

> The cane fields of the estate have a sea frontage of ten miles, and while cultivated to 1 1/2 miles average depth in some sections, raising of cane is followed so far back as two and one half miles as the farthest reach up the slopes of the West Maui mountains. 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 (1973:254).

Though sugar cultivation is still important to Maui's economy, plantation activities have been in decline since the 1950's. Large land owners, looking for investment diversification, naturally turned to developments in the visitor industry. The following excerpts from Clark's book *Beaches of Maui County* (1989) bring us up to the present time, describing the buildup of the Kā'anapali Resort area by the Pioneer Mill Company and American Factors:

> In more recent times the Kā'anapali area was acquired by Pioneer Mill Company for cultivation in sugar cane. A landing was built on the north side of Black Rock [Pu'u Keka'a] to ship out the sugar that was processed and bagged at the mill in Lahaina and hauled to the landing by train.... The bagged sugar was stored in a warehouse to the rear of Black Rock. When the sugar boats called, the bags were run out to the end of the landing on flatcars...Other buildings in the area included oil and molasses tanks and, on the beach, a pavilion and beach cottages reserved for the use of Pioneer Mill Company's supervisors.

There was also a quarter-mile track on the tidal flats to the rear of Hanaka'ō'ō Point, used for racing horses on special occasions and holidays. The ruins of Kā'anapali Landing, abandoned just prior to World War II, can still be seen on the north side of Black Rock.... (ibid.:61). In December 1957 American Factors, Ltd., the owner of Pioneer Mill Company, announced plans for a multi-million dollar resort to be built

around Pu'u Keka'a and its two long white sand beaches. The complex was to be called Kā'anapali, thus preserving an old Hawaiian name. Title clearance delayed the project for several years, and construction on the first hotels commenced in the early 1960s...(ibid.:61).

In description of the shoreline and features in the *ahupua'a* of Hanaka'ō'ō, Clark offers the following narrative:

> The beach fronting the park was once known to Maui residents as Sand Box Beach. Sand Box was also the name of a still-popular surfing break fronting the neighboring Hyatt Regency Maui. During the early 1900's Pioneer Mill constructed a rock crusher near Hanaka'ō'ō Cemetery, now situated within the park. The rock crusher had several large storage bins to hold the crushed material, including a box for sand. The sand box was kept filled with beach sand, which was bagged as needed for various construction projects. The rock crusher shut down operations in the 1920's, but the sand box remained on the beach for many years, giving the beach is once-popular name... (ibid.).

Coastal Kā'anapali and Lāhainā has proven to be well suited for the development of hotels, condominiums, and shops, with sugar cultivation continuing in the upper elevations.

References Cited

Clark, J.

1989 *The Beaches of Maui County.* Honolulu: University of Hawaii Press.

Conde, J. C.

1973 *Sugar Trains: Narrow Gauge Rails of Hawaii.* Felton, California: Glenwood Publishers..

1975 *Sugar Trains Pictorial.* Felton, California: Glenwood Publishers.

Cummings, G.

1926 Historic Lahaina. *Maui News*, Nov. 24, 1926. (By George Cummings, Clerk, Office of County Auditor)

Fornander, A.

1917-19 Collection of Hawaiian Antiquities and Folk-Lore. University of Hawaii Press.

1969 *An Account of the Polynesian Race: Its Origin and Migrations.* Tokyo: Charles E. Tuttle Co, Inc. (1969 facsimile reprint of 1880 edition.)

Handy, E.S.C.

1940 The Hawaiian Planter, Vol. 1. *B.P. Bishop Museum Bulletin* 161. Bishop Museum Press, Honolulu.

Handy, E.S.C., E.G. Handy, with M.K. Pukui

1972 Native Planters in Old Hawaii. *B.P. Bishop Museum Bulletin* 233. Bishop Museum Press, Honolulu.

Kamakau, S. M.

1964 *Ka Po'e Kahiko: The People of Old.* Honolulu: Bishop Museum Press.

1991 *Tales and Traditions of the People of Old.* Honolulu: Bishop Museum Press.

Malo, D.

1903 Hawaiian Antiquities. *B.P. Bishop Museum Special Publication* 2. Honolulu: Bishop Museum Press.

Maly, K. (translator)

in prep. *Ka'ao Ho'oniua Pu'uwai no Ka-Mikí.* Translation of a legendary account of people and place name origins of the island of Hawai'i; originally published in the Hawaiian Newspaper *Ka Hōkū o Hawai'i*; January 8, 1914 - December 6, 1917.

Pukui, M.K.

1983 *'Ōlelo No'eau.* Honolulu: Bishop Museum Press.

Simpich, F.

1974 *Dynasty in the Pacific.* McGraw-Hill Book Co.

Taylor, A. P.

1928 "Lahaina: The Versailles of Old Hawaii." Thirty-Seventh Annual Report, Hawaiian Historical Society.

Thrum, T. G.

1909 The Hawaiian Almanac and Annual. Honolulu.

APPENDIX B

STRATIGRAPHIC DESCRIPTIONS

AREA 1
BT-1, SE FACE

Layer	Description
I	0-50 cmbs, ranges from 42-50 cm in thickness; very dark brown (10YR 2/2 moist); loamy clay; dark yellowish brown (10YR 3/4 dry); weak, massive structure; soft, friable, slightly sticky, plastic consistence; many micro to coarse tubular roots; many very fine interstitial pores; culturally sterile; very abrupt, wavy boundary;
II	42-88 cmbs, ranges from 28-40 cm in thickness; mottled dark reddish brown and very pale brown (5YR 3/3 and 10YR 7/4 moist); mixed sand and loamy clay; dark yellowish brown (10YR 3/4 dry); sand has strong, very fine single grain structure and loamy clay has weak massive structure; sand has loose, loose, non-sticky, non-plastic consistence and loamy clay has soft, friable, slightly sticky, plastic consistence; common fine to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
III	73-98 cmbs, ranges from 10-18 cm in thickness; dark reddish brown (5YR 3/3 moist); loamy clay; dark yellowish brown (10YR 3/4 dry); weak, massive structure; soft, very friable, slightly sticky, plastic consistence; few fine tubular roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
IV	91-120 cmbs, ranges from 52-74 cm in thickness; mottled very pale brown and brown (10YR 7/4 and 7.5YR 4/4 moist); mixed coarse sand and sandy loam; pale brown and dark brown (10YR 6/3 and 7.5YR 3/4 dry); strong, medium single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; interpreted as cultural layer based on presence of HF-1; clear, irregular boundary;
V	150-200+ cmbs; very pale brown (10YR 7/4 moist); loamy sand; pale brown (10YR 6/3 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-2, NW FACE

Layer	Description
I	0-26 cmbs, ranges from 14-26 cm in thickness; very dark brown (10YR 2/2 moist); clay loam; dark yellowish brown (10YR 3/4 dry); weak, massive structure; soft, very friable, slightly sticky, plastic consistence; many micro to coarse tubular roots; many very fine interstitial pores; culturally sterile; clear, irregular boundary;
IA	14-56 cmbs, ranges from 2-36 cm in thickness; brown (7.5YR 4/4 moist); sandy loam; dark brown (7.5YR 3/4 dry); strong, very fine to fine granular structure; soft, friable, slightly sticky, slightly plastic consistence; common micro to fine tubular roots; many fine interstitial pores; culturally sterile; clear, irregular boundary;
II	30-94 cmbs; ranges from 34-40 cm in thickness; mottled reddish brown and very pale brown (5YR 5/3 and 10YR 7/4 moist); mixed sand and loamy clay; mottled pale brown and dark yellowish brown (10YR 6/3 and 3/4 dry); sand has strong, very fine single grain structure and loamy clay has weak, massive structure; sand has loose, loose, slightly sticky, non-plastic consistence and loamy clay has soft, friable, slightly sticky, plastic consistence; common fine to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;

III	84-102 cmbs, ranges from 2-14 cm in thickness; reddish brown (5YR 5/3 moist); loamy clay; dark yellowish brown (10YR 3/4 dry); weak, massive structure; soft, friable, slightly sticky, plastic consistence; few fine tubular roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	50-124 cmbs, ranges from 16-32 cm in thickness; mottled brown and very pale brown (7.5YR 4/4 and 10YR 7/4 moist); sandy loam; mottled dark brown and pale brown (7.5YR 3/4 and 10YR 6/3 dry); soft, friable, slightly sticky, slightly plastic consistence; no roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
V	122-290+ cmbs; mottled very pale brown and strong brown (10YR 7/4 and 7.5YR 5/6 moist); sand; mottled pale brown and brown (10YR 6/3 and 7.5YR 5/4 dry); strong, fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of unit.

BT-3, SE FACE

Layer	Description
I	0-14 cmbs, ranges from 10-14 cm in thickness; very dark brown (10YR 2/2 moist); cobbly silt loam; dark yellowish brown (10YR 3/4 dry); structureless; soft, very friable, slightly sticky, slightly plastic consistence; many micro to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IA	10-24 cmbs, ranges from 10-14 cm in thickness; brown (7.5YR 4/4 moist); sandy loam; dark brown (7.5YR 3/4 dry); strong, very fine to fine granular structure; soft, friable, slightly sticky, slightly plastic consistence; common micro to fine tubular roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
II	22-36 cmbs; ranges from 6-12 cm in thickness; dark reddish brown (5YR 3/3 moist); loamy clay; dark reddish brown (5YR 3/4 dry); weak, massive structure; soft, friable, slightly sticky, plastic consistence; many fine to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
III	26-52 cmbs, ranges from 12-34 cm in thickness; mottled reddish yellow and dark brown (7.5YR 6/6 and 3/4 moist); loamy sand; mottled reddish yellow and brown (7.5YR 6/6 and 4/4 dry); moderate, fine single grain structure; soft, friable, slightly sticky, plastic consistence; no roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	52-90 cmbs, ranges from 32-38 cm in thickness; mottled strong brown and reddish yellow (7.5YR 5/4 and 6/6 moist); sand; mottled very pale brown and pink (10YR 7/4 and 7.5YR 7/4 dry); loose, loose, slightly sticky, non-plastic consistence; no roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
V	86-118 cmbs, ranges from 22-28 cm in thickness; mottled reddish yellow and dark reddish brown (7.5YR 6/6 and 5YR 3/4 moist); mixed sand and loamy clay; mottled very pale brown and dark reddish brown (10YR 7/4 and 2.5YR 3/4 dry); sand has strong, very fine single grain structure and clay has weak, massive structure; sand has loose, loose, non-sticky, non-plastic consistence and clay has soft, friable, sticky, plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VI	114-136 cmbs, ranges from 14-18 cm in thickness; dark brown (7.5YR 3/4 moist); loamy sand; brown (7.5YR 5/4 dry); moderate, very fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; abrupt, wavy boundary;
VII	126-180+ cmbs; mottled yellow and strong brown (10YR 7/6 and 7.5YR 5/6 moist); sand; mottled very pale brown and brown (10YR 7/4 and 7.5YR 5/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

AREA 2
BT-4, NW FACE

Layer	Description
I	0-26 cmbs, ranges from 20-26 cm in thickness; dark reddish brown (5YR 3/3 moist); loamy clay; dark reddish brown (5YR 3/3 dry); weak, massive structure; hard, very friable, slightly sticky, plastic consistence; many micro to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
II	20-40 cmbs, ranges from 10-20 cm in thickness; strong brown (7.5YR 4/6 moist); loamy sand; yellowish red (5YR 5/6 dry); moderate, very fine to fine granular structure; soft, friable, slightly sticky, non-plastic consistence; many micro to fine tubular roots; many fine interstitial pores; culturally sterile; gradual, irregular boundary;
III	34-48 cmbs, ranges from 4-10 cm in thickness; very pale brown (10YR 7/4 moist); sand; very pale brown (10YR 8/3 dry); strong, fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; few fine to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	42-58 cm, ranges from 8-14 cm in thickness; dark reddish brown (5YR 3/4 moist); loamy clay; brown (7.5YR 4/4 dry); weak, massive structure; soft, friable, slightly sticky, plastic consistence; common micro to coarse tubular roots; many fine interstitial pores; culturally sterile; abrupt, irregular boundary;
V	50-140 cmbs, ranges from 84-90 cm in thickness; mottled very pale brown and strong brown (10YR 7/4 and 7.5YR 5/6 moist); loamy sand; mottled very pale brown and strong brown (10YR 8/3 and 7.5YR 5/6 dry); soft, friable, slightly sticky, non-plastic consistence; few medium tubular roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VI	138-162 cmbs, ranges from 18-22 cm in thickness; dark reddish brown (2.5YR 3/4 moist); clay; dark reddish brown (5YR 3/3 dry); weak, massive structure; slightly hard, friable, sticky, plastic consistence; few medium tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VII	158-175 cmbs, ranges from 8-15 cm in thickness; brown (7.5YR 5/4 moist); sand; light yellowish brown (10YR 6/4 dry); strong, very fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; abrupt, wavy boundary;
VIII	164-184 cmbs, ranges from 6-10 cm in thickness; dark reddish brown (5YR 3/4 moist); sandy loam; strong brown (7.5YR 4/6 dry); weak, very fine granular structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IX	172-233+ cmbs; yellow (10YR 7/6 moist); sand; strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-5, SE FACE

Layer	Description
I	0-20 cmbs, ranges from 18-20 cm in thickness; dark reddish brown (5YR 3/3 moist); loamy clay; dark reddish brown (5YR 3/2 dry); strong, very fine to medium crumb structure; hard, very friable, slightly sticky, slightly plastic consistence; many micro to coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
II	18-32 cmbs, ranges from 10-14 cm in thickness; strong brown (7.5YR 4/6 moist); loamy sand; yellowish red (5YR 5/6 dry); moderate, very fine to fine granular structure; soft, friable, slightly sticky, non-plastic consistence; many micro to fine tubular roots; many fine interstitial pores; culturally sterile; gradual irregular boundary;
III	30-46 cmbs, ranges from 12-16 cm in thickness; yellowish red (5YR 4/6 moist); loamy sand; yellowish red (5YR 4/6 dry); strong, fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; few coarse tubular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	44-55 cmbs, ranges from 6-10 cm in thickness; reddish brown (5YR 4/3 moist); loamy sand; yellowish red (5YR 4/6 dry); moderate, fine single grain structure; soft, friable, slightly sticky, non-plastic consistence; few micro to coarse tubular roots; many fine interstitial pores; culturally sterile; abrupt, irregular boundary;
V	52-124 cmbs, ranges from 68-72 cm in thickness; mottled very pale brown and strong brown (10YR 7/4 and 7.5YR 5/6 moist); loamy sand; mottled very pale brown and strong brown (10YR 8/3 and 7.5YR 5/6 dry); soft, extremely firm, slightly sticky, non-plastic consistence; no roots; many fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VI	124-158 cmbs, generally 34 cm in thickness; dark reddish brown (2.5YR 3/4 moist); clay; dark reddish brown (5YR 3/3 dry); weak, massive structure; hard, friable, slightly sticky, plastic consistence; few medium tubular roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
VII	158-165 cmbs, ranges from 5-7 cm in thickness; dark reddish brown (5YR 3/3 moist); sandy clay; moderate, fine granular structure; soft, very friable, slightly sticky, slightly plastic consistence; no roots; many fine interstitial pores; culturally sterile, abrupt, irregular boundary;
VIII	162-182 cmbs, ranges from 17-20 cm in thickness; dark reddish brown (2.5YR 3/4 moist); clay; dark reddish brown (5YR 3/4 dry); weak, massive structure; hard, very friable, slightly sticky, plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IX	180-230+ cmbs; reddish yellow (7.5YR 7/6 moist); sand; strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-6, N FACE Layer	Description
I	0-25 cmbs, ranges from 20-25 cm in thickness; dark reddish brown (5YR 3/4 moist); loamy clay; dark reddish brown (5YR 3/3 dry); strong, very fine to medium crumb structure; hard, friable, slightly sticky, slightly plastic consistence; many micro to coarse tubular and vesicular roots; many very fine to fine interstitial pores; culturally sterile; abrupt, wavy boundary;
II	25-50 cmbs, ranges from 20-25 cm in thickness; mottled very pale brown and yellowish red (10YR 7/4 and 5YR 4/6 moist); loamy sand; mottled, very pale brown and brown (10YR 8/3 and 7.5YR 5/4 dry); moderate, fine single grain structure; soft, very friable, slightly sticky, non-plastic consistence; common micro to coarse tubular and vesicular roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
III	50-55 cmbs, generally 5 cm in thickness; yellowish red (5YR 4/6 moist); loamy sand; brown (7.5YR 5/4 dry); moderate, fine single grain structure; loose, extremely firm, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	55-100 cmbs, ranges from 30-41 cm in thickness; mottled very pale brown and yellowish red (10YR 7/4 and 5YR 4/6 moist); loamy sand; mottled, very pale brown and brown (10YR 8/3 and 7.5YR 5/4 dry); moderate, very fine single grain structure; loose, extremely firm, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
V	100-110 cmbs, ranges from 10-18 cm in thickness; mottled yellowish red and dark reddish brown (5YR 3/4 and 4/6 moist); mixed clay and sand; mottled, dark reddish brown and brown (5YR 3/4 and 7.5YR 5/4 dry); hard, friable, slightly sticky, slightly plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VI	110-120 cmbs, generally 10 cm in thickness; dark reddish brown (5YR 3/2 moist); loamy clay; very dark brown (10YR 2/2 dry); weak, massive structure; soft, friable, slightly sticky, slightly plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
VII	120-130 cmbs, generally 10 cm in thickness; dark reddish brown (5YR 3/4 moist); loamy sand; reddish brown (5YR 4/4 dry); moderate, fine single grain structure; soft, friable, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
VIII	130-155 cmbs, ranges from 20-30 cm in thickness; dark reddish brown (2.5YR 3/4 moist); clay; dark reddish brown (5YR 3/4 dry); weak, massive structure; hard, firm, slightly sticky, plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IX	155+ cmbs; very pale brown (10YR 7/4 moist); sand; very pale brown (10YR 8/3 dry); strong, very fine single grain structure; hard, friable, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-7, N FACE Layer	Description
I	0-27 cmbs, ranges from 16-27 cm in thickness; dark reddish brown (5YR 3/4 moist); loamy clay; dark reddish brown (5YR 3/3 dry); strong, very fine to medium crumb structure; hard, friable, slightly sticky, slightly plastic consistence; many micro to coarse tubular and vesicular roots; many very fine to fine interstitial pores; culturally sterile; abrupt, wavy boundary;

II	16-106 cmbs, ranges from 71-90 cm in thickness; yellowish red (5YR 4/6 moist); loamy sand; brown (7.5YR 5/4 dry); moderate, fine single grain structure; loose, extremely firm, slightly sticky, non-plastic consistence; many micro to coarse tubular and vesicular roots; many very fine interstitial pores; culturally sterile; clear, irregular boundary;
III	98-116 cmbs, ranges from 7-18 cm in thickness; dark reddish brown (5YR 3/4 moist); clay; dark reddish brown (5YR 3/4 dry); weak, massive structure; hard, firm, slightly sticky, slightly plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	113-128 cmbs, ranges from 10-12 cm in thickness; yellowish red (5YR 4/6 moist); sand; brown (7.5YR 5/4 dry); strong, fine single grain structure; loose, extremely firm, slightly sticky, non-plastic consistence; many micro to coarse tubular and vesicular roots; many very fine interstitial pores; culturally sterile; clear, abrupt, wavy boundary;
V	124-144 cmbs, ranges from 15-18 cm in thickness; dark reddish brown (2.5YR 3/4 moist); clay; dark reddish brown (5YR 3/4 dry); weak, massive structure; hard, firm, slightly sticky, plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VI	144+ cmbs; very pale brown (10YR 7/4 moist); sand; very pale brown (10YR 8/3 dry); strong, very fine single grain structure; hard, friable, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

AREA 3 BT-9, S FACE Layer	Description
I	0-22 cmbs, ranges from 18-22 cm in thickness; disturbed layer; clear, irregular boundary;
II	17-26 cmbs, ranges from 2-4 cm in thickness; light yellowish brown (10YR 6/4 moist); sand; strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; many micro to coarse vesicular and tubular roots; many very fine interstitial pores; culturally sterile; clear, irregular boundary;
III	17-36 cmbs, ranges from 5-10 cm in thickness; mottled dark reddish brown and yellowish brown (5YR 3/3 and 10YR 5/4 moist); loamy clay; weak, massive structure; hard, friable, slightly sticky, slightly plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	22-83 cmbs, ranges from 47-51 cm in thickness; brownish yellow (10YR 6/6 moist); sand; very pale brown (10YR 7/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
V	70-94 cmbs, ranges from 11-19 cm in thickness; dark brown (7.5YR 4/4 moist); sand; light yellowish brown (10YR 6/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
VI	89-192+ cmbs, ranges from 86-101 cm in thickness; yellow (10YR 7/6 moist); sand; very pale brown (10YR 8/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-10, SE FACE

Layer	Description
I	0-30 cmbs, ranges from 25-30 cm in thickness; disturbed layer; very abrupt, smooth boundary;
II	30-40 cmbs, ranges from 5-10 cm in thickness; dark reddish brown (5YR 3/3 moist); loamy clay; weak, massive structure; hard, friable, slightly sticky, slightly plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt to clear, irregular boundary;
III	40-70 cmbs, ranges from 30-35 cm in thickness; mottled yellowish brown and brownish yellow (10YR 5/4 and 6/6 moist); sand; mottled light yellowish brown and very pale brown (10YR 6/4 and 7/4 dry); strong, fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt to clear, irregular boundary;
IV	70-80 cmbs, ranges from 4-12 cm in thickness; brown (7.5YR 4/4 moist); sand; light yellowish brown (10YR 6/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
V	80+ cmbs; yellow (10YR 7/6 moist); sand; very pale brown (10YR 8/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-11, E FACE

Layer	Description
I	0-21 cmbs, generally 21 cm in thickness; dark reddish brown (5YR 3/3 moist); loamy clay; strong, very fine to medium crumb structure; hard, friable, slightly sticky, slightly plastic consistence; many micro to fine vesicular roots; many fine to very fine interstitial pores; abrupt, irregular boundary;
II	21-58 cmbs, ranges from 30-38 cm in thickness; light yellowish brown (10YR 6/4 moist); sand; strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; clear, irregular boundary;
III	58-62 cmbs, ranges from 4-10 cm in thickness; yellow (10YR 7/6 moist); sand; strong, fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	62-80 cmbs, generally 20 cm in thickness; dark yellowish brown (10YR 3/4 moist); loamy sand; moderate, very fine single grain structure; soft, friable, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
V	80-90 cmbs, ranges from 4-10 cm in thickness; strong brown (7.5YR 5/6 moist); sand; strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
VI	90+ cmbs; light yellowish brown (10YR 6/4 moist); sand; strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-12, W FACE

Layer	Description
I	0-25 cmbs, generally 25 cm in thickness; very dark brown (10YR 2/2 moist); loamy clay; strong, very fine to fine crumb structure; hard, friable, slightly sticky, slightly plastic consistence; many micro to fine vesicular roots; many fine to very fine interstitial pores; abrupt, irregular boundary;
II	25-38 cmbs, ranges from 10-13 cm in thickness; brown (10YR 4/3 moist); clay; weak, massive structure; hard, friable, slightly sticky, slightly plastic consistence; common fine to coarse tubular and vesicular roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
III	38+ cmbs; yellow (10YR 7/6 moist); sand; very pale brown (10YR 8/4 dry); strong, fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-13, NW FACE

Layer	Description
I	0-20 cmbs, generally 20 cm in thickness; very dark brown (10YR 2/2 moist); loamy clay; strong, very fine to fine crumb structure; hard, friable, slightly sticky, slightly plastic consistence; many micro to fine vesicular roots; many fine to very fine interstitial pores; abrupt, irregular boundary;
II	20-30 cmbs, generally 10 cm in thickness; very dark brown (10YR 2/2 moist); gravelly clay; weak, massive structure; hard, very friable, slightly sticky, slightly plastic consistence; many medium to coarse roots; many very fine interstitial pores; culturally sterile; abrupt, irregular boundary;
III	30-80 cmbs, ranges from 20-50 cm in thickness; dark yellowish brown (10YR 4/4 moist); loamy sand; moderate fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	80-180+ cmbs; yellow (10YR 7/6 moist); sand; very pale brown (10YR 8/4 dry); strong, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine interstitial pores; culturally sterile; layer continues below base of trench.

BT-14, SE FACE

Layer	Description
I	0-10 cmbs, ranges from 8-10 cm in thickness; dark reddish brown (5YR 3/3 dry); loamy clay; strong, very fine to fine crumb structure; hard, friable, slightly sticky, slightly plastic consistence; many micro to fine tubular and vesicular roots; culturally sterile; abrupt, wavy boundary;
II	10-50 cmbs, generally 40 cm in thickness; dark reddish brown (2.5YR 3/4 dry); loamy clay; strong, very fine to fine crumb structure; hard, friable, slightly sticky, slightly plastic consistence; no roots; culturally sterile; abrupt, wavy boundary;
III	50-80 cmbs, generally 30 cm in thickness; yellow (10YR 7/6 moist); sand; very pale brown (10YR 8/4 dry); strong, fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; culturally sterile; abrupt, wavy boundary;

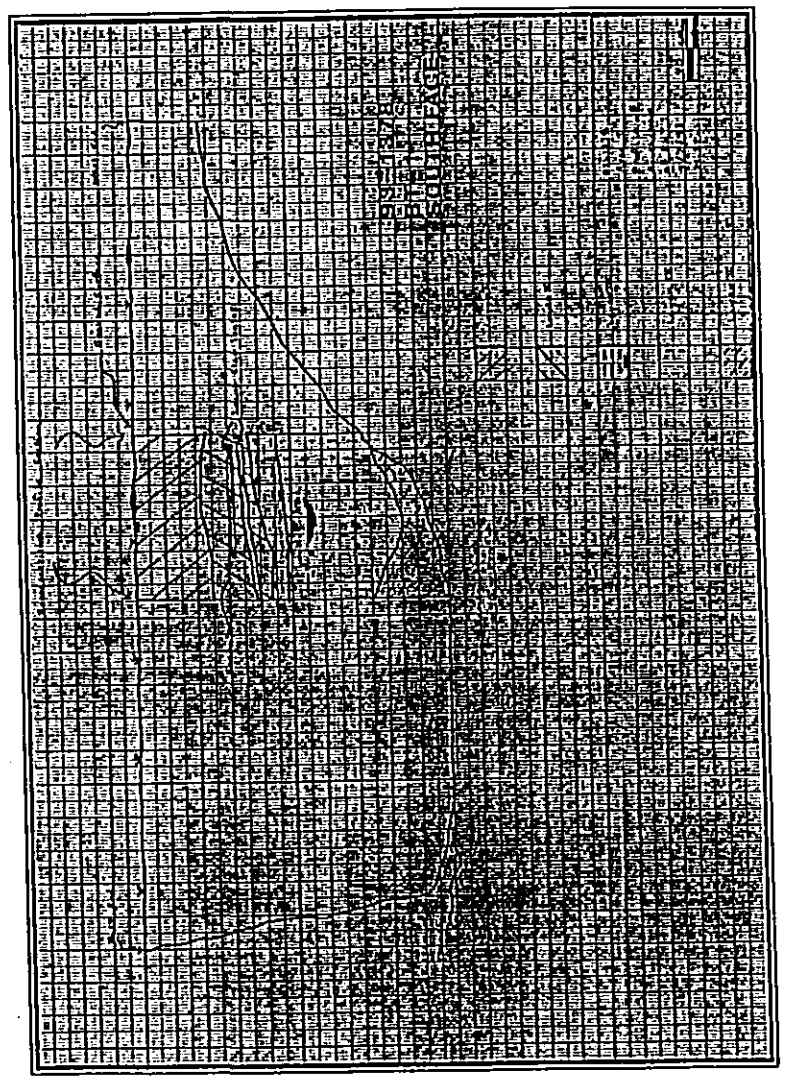
IV	80-90 cmbs, generally 10 cm in thickness; brown (7.5YR 4/4 moist); loamy sand; moderate fine single grain structure; loose, loose, slightly sticky, non-plastic consistence; no roots; culturally sterile; abrupt, wavy boundary;
V	90+ cmbs; yellow (10YR 7/6 moist); sand; very pale brown (10YR 8/4 dry); strong, fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; culturally sterile; layer continues below base of trench.

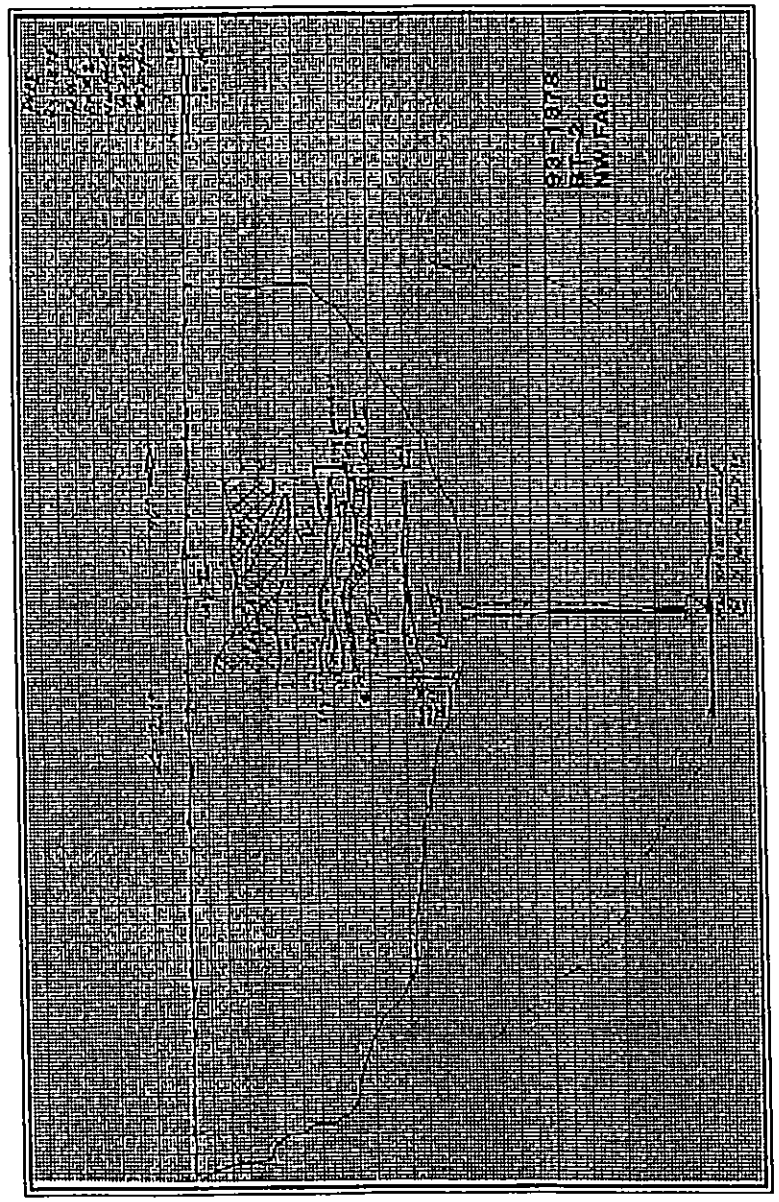
BT-15, N FACE

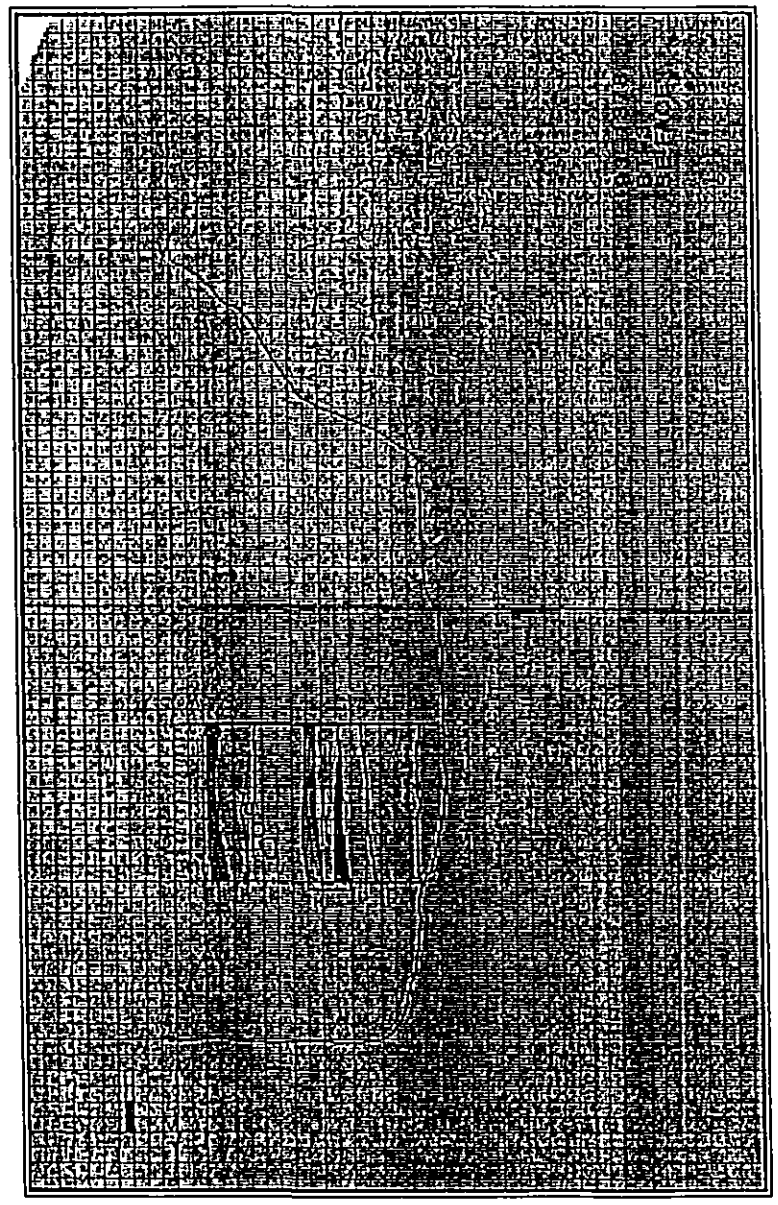
Layer	Description
I	0-30 cmbs, ranges from 16-30 cm in thickness; dark reddish brown (5YR 3/3 dry); loamy clay; strong, very fine to fine crumb structure; soft, friable, slightly sticky, slightly plastic consistence; many micro to coarse tubular and vesicular roots; many very fine to fine interstitial pores; culturally sterile; abrupt, wavy boundary;
II	26-68 cmbs, ranges from 33-42 cm in thickness; light yellowish brown (10YR 6/4 dry); sand; strong, fine single grain structure; loose, loose, non-sticky, non-plastic consistence; many micro to coarse tubular and vesicular roots; many very fine to fine interstitial pores; culturally sterile; abrupt, wavy boundary;
III	60-75 cmbs, ranges from 4-10 cm in thickness; dark yellowish brown (10YR 3/4 dry); loamy sand; moderate, very fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine to fine interstitial pores; culturally sterile; abrupt, wavy boundary;
IV	70-200+ cmbs; light yellowish brown (10YR 6/4 dry); sand; strong fine single grain structure; loose, loose, non-sticky, non-plastic consistence; no roots; many very fine to fine interstitial pores; culturally sterile; layer continues below base of trench.

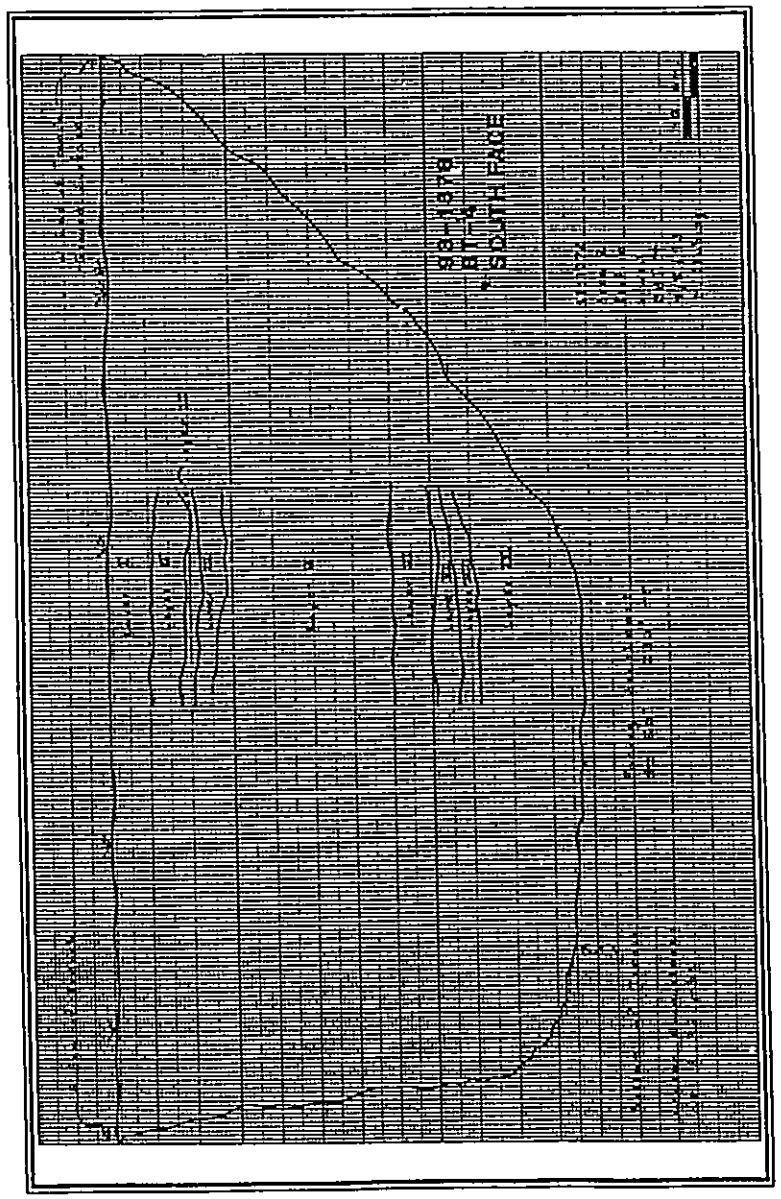
APPENDIX C

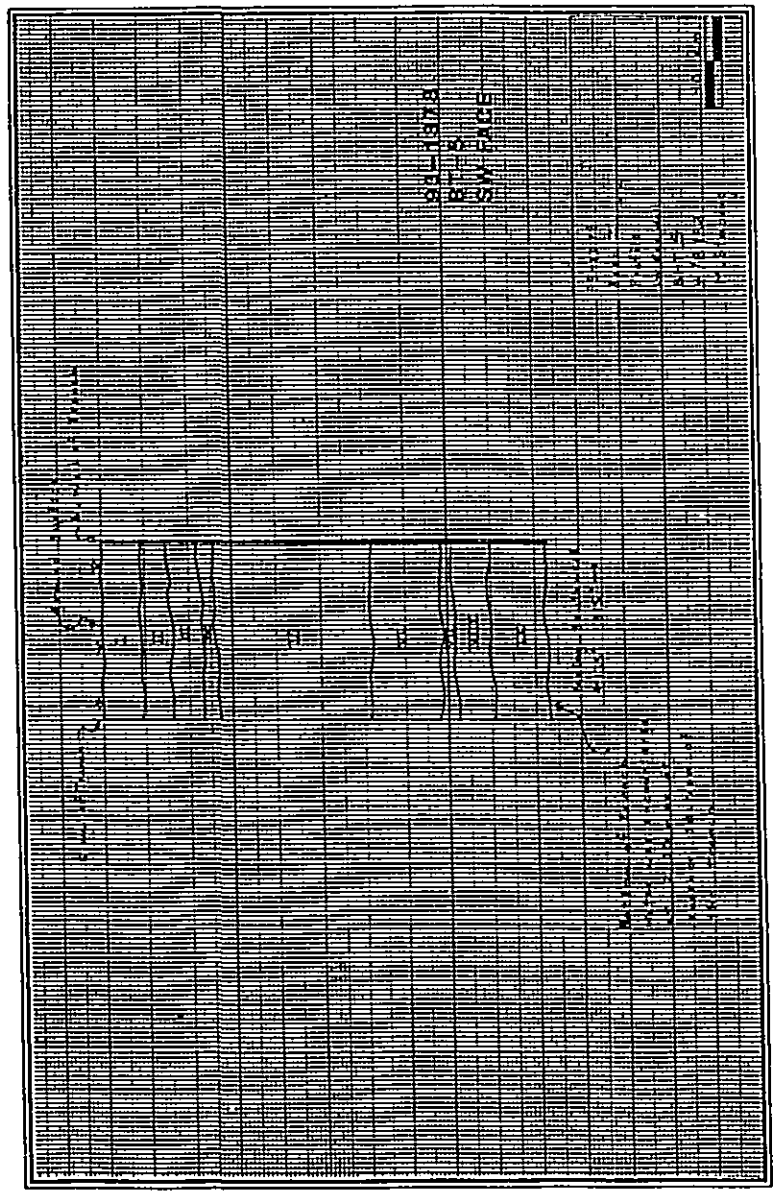
FIELD DRAWINGS

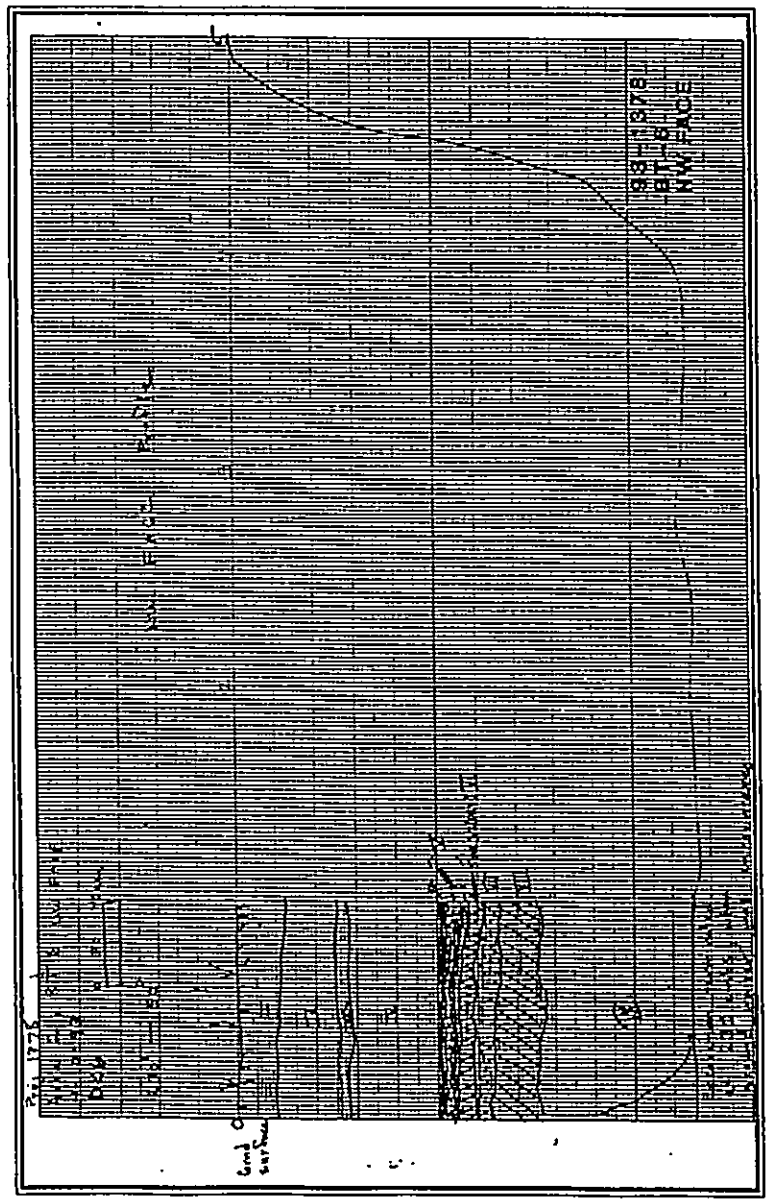


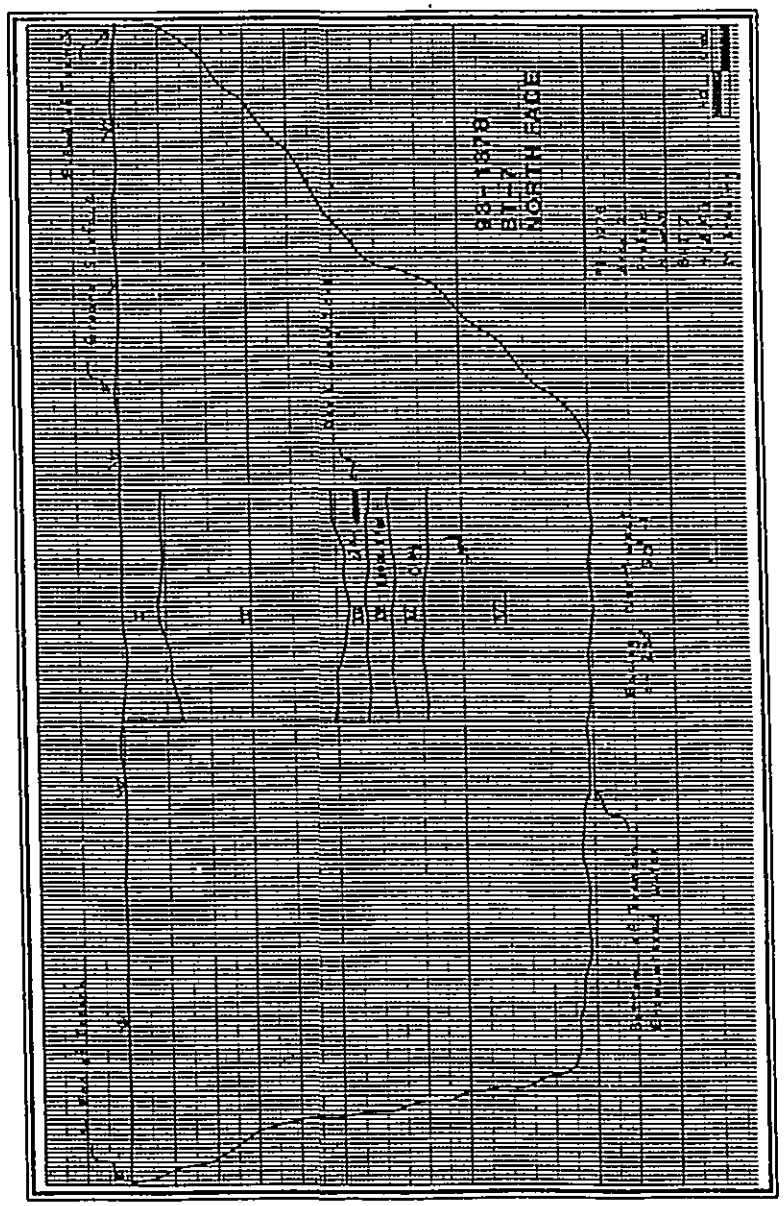


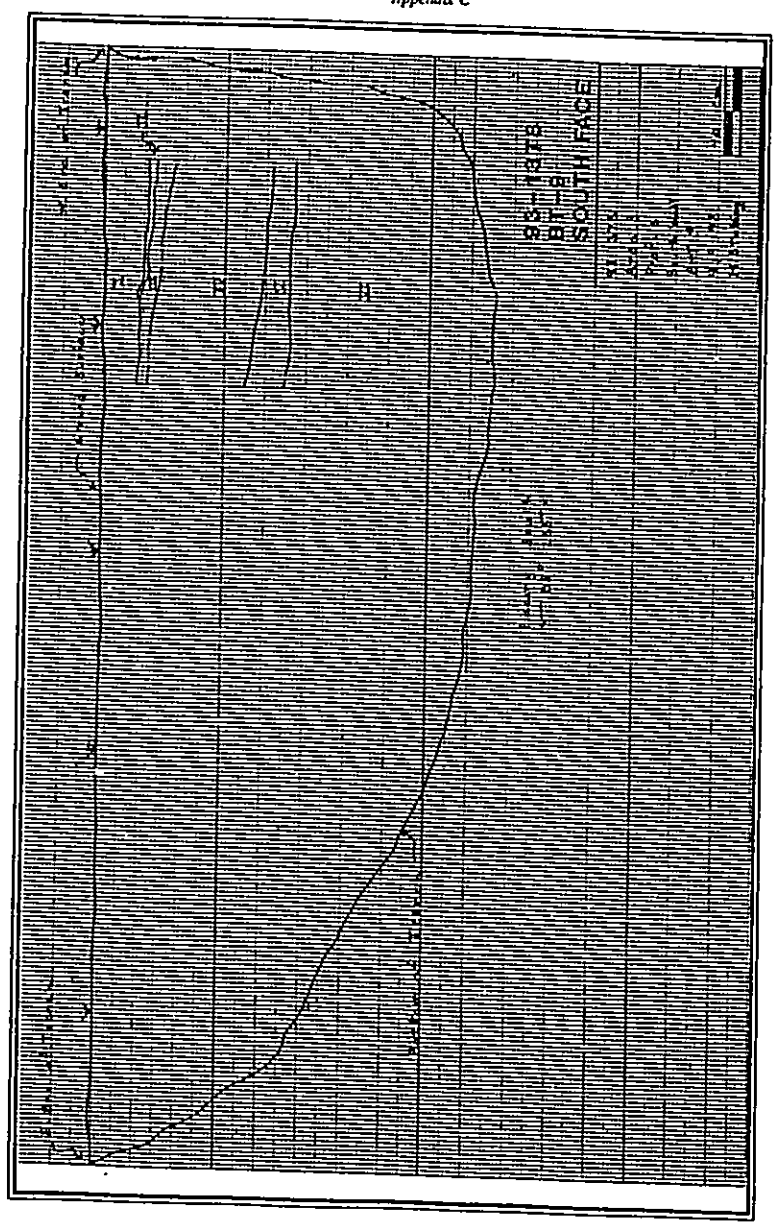


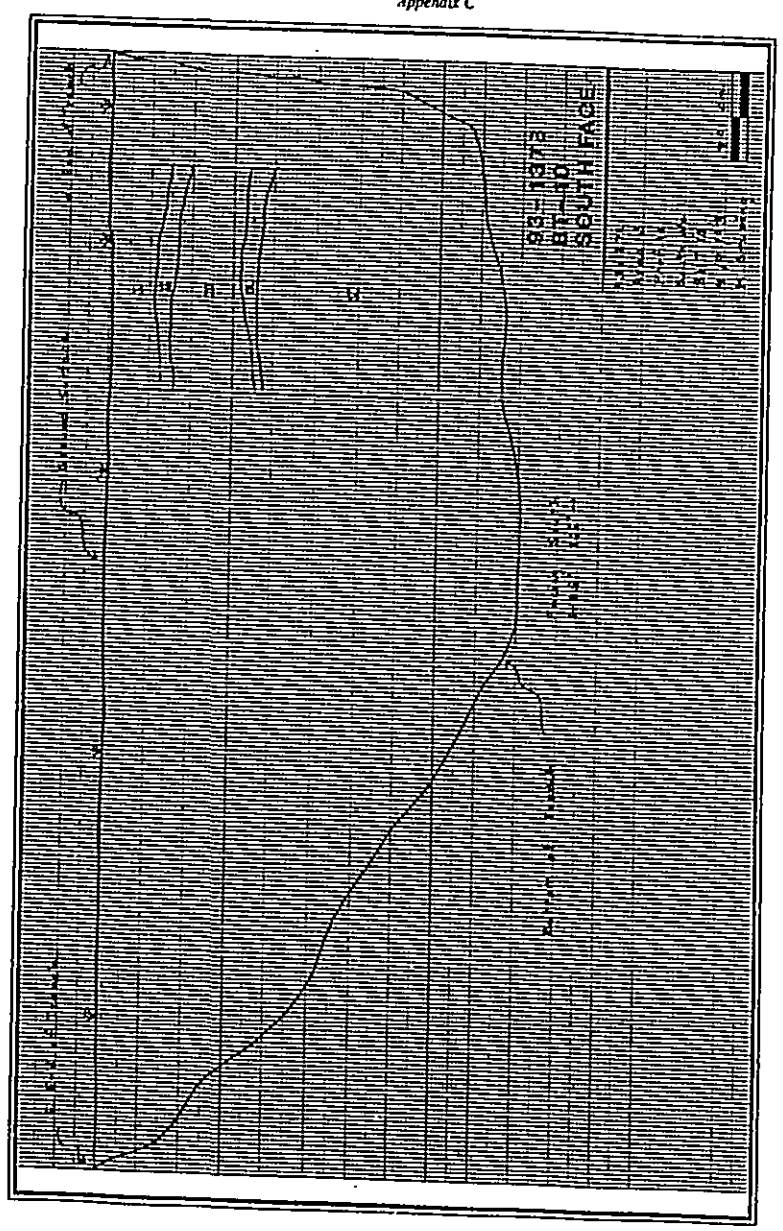


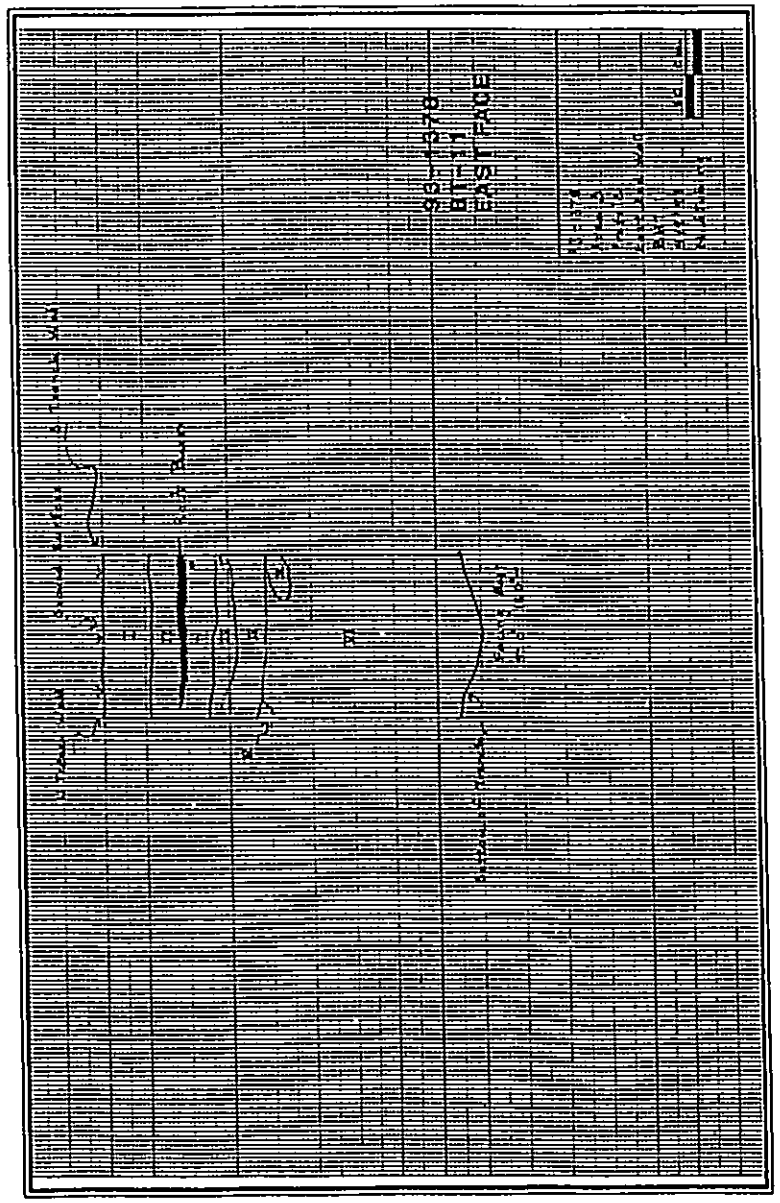


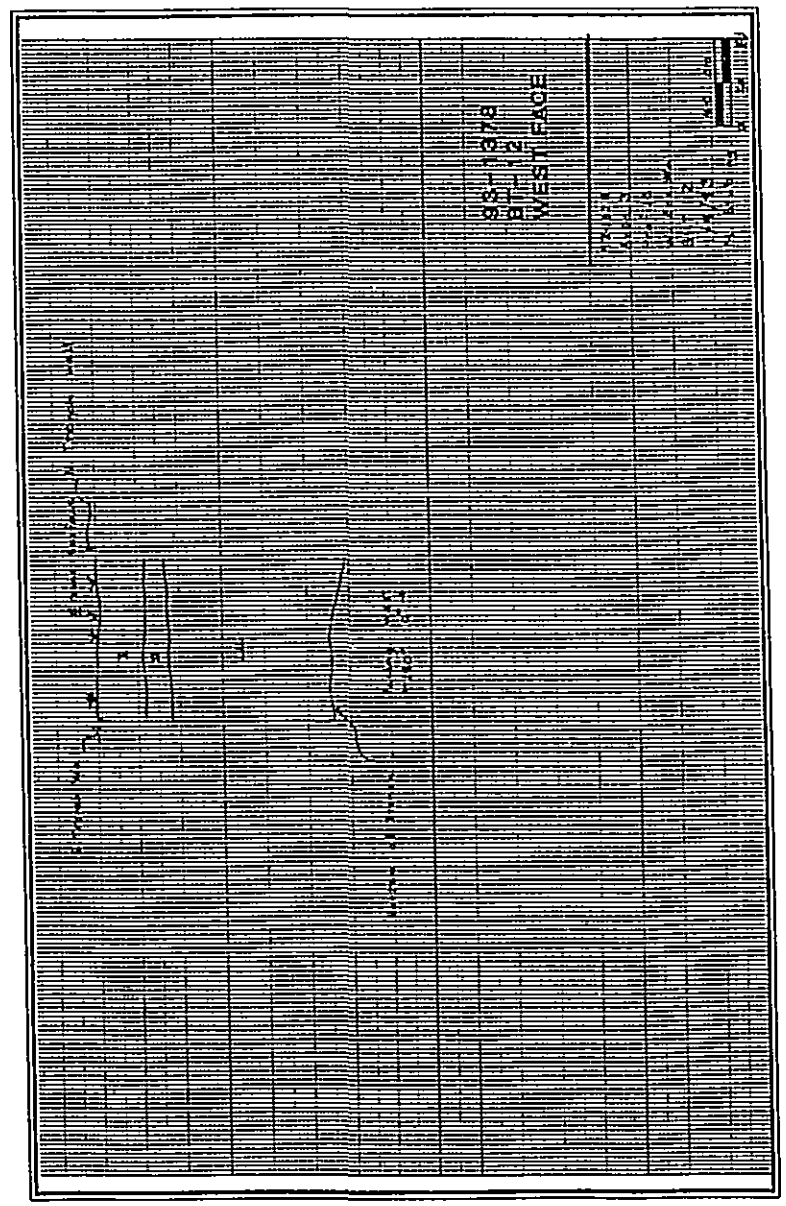


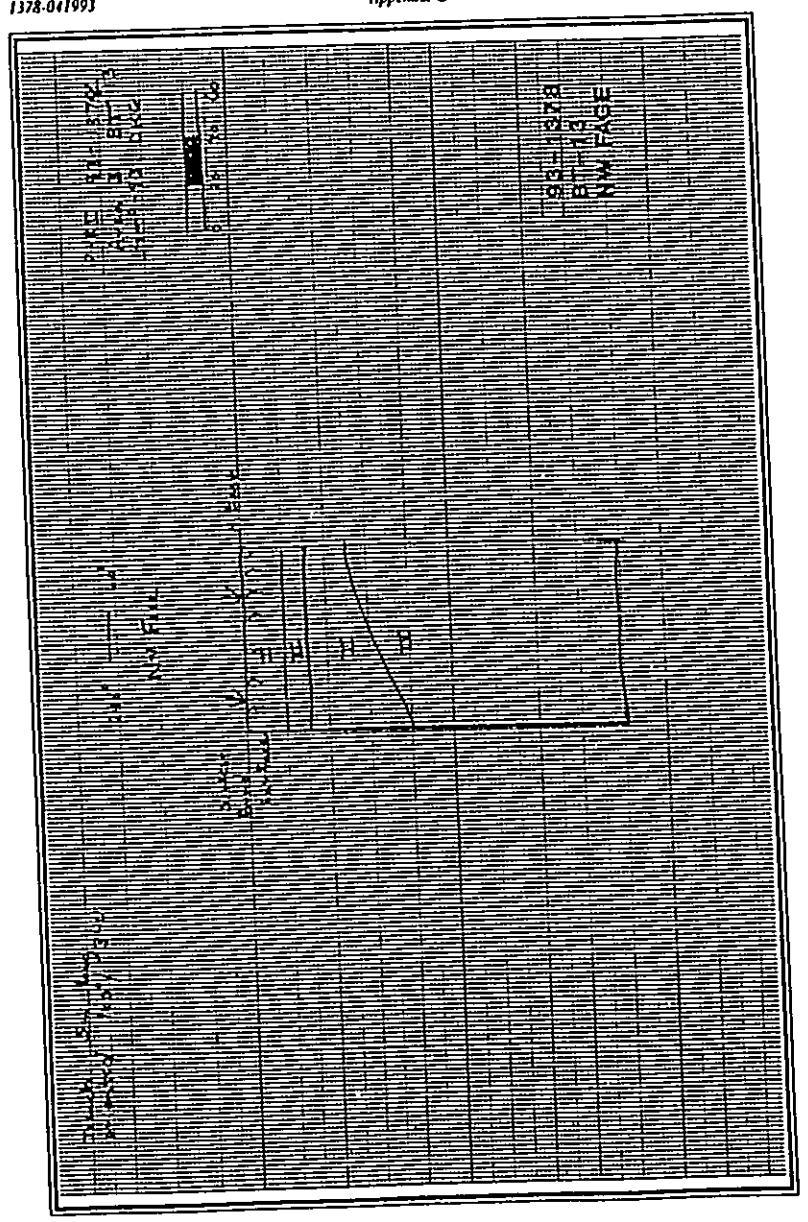


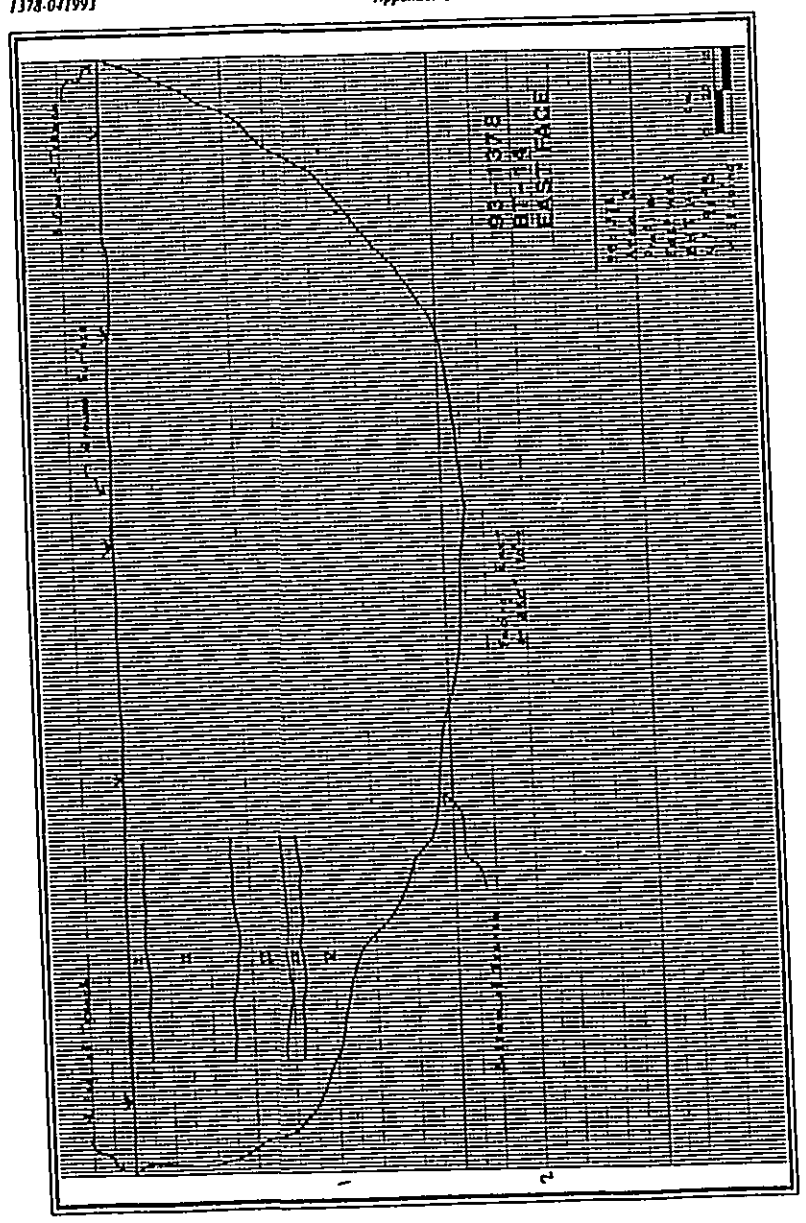


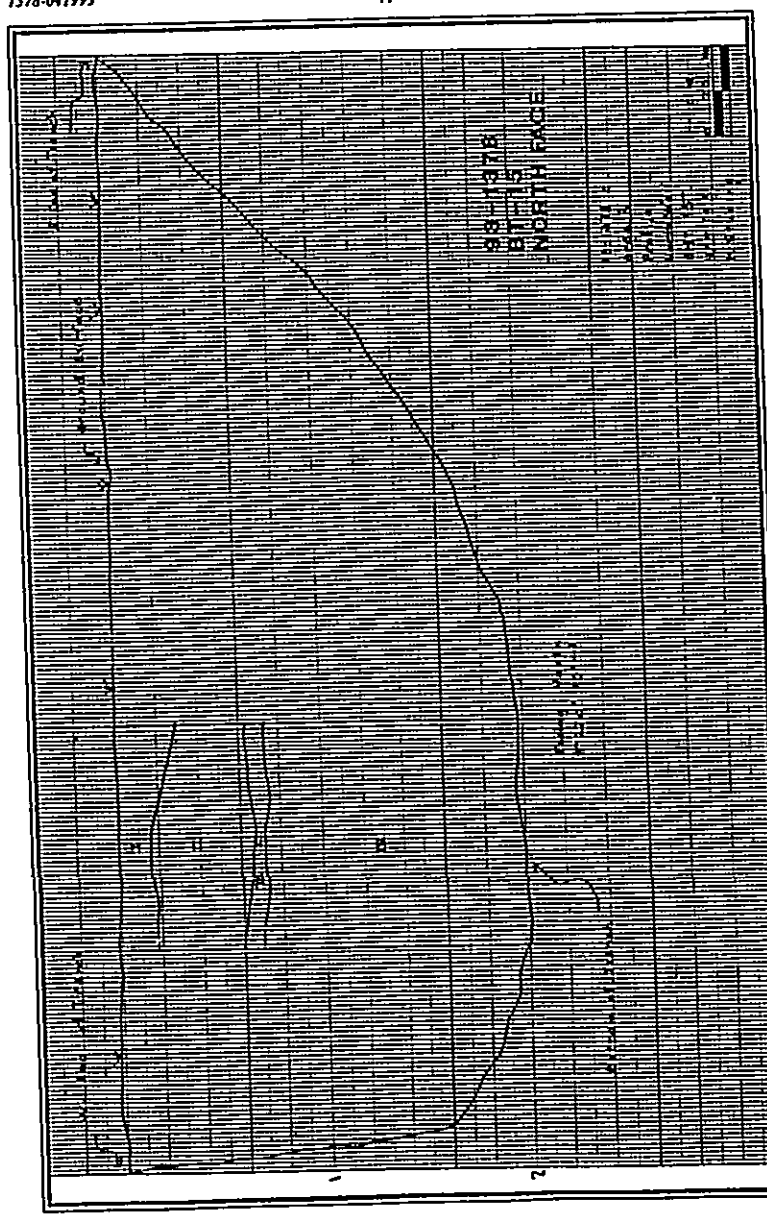












Appendix D

Traffic Impact Analysis Report

Parsons Brinckerhoff Quade & Douglas

FINAL
TRAFFIC ASSESSMENT
SHERATON MAUI HOTEL
RENOVATION

April 1993

Prepared for:
Helber Hastert and Fee, Planners

Prepared by:
Parsons Brinckerhoff Quade & Douglas, Inc.

TRAFFIC ASSESSMENT
SHERATON MAUI HOTEL RENOVATION
(April 1993)

The existing Sheraton Maui Hotel is located in the Kaanapali Beach Resort area on the west coast of the island of Maui, approximately three miles north of Lahaina (See Figure 1). The Kaanapali Beach Resort is a 1,200-acre master planned resort community that includes six hotels, six residential condominium projects, a shopping center/whaling museum, and two 18-hole golf courses.

The 510-guest room Sheraton Maui Hotel was the first to develop within the Kaanapali Beach Resort. It is situated on 23-acres of land located in the northern portion of the Kaanapali Beach Resort adjacent to the ocean.

The Kyo-ya Company, Ltd. propose to renovate the Sheraton Maui Hotel upgrading existing facilities to meet current federal, state, and county code requirements, as well as improving the aesthetic and functional aspects of the hotel. The renovation project will result in a net increase of one new 2,000 square foot Japanese restaurant that will only be open for dinner and approximately 18,000 square feet of new executive meeting facilities. This renovation project will also result in the property being brought into conformance with current County parking regulations, increasing the current parking stall count from 203 stalls to 600 stalls. No net change in the existing room count of 510 guest rooms is proposed.

This traffic assessment evaluates the potential traffic impact renovation of the Sheraton Maui Hotel would have on the surrounding roadway system.

EXISTING CONDITIONS

The project site is located at the northwestern terminus of Kaanapali Parkway within the Kaanapali Beach Resort area. Access to the project site is currently provided through two driveways located on the cul-de-sac at the northwestern terminus of Kaanapali Parkway.

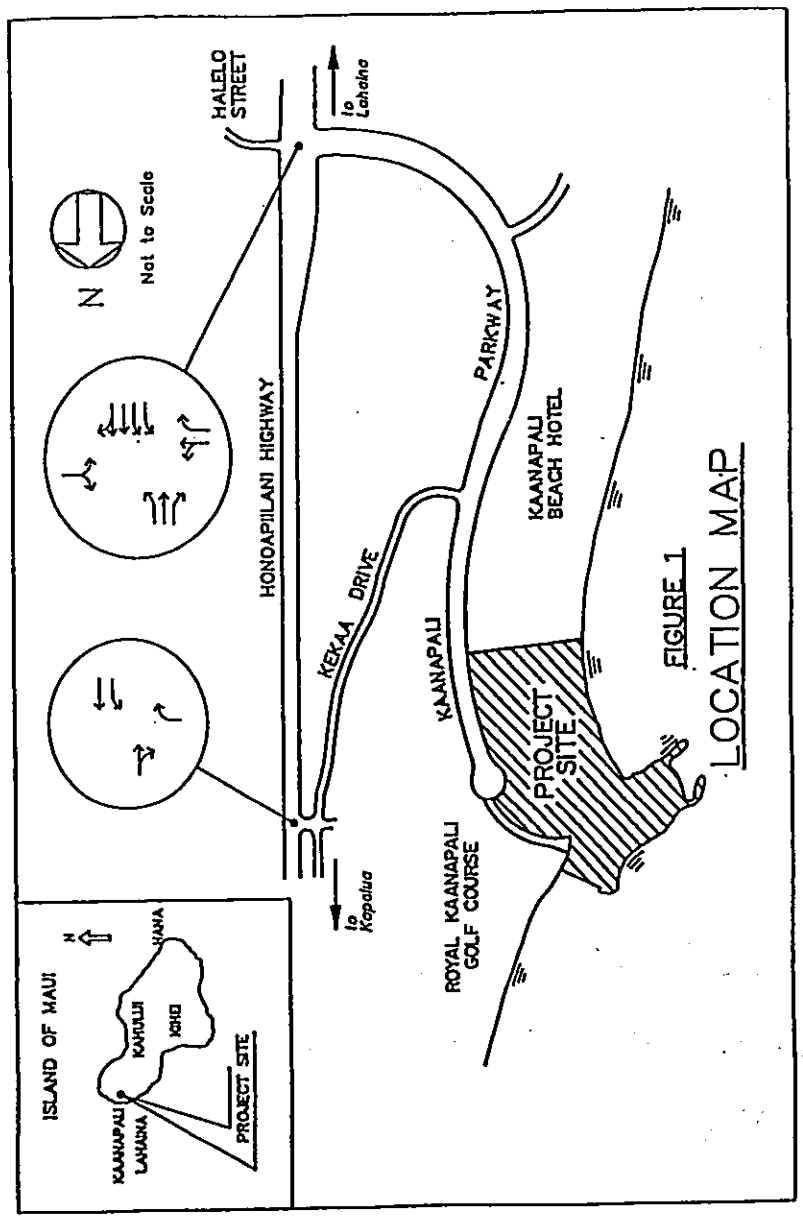


FIGURE 1
LOCATION MAP

Existing Roadways

Honoapiilani Highway is the primary link through Central Maui and around the southwestern coast of the island of Maui. It connects the Wailuku area in the northeast with Maalaea in the south, Lahaina in the southwest, and Kapalua/Napili in the northwest. Honoapiilani Highway is a two-lane highway with limited passing areas between Wailuku and Lahaina. From Lahainaluna Road to Kaanapali Parkway, Honoapiilani Highway widens to a four-lane highway with two through lanes provided in each direction. North of its intersection with Kaanapali Parkway, Honoapiilani Highway transitions from a four-lane roadway to a two-lane roadway with paved shoulders at its intersection with Kekaa Drive. Within the study area, the posted speed limit on Honoapiilani Highway is 35 miles per hour.

Kaanapali Parkway is a two-lane roadway with 28-foot wide lanes and a landscaped center median. It is the primary roadway through the Kaanapali Beach Resort area providing circulation and access to several hotels and other resort facilities. It is generally aligned in the northwest-southeast direction and has a posted speed limit of 25 miles per hour. On its southeastern terminus, Kaanapali Parkway intersects Honoapiilani Highway forming the western (makai) leg of a signalized cross intersection. East (mauka) of Honoapiilani Highway, Kaanapali Parkway continues as Halelo Street, a two-lane local roadway. Kaanapali Parkway terminates on its northwestern end in a cul-de-sac at the entrance to the Sheraton Maui Hotel.

Kekaa Drive serves as a secondary access to the Kaanapali Beach Resort area. It is a two-lane local roadway that is generally aligned in the northwest-southeast direction. On its northwestern (mauka) end, Kekaa Drive runs parallel to Honoapiilani Highway. A short connector road branches off Kekaa Drive forming the stop controlled stem of a T-intersection with Honoapiilani Highway. On its southeastern (makai) end, Kekaa Drive intersects Kaanapali Parkway forming the stop controlled stem of a T-intersection.

Existing Traffic Conditions

Peak hour turning movement counts, as presented in the Kaanapali Beach Hotel Expansion Project, Traffic Impact Report,[1] dated September 1990, were conducted at the intersection of Honoapiilani Highway and Kaanapali Parkway in July 1990. Forecast year 1993 traffic volumes presented in this report were based on an estimated average annual growth rate of 4.2 percent. This 4.2 percent average annual growth rate was derived from the Honoapiilani Highway: Puamana to Honokowai, Draft Environmental Impact Statement.[2] A review of peak hour traffic counts conducted by the State Department of Transportation (SDOT) and summarized in the 1991 Traffic Summary for the Island of Maui[3] on Honoapiilani Highway and on Kaanapali Parkway revealed a comparable average annual growth rate.

Intersection capacity was analyzed at the Honoapiilani Highway/Kaanapali Parkway intersection using the planning methodology outlined in the 1985 Highway Capacity Manual[4] (HCM) for signalized intersections. Analyses based on forecast 1993 traffic volumes that included traffic generated by the proposed Kaanapali Beach Hotel Expansion Project revealed that this intersection operates near-capacity during the a.m. peak hour and over-capacity during the p.m. peak hour.

Converting the dedicated southbound right-turn lane on Honoapiilani Highway into a shared through/right-turn lane, as recommended in the Kaanapali Beach Hotel Expansion Project, Traffic Impact Report, and widening the southern leg of Honoapiilani Highway to provide a free right-turn movement from eastbound Kaanapali Parkway to southbound Honoapiilani Highway will improve intersection operations to under-capacity conditions during the a.m. peak hour and to near-capacity conditions during the p.m. peak hour.

FUTURE TRAFFIC CONDITIONS

Renovation of the existing 510-room Sheraton Maui Hotel is proposed by the Kyo-ya Company, Ltd.. The proposed renovation project will result in a net increase of one 2,000 square foot Japanese restaurant, approximately 18,000 square feet of new executive meeting facilities, and no net change in the existing

510-room count. The renovation project will include upgrading existing facilities to meet current federal, state, and county code requirements, as well as improving the aesthetic and functional aspects of the hotel. The property will also be brought into conformance with current parking requirements, increasing the existing 203 parking stall count to 600 parking stalls. The proposed Sheraton Maui Renovation Project is anticipated to be complete by the future year 1995.

BASE YEAR 1995

Base year conditions (no-build) assumes that the Sheraton Maui Hotel would not be renovated. Development in the adjoining communities of Lahaina, Kapalua, and Napili would, however, generate additional traffic causing volumes on Honoapiilani Highway to increase. Base year 1995 traffic volumes at the Honoapiilani Highway/Kaanapali Parkway intersection were forecast from the 1990 turning movement counts by applying an average annual growth rate of 4.2 percent per year.

For base year 1995 conditions, with the existing roadway geometrics, traffic volumes at the Honoapiilani Highway/Kaanapali Parkway intersection would experience over-capacity operating conditions during both the a.m. and the p.m. peak hours. Modifying the dedicated southbound right-turn lane to a shared through/right-turn lane and widening Honoapiilani Highway to maintain the free eastbound right-turn movement from Kaanapali Parkway, as identified above, will increase capacity and improve intersection operations. With these improvements, the Honoapiilani Highway/Kaanapali Parkway intersection will experience under-capacity operating conditions during the a.m. peak hour. During the p.m. peak hour, however, this intersection will continue to experience over-capacity operating conditions.

FUTURE YEAR 1995 WITH PROJECT

The Future With Project section of this report contains information regarding future year traffic forecasts; generation, distribution, and assignment of project trips; and analysis of its effects on the surrounding roadway system at project build-out.

Trip Generation

Trip generation is the estimation of vehicular trips attracted or produced by the project. Trip generation rates published by the Institute of Transportation Engineers in the Trip Generation Manual, Fifth Edition[5] were used to estimate the volume of traffic generated by the one additional 2,000 square foot restaurant proposed for construction in the renovation project.

A free-standing 2,000 square foot quality restaurant is estimated to generate a total of 2 vehicle trips during the a.m. peak hour and 15 vehicle trips during the p.m. peak hour. Since this proposed restaurant will be within the hotel complex, a significant portion of the traffic generated is anticipated to be either internal to the hotel (pedestrian traffic) or internal to the Kaanapali Beach Resort area. Only 25 percent of the traffic generated was, therefore, assumed to be vehicular traffic that would enter or exit the Kaanapali Beach Resort area. The new 2,000 square foot Japanese restaurant is, therefore, estimated to generate 1 vehicular trips during the a.m. peak hour and 4 vehicular trips during the p.m. peak hour.

Due to the lack of statistical information on the trip generation characteristics of meeting rooms within resort hotels, the trip generation characteristics of the 18,000 square foot executive meeting space was based on information provided by the Sheraton Maui Hotel.

The Sheraton Maui Hotel anticipate a maximum daily attendance of 400 people and an average attendance of 200 people per weekday. This meeting area, which consists of 14,000 square feet of meeting space and a 4,000 square foot foyer, is anticipated to be used less than fifty percent of the time.

For analysis purposes, the maximum anticipated attendance of 400 people was used to derive the trip generation potential of the additional meeting facilities. This analysis , therefore, represents a worst case scenario.

The majority of the people attending meetings are anticipated to stay at the Sheraton Maui Hotel. Others may also stay at adjoining hotels within the Kaanapali Beach Resort area. For analysis purposes, it was assumed that 90

percent of the traffic generated by the additional meeting facilities would be internal to the Sheraton Maui Hotel or internal to the Kaanapali Beach Resort area. The remaining ten percent of the traffic generated by the 18,000 square foot meeting facilities are, therefore, estimated to generate 40 vehicular trips during both the a.m. and the p.m. peak hours. The total net increase in traffic estimated to be generated by the proposed renovation project is summarized in Table 1.

TABLE 1
TRIP GENERATION SUMMARY

	AM PEAK		PM PEAK	
	Enter	Exit	Enter	Exit
Quality Restaurant	1	0	3	1
Executive Meeting Facility	36	4	4	38
Total	37	4	7	37

Trip Distribution

Trip distribution estimates the origins and destinations of the project generated traffic. Project generated trips were distributed in two directions: north towards Kapalua/Napili and south towards Lahaina. Trip distribution factors used for this project are summarized in Table 2. These trip distribution factors were based on the location of population and employment centers in the surrounding area and on the existing traffic distribution patterns observed at the Honoapiilani Highway/Kaanapali Parkway intersection.

TABLE 2
TRIP DISTRIBUTION

	AM PEAK		PM PEAK	
Destination	Enter	Exit	Enter	Exit
Kapalua/Napili	33%	19%	38%	25%
Lahaina	67%	81%	62%	75%
Total	100%	100%	100%	100%

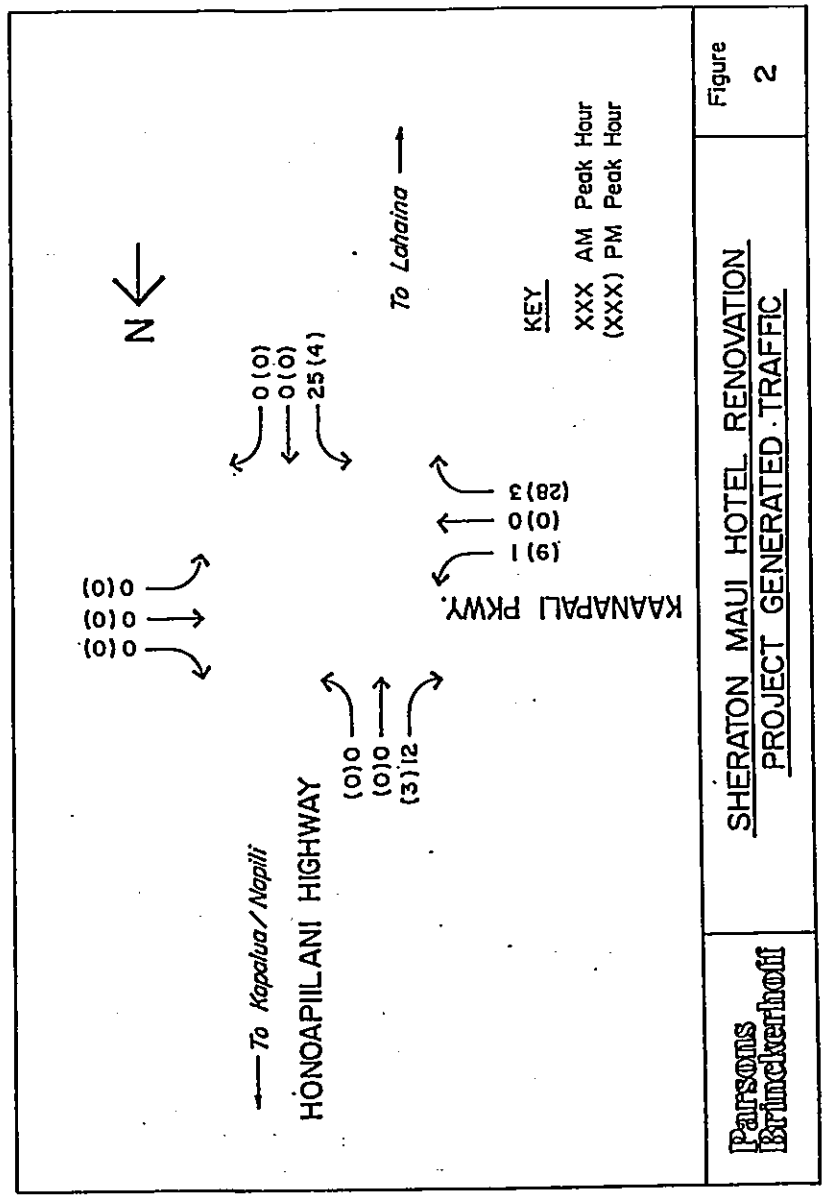
Trip Assignment

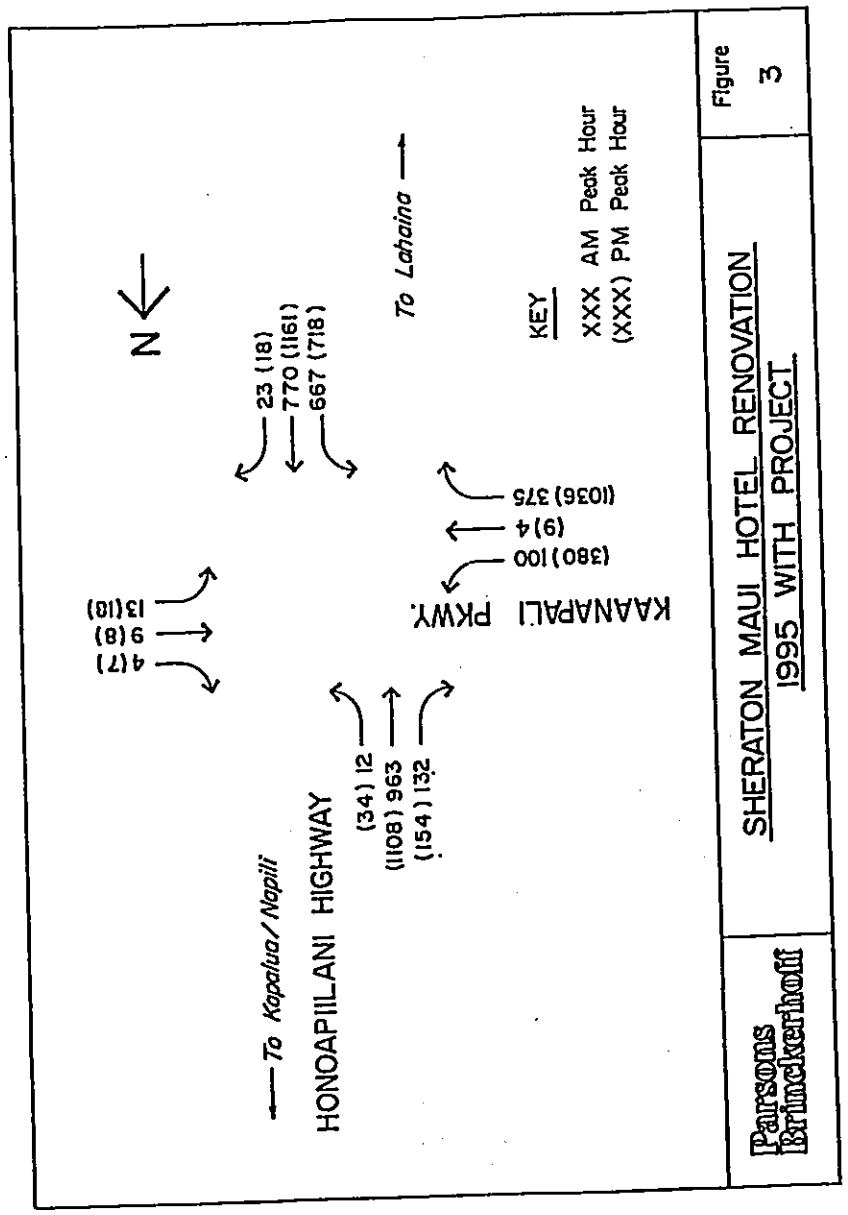
Traffic generated by the proposed renovation project was assigned onto the existing circulation system using distribution factors presented in Table 2. Project generated traffic, as shown in Figure 2, was assigned onto Kaanapali Parkway and to the Honoapiilani Highway/Kaanapali Parkway intersection since it is the primary point of access to the Kaanapali Beach Resort area. The 1995 With Project traffic volumes are shown on Figure 3.

Project Impacts

The proposed renovation project is forecast to generate 41 additional vehicle trips during the a.m. peak hour and 44 vehicle trips during the p.m. peak hour. The impact of these additional vehicle trips to the surrounding roadway system was assessed by re-evaluating operations at the Honoapiilani Highway/Kaanapali Parkway intersection during the a.m. and the p.m. peak hours.

Analysis reveals that the existing Honoapiilani Highway/Kaanapali Parkway intersection would continue to experience over-capacity operating conditions during both the a.m. and the p.m. peak hours. With the intersection improvements identified previously, this intersection would operate under-capacity during the a.m. peak hour. During the p.m. peak hour, however, this intersection would continue to experience over-capacity operating conditions.





SUMMARY AND CONCLUSIONS

The Honoapiilani Highway/Kaanapali Parkway intersection currently experiences near capacity operating conditions during the a.m. peak hour and over-capacity operating conditions during the p.m. peak hour. Intersection improvements are, therefore, already needed to increase capacity and reduce existing congestion. Converting the dedicated southbound right-turn lane to a shared through/right-turn lane and widening the southern leg of Honoapiilani Highway to maintain the free right-turn movement from eastbound Kaanapali Parkway to southbound Honoapiilani Highway will increase capacity and improve intersection operations. Even with these improvements, however, over-capacity operating conditions are anticipated during the p.m. peak hour in 1995 without or with the renovation project.

The State Department of Transportation propose to construct a new road that bypasses the town of Lahaina on an eastern (mauka) alignment as a long-term solution to relieve capacity constraints within this corridor. This Lahaina By-Pass Road will provide an alternative route around the town of Lahaina between the Kapalua/Napili areas and areas south of Lahaina. A significant diversion of traffic volumes off Honoapiilani Highway is anticipated with the completion of this new facility. This anticipated diversion of traffic off Honoapiilani Highway and onto the Lahaina By-Pass Road will significantly improve operating conditions at the Honoapiilani Highway/Kaanapali Parkway intersection by reducing the volume of through traffic on Honoapiilani Highway that passes through this intersection.

The Sheraton Maui Hotel Renovation project will result in only a nominal increase in traffic volumes through the Honoapiilani Highway/Kaanapali Parkway intersection. Traffic generated by the renovation project is anticipated to increase 1995 traffic volumes through the Honoapiilani Highway/Kaanapali Parkway intersection by two percent or less during both the a.m. and the p.m. peak hours.

The additional 2,000 square foot restaurant and 18,000 square feet of executive meeting facilities proposed for construction with the renovation project are forecast to generate an additional 41 vehicle trips during the a.m. peak hour

and 44 vehicle trips during the p.m. peak hour. These additional vehicular trips result in an increase in overall traffic volumes of two percent or less on Honoapiilani Highway and less than five percent on Kaanapali Parkway during both the a.m. and p.m. peak hours in the future year 1995.

Because the additional facilities proposed for construction with the renovation project have only a nominal trip generation potential and because intersection improvements at the Honoapiilani Highway/Kaanapali Parkway intersection are required without or with the project, no mitigation measures are recommended with the proposed Sheraton Maui Renovation Project. Improved traffic operations are anticipated at the Honoapiilani Highway/Kaanapali Parkway intersection with the construction of the Lahaina By-Pass Road.

REFERENCES

1. Parsons Brinckerhoff Quade & Douglas, Inc.; Kaanapali Beach Hotel Expansion Project, Traffic Impact Report; September 1990.

2. State of Hawaii, Department of Transportation, Highways Division, Honoapiilani Highway: Puamana to Honokowai, Draft Environmental Impact Statement, 1988.

3. State of Hawaii, Department of Transportation, Highways Division, Planning Branch; 1991 Traffic Summary for the Island of Maui; August 1991.

4. National Research Council, Transportation Research Board Special Report 209, Highway Capacity Manual, Washington, D.C., 1985.

5. Institute of Transportation Engineers, Trip Generation, Fifth Edition, Washington, D.C., 1990.

APPENDIX

APPENDIX A

INFORMATION FROM THE
KAANAPALI BEACH HOTEL EXPANSION
TRAFFIC IMPACT REPORT

FIGURE 2

EXISTING 1990 TRAFFIC VOLUMES

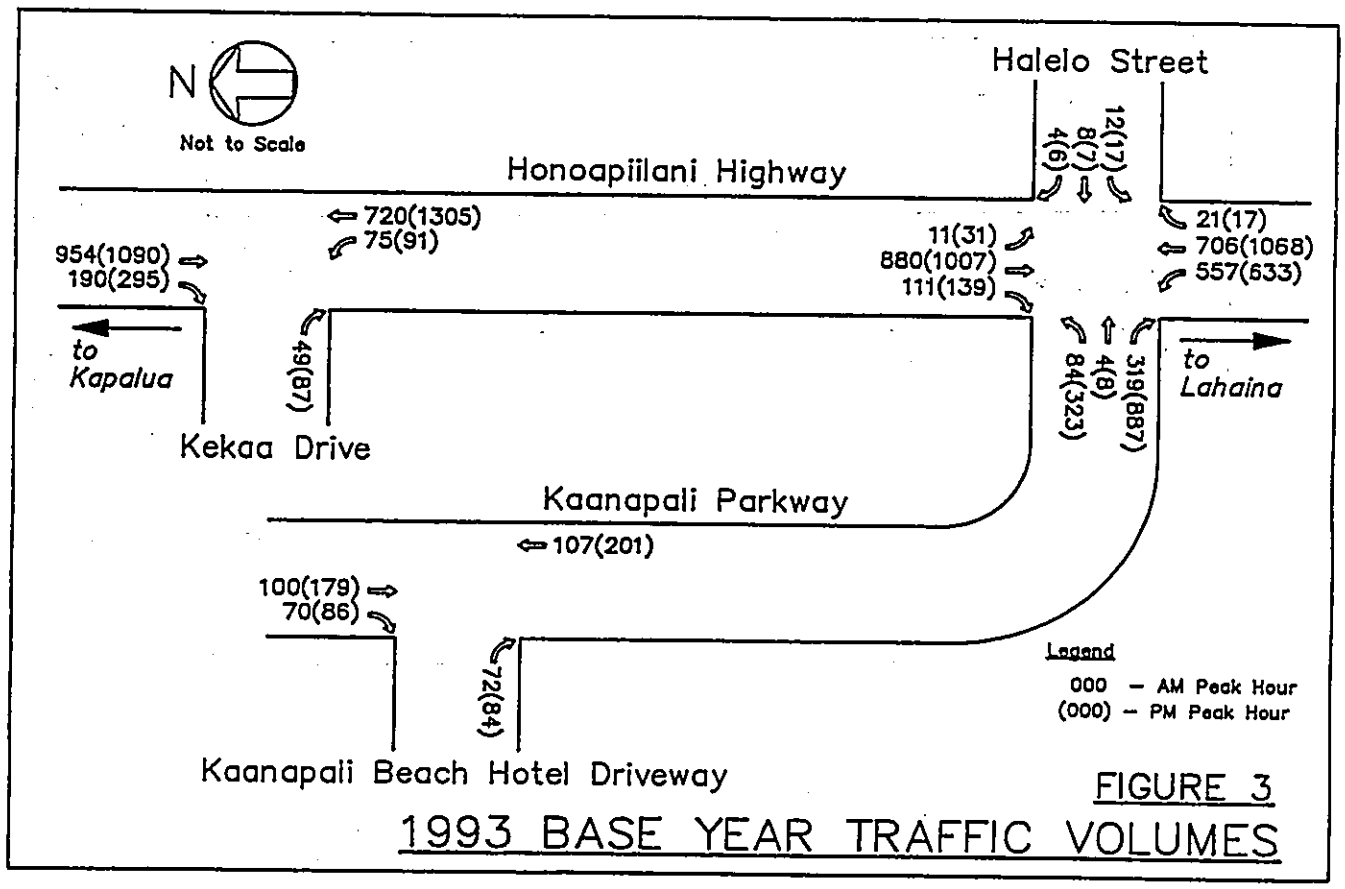


FIGURE 3

1993 BASE YEAR TRAFFIC VOLUMES

NAME: Kaanapali Beach Hotel
LOCATION: Honoapiilani Hwy/Kaanapali Pkwy/Halelo St
DATE: July 24, 1990
By: KKN and SL

File name: HHKP_AM

COUNT READINGS

TIME	A	B	C	D	E	F	J	H	G	M	L	K
6:30-6:45 AM	16	109	0	1	3	1	94	183	3	10	1	59
-7:00	27	225	5	3	4	2	168	354	4	26	1	105
-7:15	41	344	7	3	5	4	271	496	7	44	2	172
-7:30	63	486	9	6	6	5	373	615	8	62	2	230
-7:45	82	658	11	7	9	5	531	782	13	77	3	294
-8:00	111	827	13	8	11	7	646	950	18	97	4	350
-8:15	135	1033	18	9	12	11	755	1093	24	124	6	442
-8:30	163	1271	19	10	13	16	864	1220	27	138	6	510
-8:45	182	1412	21	10	14	17	951	1336	32	183	6	592
-9:00	201	1589	23	12	14	18	1023	1458	46	206	7	665
-9:15	218	1762	27	12	15	20	1092	1561	49	226	7	750
-9:30 AM	240	1987	30	15	16	21	1150	1694	49	266	8	840

COUNT VOLUMES

TIME	A	B	C	D	E	F	J	H	G	M	L	K	TOTAL	TOT4
6:30-6:45 AM	16	109	0	1	3	1	94	183	3	10	1	59	480	
-7:00	11	116	5	2	1	1	74	171	1	16	0	46	444	
-7:15	14	119	2	0	1	2	103	142	3	18	1	67	472	
-7:30	22	142	2	3	1	1	102	119	1	18	0	58	469	1865
-7:45	19	172	2	1	3	0	158	167	5	15	1	64	607	1892
-8:00	29	169	2	1	2	2	115	168	5	20	1	56	570	2118
-8:15	24	206	5	1	1	4	109	143	6	27	2	92	620	2266
-8:30	28	238	1	1	1	6	109	127	3	14	0	68	595	2392
-8:45	19	141	2	0	1	1	87	116	5	45	0	82	499	2284
-9:00	19	177	2	2	0	1	72	122	14	23	1	73	506	2220
-9:15	17	173	4	0	1	2	69	103	3	20	0	85	477	2077
-9:30 AM	22	225	3	3	1	1	58	133	0	40	1	90	577	2059
6:30-8:30 TOTAL	240	1987	30	15	16	21	1150	1694	49	266	8	840	6316	

7:30-8:30 HOUR	100	785	10	4	7	11	491	605	19	78	4	280	2392

APPROACH/DEPARTURE VOLUMES

	ABC	DEF	GHJ	KLM	AEJ	BFK	CGL	DHM
6:30-6:45 AM	125	5	280	70	113	169	4	194
-7:00	132	4	246	62	86	163	6	189
-7:15	135	3	248	86	118	188	6	160
-7:30	156	5	222	76	125	201	3	140
-7:45	193	4	330	80	160	236	8	183
-8:00	200	5	288	77	146	227	8	189
-8:15	235	6	258	121	134	302	13	171
-8:30	267	7	239	82	138	311	4	142
-8:45	162	2	206	127	107	224	7	161
-9:00	198	3	208	97	91	251	17	147
-9:15	194	3	175	105	87	260	7	123
-9:30 AM	250	5	191	131	81	316	4	176
6:30-9:30 TOTAL	2257	52	2893	1114	1400	2848	87	1975

7:30-8:30 HOUR	895	22	1115	360	538	1078	33	685

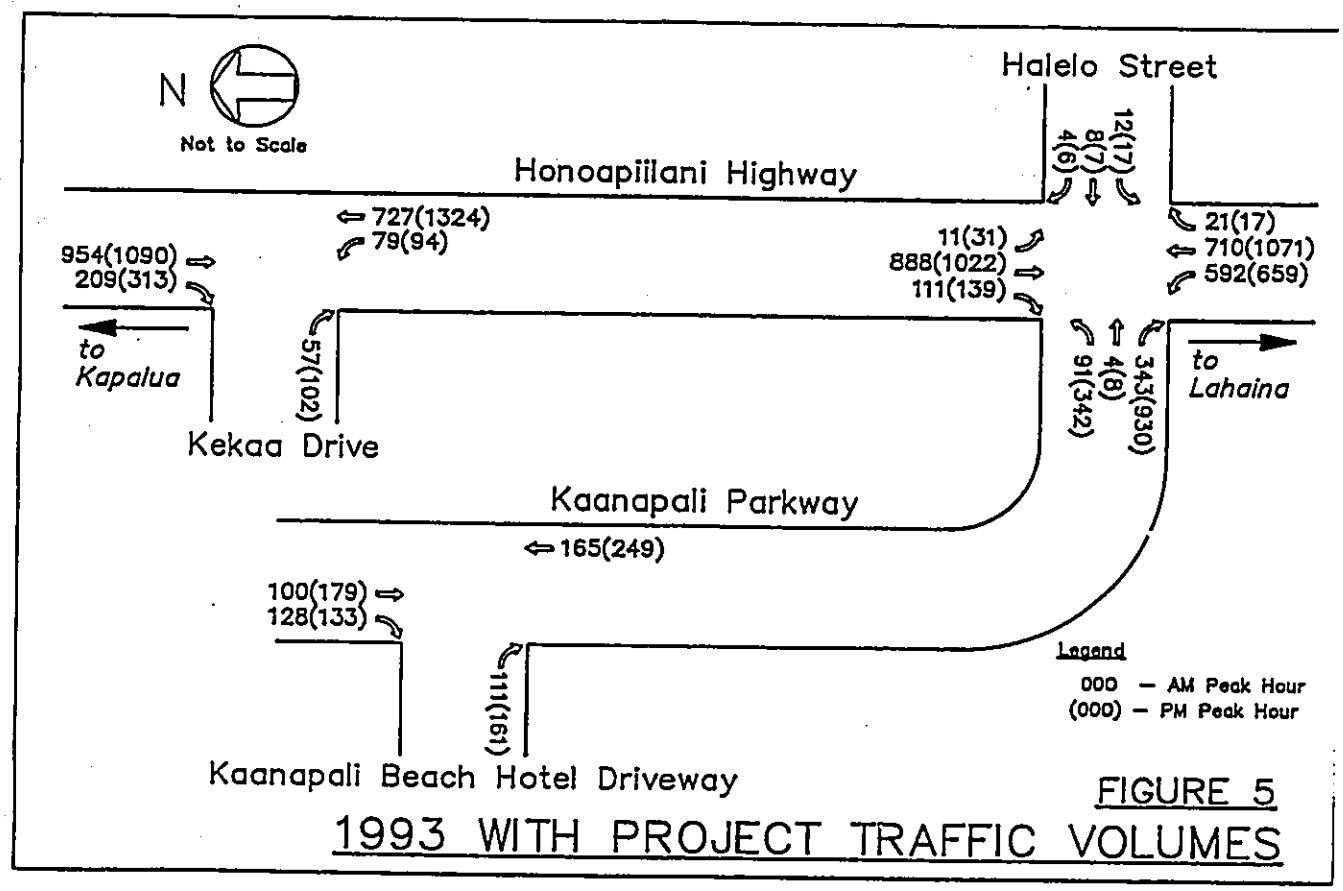


FIGURE 5

1993 WITH PROJECT TRAFFIC VOLUMES

NAME: Kaanapali Beach Hotel
LOCATION: Honoapiilani Hwy/Kaanapali Pkwy/Halelo St
DATE: July 24, 1990
By: KKN and SL

File name: HHKP_PM

COUNT READINGS

TIME	A	B	C	D	E	F	J	H	G	M	L	K
3:00-3:15 PM	27	193	3	2	0	4	113	192	3	75	1	157
-3:30	54	368	4	4	2	4	212	367	6	134	3	271
-3:45	86	582	12	6	4	6	362	620	12	207	4	415
-4:00	119	805	16	7	5	13	509	843	15	281	5	581
-4:15	139	996	24	8	8	16	650	1064	15	364	7	849
-4:30	179	1237	32	9	8	19	771	1308	21	425	10	1049
-4:45	222	1425	33	11	8	22	888	1500	22	467	11	1187
-5:00	264	1606	35	14	10	22	1014	1707	24	518	14	1311
-5:15	304	1805	38	15	11	24	1121	1918	26	594	16	1470
-5:30	340	1985	42	15	12	26	1253	2138	26	654	16	1629
-5:45	377	2190	43	17	12	28	1370	2358	29	704	18	1752
-6:00 PM	424	2342	51	19	13	30	1479	2524	29	744	20	1864

COUNT VOLUMES

TIME	A	B	C	D	E	F	J	H	G	M	L	K
3:00-3:15 PM	27	193	3	2	0	4	113	192	3	75	1	157
-3:30	27	175	1	2	2	0	99	175	3	59	2	114
-3:45	32	214	8	2	2	2	150	253	6	73	1	144
-4:00	33	223	4	1	1	7	147	223	3	74	1	166
-4:15	20	191	8	1	3	5	141	241	0	83	2	268
-4:30	40	241	8	1	0	1	121	224	6	61	3	200
-4:45	43	188	1	2	0	3	117	192	1	42	1	138
-5:00	42	181	2	3	2	0	126	207	2	51	3	124
-5:15	40	199	3	1	1	2	107	211	2	76	2	159
-5:30	36	180	4	0	1	2	132	220	0	60	0	159
-5:45	37	205	1	2	0	2	117	220	3	50	2	123
-6:00 PM	47	152	6	2	1	2	109	168	0	40	2	112
3:00-6:00 TOTAL	424	2342	51	19	13	30	1479	2524	29	744	20	1864
3:30-4:30 HOUR	125	869	28	5	6	15	559	941	15	291	7	778

TOTAL	TOT4
770	
659	
887	3195
883	3392
963	3639
906	
728	3480
743	3340
803	3180
794	3068
762	3102
641	3000
9539	

3639

APPROACH/DEPARTURE VOLUMES

	ABC	DEF	GHJ	KLM		AEJ	BFK	CGL	DHM
3:00-3:15 PM	223	6	308	233		140	354	7	269
-3:30	203	4	277	175		128	289	6	236
-3:45	254	6	409	218		184	360	15	328
-4:00	260	9	373	241		181	396	6	298
-4:15	219	9	382	353		164	464	10	325
-4:30	289	2	351	264		161	442	17	286
-4:45	232	5	310	181		160	329	3	236
-5:00	225	5	335	178		170	305	7	261
-5:15	242	4	320	237		148	360	7	288
-5:30	220	3	352	219		159	341	4	260
-5:45	243	4	340	175		154	330	6	272
-6:00 PM	207	5	275	154		157	268	10	208
3:00-6:00 TOTAL	2817	62	4032	2628		1916	4236	100	3287
3:30-4:30 HOUR	1022	26	1515	1078		690	1662	50	1237

NAME: Kaanapali Beach Hotel
LOCATION: Honoapiilani Highway/Kekaa Drive
DATE: July 25, 1990
By: PF

File name: HHKD_AM

COUNT READINGS

TIME	A	B	J	H	M	K
6:30-6:45 AM	11	102	16	155	0	6
-7:00	29	226	35	349	0	19
-7:15	46	357	45	486	0	23
-7:30	75	512	59	630	1	32
-7:45	113	663	78	783	1	43
-8:00	163	878	100	968	1	49
-8:15	199	1096	111	1116	1	60
-8:30	236	1314	121	1272	1	72
-8:45	273	1502	129	1402	3	86
-9:00	305	1705	135	1582	3	93
-9:15	338	1893	143	1711	5	108
-9:30	369	2124	153	1868	6	127

COUNT VOLUMES

TIME	A	B	J	H	M	K
6:30-6:45 AM	11	102	16	155	0	6
-7:00	18	124	19	194	0	13
-7:15	17	131	10	137	0	4
-7:30	29	155	14	144	1	9
-7:45	38	171	19	153	0	11
-8:00	50	195	22	185	0	6
-8:15	36	218	11	148	0	11
-8:30	37	218	10	156	0	12
-8:45	37	188	8	130	2	14
-9:00	32	203	6	180	0	7
-9:15	33	188	8	129	2	15
-9:30	31	231	10	157	1	19
6:30-9:30 TOTAL	369	2124	153	1868	6	127
7:30-8:30 HOUR	161	802	62	642	0	40

TOTAL	TOT4	
290		6:30-6:45 AM
368		-7:00
299		-7:15
352	1309	-7:30
362	1411	-7:45
458	1501	-8:00
424	1626	-8:15
433	1707	-8:30
379	1694	-8:45
428	1664	-9:00
375	1615	-9:15
449	1631	-9:30
4647		

1707

APPROACH / DEPARTURE

TIME	AB	JH	MK	AJ	BK	HM
6:30-6:45 AM	113	171	6	27	108	155
-7:00	142	213	13	37	137	194
-7:15	148	147	4	27	135	137
-7:30	184	158	10	43	154	145
-7:45	209	172	11	57	182	153
-8:00	245	207	6	72	201	185
-8:15	254	159	11	47	229	148
-8:30	255	166	12	47	230	156
-8:45	225	138	18	45	202	132
-9:00	235	186	7	38	210	180
-9:15	221	137	17	41	203	131
-9:30	262	157	20	41	250	158
6:30-9:30 TOTAL	2493	2021	133	522	2251	1874
7:30-8:30 HOUR	963	704	40	223	842	642

NAME: Kaanapali Beach Hotel
LOCATION: Honoapiilani Highway/Kekaa Drive
DATE: July 24, 1990
By: PF

File name: HHKD_PM

COUNT READINGS

TIME	A	B	J	H	M	K
3:00-3:15 PM	44	230	17	248	0	19
-3:30	87	447	30	495	0	29
-3:45	135	690	54	771	1	41
-4:00	181	896	65	1028	3	57
-4:15	240	1018	82	1307	5	81
-4:30	318	1268	97	1540	6	96
-4:45	390	1483	104	1783	8	116
-5:00	443	1661	116	2018	9	134
-5:15	486	1857	133	2289	9	157
-5:30	524	2058	150	2537	9	171
-5:45	555	2271	169	2775	9	186
-6:00 PM	586	2454	181	2990	9	203

COUNT VOLUMES

TIME	A	B	J	H	M	K	TOTAL	TOT4	
3:00-3:15 PM	44	230	17	248	0	19	558		3:00-3:15 PM
-3:30	43	217	13	247	0	10	530		-3:30
-3:45	48	243	24	276	1	12	604	2175	-3:45
-4:00	48	206	11	257	2	16	538	2230	-4:00
-4:15	59	122	17	279	2	24	503	2175	-4:15
-4:30	78	250	15	233	3	15	594	2239	-4:30
-4:45	72	215	7	243	0	20	557	2192	-4:45
-5:00	53	178	12	235	1	18	497	2151	-5:00
-5:15	43	196	17	271	0	23	550	2198	-5:15
-5:30	38	199	17	248	0	14	516	2120	-5:30
-5:45	31	215	19	238	0	15	518	2081	-5:45
-6:00 PM	31	183	12	215	0	17	458	2042	-6:00 PM
3:00-6:00 TOTAL	586	2454	181	2990	9	203	6423		
3:30-4:30 HOUR	231	821	67	1045	8	67	2239		

APPROACH / DEPARTURE

TIME	AB	JH	MK	AJ	BK	HM
3:00-3:15 PM	274	265	19	61	249	248
-3:30	260	260	10	56	227	247
-3:45	291	300	13	72	255	277
-4:00	252	268	18	57	222	259
-4:15	181	296	26	76	148	281
-4:30	326	248	18	93	265	236
-4:45	287	250	20	79	235	243
-5:00	231	247	19	65	196	236
-5:15	239	288	23	60	219	271
-5:30	237	265	14	55	213	248
-5:45	246	257	15	50	230	238
-6:00 PM	214	227	17	43	200	215
3:00-6:00 TOTAL	3040	3171	212	767	2657	2999
3:30-4:30 HOUR	1052	1112	75	298	888	1053

NAME: Kaanapali Beach Hotel
LOCATION: Kaanapali Parkway/Kaanapali Beach Hotel Driveway
DATE: July 25, 1990
By: JAT

File name: KPK

COUNT READINGS

TIME	A	B	J	H	M	K
6:30-6:45 AM	7	14		9		8
-7:00	18	29		24		24
-7:15	24	45		39		34
-7:30	39	65		53		43
-7:45	53	81		70		55
-8:00	74	103		94		70
-8:15	86	131		117		88
-8:30	99	148		140		102
-8:45	115	169		155		119
-9:00	120	192		175		133
-9:15	131	217		201		146
-9:30	139	233		220		156

COUNT VOLUMES

TIME	A	B	J	H	M	K	TOTAL	TOT4	
6:30-6:45 AM	7	14	0	9	0	8	38		6:30-6:45 AM
-7:00	11	15	0	15	0	16	57		-7:00
-7:15	6	16	0	15	0	10	47		-7:15
-7:30	15	20	0	14	0	9	58	200	-7:30
-7:45	14	16	0	17	0	12	59	221	-7:45
-8:00	21	22	0	24	0	15	82	246	-8:00
-8:15	12	28	0	23	0	18	81	280	-8:15
-8:30	13	17	0	23	0	14	67	289	-8:30
-8:45	16	21	0	25	0	17	79	309	-8:45
-9:00	5	23	0	10	0	14	52	279	-9:00
-9:15	11	25	0	26	0	13	75	273	-9:15
-9:30	8	16	0	19	0	10	53	259	-9:30
6:30-9:30 TOTAL	139	233	0	220	0	156	748		
7:45-8:45 HOUR	62	88	0	95	0	64	309		

APPROACH / DEPARTURE

TIME	AB	JH	MK		AJ	BK	HM
6:30-6:45 AM	21	9	8		7	22	9
-7:00	26	15	16		11	31	15
-7:15	22	15	10		6	26	15
-7:30	35	14	9		15	29	14
-7:45	30	17	12		14	28	17
-8:00	43	24	15		21	37	24
-8:15	40	23	18		12	46	23
-8:30	30	23	14		13	31	23
-8:45	37	25	17		16	36	25
-9:00	28	10	14		5	37	10
-9:15	36	26	13		11	38	26
-9:30	24	19	10		8	28	19
6:30-9:30 TOTAL	372	220	156		139	389	220
7:45-8:45 HOUR	131	84	58		45	144	84

NAME: Kaanapali Beach Hotel
LOCATION: Kaanapali Parkway/Kaanapali Beach Hotel Driveway
DATE: July 24, 1990
By: JAT

File name: KPKBD_PM

COUNT READINGS

TIME	A	B	J	H	M	K
3:00-3:15 PM	16	43		46		17
-3:30	36	79		74		25
-3:45	50	119		115		35
-4:00	78	154		144		49
-4:15	98	206		184		75
-4:30	117	246		228		91
-4:45	140	283		270		109
-5:00	153	315		323		124
-5:15	171	359		364		150
-5:30	*189*	*405*		*402*		*170*
-5:45	208	448		430		188
-6:00 PM	229	475		455		204

COUNT VOLUMES

TIME	A	B	J	H	M	K	TOTAL	TOT4	
3:00-3:15 PM	16	43	0	46	0	17	122		3:00-3:15 PM
-3:30	20	36	0	28	0	8	92		-3:30
-3:45	14	40	0	41	0	10	105		-3:45
-4:00	28	35	0	29	0	14	104	423	-4:00
-4:15	22	52	0	40	0	26	140	441	-4:15
-4:30	19	40	0	44	0	16	119	469	-4:30
-4:45	23	37	0	42	0	18	120	483	-4:45
-5:00	13	32	0	53	0	15	113	492	-5:00
-5:15	18	44	0	41	0	26	129	481	-5:15
-5:30	18	46	0	38	0	20	122	484	-5:30
-5:45	19	41	0	28	0	16	104	468	-5:45
-6:00 PM	21	29	0	25	0	18	93	448	-6:00 PM
3:00-6:00 TOTAL	229	475	0	455	0	204	1363		
4:00-5:00 HOUR	77	161	0	179	0	75	492		

APPROACH / DEPARTURE

TIME	AB	JH	MK		AJ	BK	HM
3:00-3:15 PM	59	46	17		16	60	46
-3:30	56	28	8		20	44	28
-3:45	54	41	10		14	50	41
-4:00	61	29	14		28	49	29
-4:15	74	40	26		22	78	40
-4:30	59	44	16		19	56	44
-4:45	60	42	18		23	55	42
-5:00	45	53	15		13	47	53
-5:15	62	41	26		18	70	41
-5:30	64	38	20		18	66	38
-5:45	60	28	16		19	57	28
-6:00 PM	50	25	18		21	47	25
3:00-6:00 TOTAL	704	455	204		229	679	455
4:00-5:00 HOUR	238	179	75		77	236	179

APPENDIX B

LEVEL OF SERVICE DESCRIPTIONS

LEVEL OF SERVICE DESCRIPTIONS

The Highway Capacity Manual defines six Levels of Service, labelled A through F, from best to worst conditions. Levels of Service for signalized and unsignalized intersections are defined in terms of average user delays. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

Unsignalized Intersections

For unsignalized intersections, the Highway Capacity Manual evaluates gaps in the major street traffic flow and calculates available gaps for left turns across oncoming traffic and for the left and right turns onto the major roadway from the minor street.

LEVEL OF SERVICE A: Little or no delay.
LEVEL OF SERVICE B: Short traffic delays.
LEVEL OF SERVICE C: Average traffic delays.
LEVEL OF SERVICE D: Long traffic delays.
LEVEL OF SERVICE E: Very long traffic delays.
LEVEL OF SERVICE F: Demand volume exceeds capacity, resulting in extreme delays with queuing that may cause severe congestion and affect other movements at the intersection.

Signalized Intersections

For signalized intersections, the Operational Analysis measures signal operations by two separate indicators, volume-to-capacity ratios (v/c) and Level of Service. The v/c ratios provide a comparison of the traffic demands to the theoretical capacity of the intersection while Levels of Service are determined from the estimated delay. These two indicators do not necessarily correlate to each other.

LEVEL OF SERVICE A: This level describes operation with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

LEVEL OF SERVICE B: This level describes operation with delays in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than at Level of Service A, causing higher delays.

LEVEL OF SERVICE C: This level describes operations with delays in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or cycle lengths. Individual cycle failures (queued vehicles do not clear in one cycle) may begin to appear as the number of vehicles stopping is significant; many vehicles, however, still pass through the intersection without stopping.

LEVEL OF SERVICE D: This level describes operations with delays in the range of 25.1 to 40.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from a combination of unfavorable congestion, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LEVEL OF SERVICE E: This level describes operation with delays in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

LEVEL OF SERVICE F: This level describes operation with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle length may also be major contributing causes to such delay levels.

Multilane Highways

For multilane highways, the Highway Capacity Manual defines Level of Service in terms of density. Density is a measure which quantifies the proximity to other vehicles in the traffic stream. It expresses the degree of maneuverability within the traffic stream.

LEVEL OF SERVICE A: This level describes completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and driver preferences. Minor disruptions to flow are easily absorbed at this level without causing significant delays or queuing.

LEVEL OF SERVICE B: This level is also indicative of free flow, although the presence of other vehicles begins to be noticeable. Minor disruptions are still easily absorbed at this level, although local deterioration in Level of Service will be more obvious.

LEVEL OF SERVICE C: This level represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream, and to select an operating speed, is now clearly affected by the presence of other vehicles. Minor disruptions may be expected to cause serious local deterioration in service, and queues may form behind any significant traffic disruption. Severe or long-term disruptions may cause the facility to operate at Level of Service F.

LEVEL OF SERVICE D: This level borders on unstable-flow. Speeds and ability to maneuver are severely restricted because of traffic congestion. Only the most minor of disruptions can be absorbed without the formation of extensive queues and the deterioration of service to Level of Service F.

LEVEL OF SERVICE E: This level represents operations at or near capacity, and is quite unstable. Disruptions cannot be damped or dissipated, and any disruption, no matter how minor, will cause queues to form and service to deteriorate to Level of Service F.

LEVEL OF SERVICE F: This level represents forced or breakdown flow. It occurs at a point where vehicles arrive either at a rate greater than that at which they are discharged or at a point on a planned facility where forecasted demand exceeds the computed capacity.

Appendix E

Preliminary Engineering Report

Austin Tsutsumi & Associates

Preliminary Engineering Report

for the

Sheraton Maui Hotel Redevelopment

Kaanapali, Maui, Hawaii
TMK: 4-4-08 : 4, 5 and 6

Prepared for:

KYOYA COMPANY LTD.
Kokusai Kogyo Group

By:

Austin, Tsutsumi & Associates, Inc.
Engineers * Surveyors
May 1993

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

TABLE OF CONTENTS

AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS
CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

TED S. KAWAHIGASHI, P.E.
GEORGE M. NEUFFER, P.E.
KENNETH K. KUROKAWA, P.E.
THOMAS S. OTAGURO
IVAN K. NAKATSUKA, P.E.

KEN K. KUROKAWA, P.E.
Vice President &
Maui Branch Office Manager

Preliminary Engineering Report

for the

Sheraton Maui Hotel Redevelopment

Kaanapali, Maui Hawaii

I. INTRODUCTION

The purpose of this report is to evaluate the existing and proposed drainage, water and sewer system for the redevelopment of the Sheraton Maui.

II. PROPOSED PROJECT

A. Location

The Sheraton Maui Hotel is located in the Kaanapali Beach Resort area along the Kaanapali Coast of Maui. The hotel site is located at the cul-de-sac of Kaanapali Parkway and is bounded on the south by Kaanapali Beach Hotel and on the north and west by the Pacific Ocean. It is identified by Tax Map Key: 4-4-08 : 4, 5 and 6 in Kaanapali, Maui, Hawaii.

B. Project Description

Existing Hotel

The Sheraton Maui consists of several multi-story buildings and 26 cottages with a total of 510 guest rooms. The Molokai Wing and Discovery Room are located on the northern boundary of the hotel and is adjacent to the Black Rock. The Cliff Tower adjoins the Discovery Room. The Garden Tower adjoins the Cliff Tower by way of the Promenade Deck. The main lobby fronts the porte-cochere and is adjacent to the Garden Tower. Twelve cottages are located on the south side of the hotel and the remaining fourteen cottages encompass the Garden Tower. Two paved parking areas, two swimming pools, a service yard and a luau area also occupy the 23.29 acre hotel site. Refer to Exhibit 3.

REPLY TO:
1871 WILI PA LOOP, SUITE A
WAILUKU, MAUI, HAWAII 96793 • PHONE (808) 244-8044 • FAX NO. 242-9163

OFFICES IN:
HONOLULU, HAWAII
WAILUKU, MAUI, HAWAII • HILO, HAWAII

Renovated Hotel

The Sheraton Maui will undergo major renovation to restore it to a preeminent Hawaiian hotel that is distinctive among its peers. The Molokai Wing, the Cliff Tower and the Garden Tower will be renovated. The existing cottages will be demolished and replaced by the Seaside Village. Although there will be an increase of modules, the amount of guest rooms will still remain the same.

The existing floor area of restaurants and meeting rooms as well as areas of the food and beverage, and function supports will increase. The service areas, laundry/valet, engineering, administrative offices, etc. will be renovated and increased in size. The existing parking lot adjacent to Kaanapali Parkway will be demolished and replaced with a multi-story parking complex. The landscaping will be redone to include lagoons and additional swimming pools throughout the entire hotel site. The existing porte-cochere and main lobby will be replaced by a ramped entry drive and lobby at the 30 ft. elevation. The proposed renovation is shown on Exhibit 4.

III. EXISTING CONDITIONS

A. Topography and Soil Conditions

The terrain of the property generally slopes at 1 to 10 percent in various directions. The area described as Black Rock is located atop a cliff at the northwestern boundary of the property. The elevations on the site range from 9 feet at the Main Lobby to 73 feet MSL (mean sea level) at the Discovery Room at the top of Black Rock.

The soil classification of the site is described as Jaucas sand (JaC) by the USDA Soil Conservation Service ("Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai"). The single grain, sandy soil has a slope of 0 to 15 percent. Permeability is rapid and runoff is very slow to slow. The hazard of water erosion is slight.

B. Flood Zone

The Flood Insurance Rate Map (FIRM) for the area indicates that the site lies within Zone C, A4 and V12. The majority of the site is situated in Zone C, which is an area of minimal flooding. Areas along the shoreline are close to Zone A4, which is an area of 100-year flood. The canal is situated in Zone V12, which is an area of 100-year flood with velocity (wave action). Refer to Exhibit 5.

The buildings for the proposed redevelopment lie within Zone "C" and is therefore in an area of minimal flooding.

C. Drainage System

At present, storm runoff generated from the existing hotel flows in several directions. More than half of the storm runoff generated from the hotel sheet flows into the ocean. Storm runoff at the cottages percolate into low spots at grassed area. Storm runoff from the parking area, tennis courts, porte cochere and the service entry road are intercepted by an underground drainage collection system on Kaanapali Parkway. The underground drainage collection system discharges storm runoff into the canal through a 42-inch outlet. A total of 78 cfs (cubic feet per second) of storm runoff is generated by the existing hotel. Refer to Exhibits 6 and 8.

D. Water System

The water system is owned and operated by Kaanapali Water Corp., a subsidiary of Amfac Property Investment Corp. Potable, fire protection and irrigation water for developed areas, other than irrigation water for the golf courses, is provided by the system.

The water source is basal groundwater obtained from four deep wells, the Honokowai Well B and the Mahinahina Wells P-4, P-5 and P-6. These four wells have a total design capacity of 5.4 million gallons per day (MGD) and have a current pumping rate of 4.28 MGD with an unused capacity of 1.12 MGD. The Hanakaoo Wells P-1 and P-2 and Honokowai Well A will provide an additional 2.52 MGD and are expected to be operational within the next two years.

Water is stored within three 1.5 MG reservoirs. The Puukolii and Kaanapali Reservoirs are located at the mauka end of Puukolii Road. The third reservoir is located mauka of the South Course of the Royal Kaanapali Golf Course.

The transmission system is comprised of 12-inch and 16 inch cast iron and ductile iron pipes between the wells and reservoirs and from the reservoirs to each of the developed areas of Kaanapali.

A 16-inch and 12-inch pipeline crosses Honoapiilani Highway to service the Kaanapali Resort area. A 12-inch pipeline located along Kaanapali Parkway provides service to the Sheraton Maui. Refer to Exhibit 8.

A total of seven fire hydrants are located within the bounds of the hotel. Three fire hydrants are located on Kaanapali Parkway fronting the hotel. Two fire hydrants are located along the access road to the service area. A fire hydrant is located on the south side of the hotel along the beach access walkway. The seventh fire hydrant is located behind the main lobby and tennis courts.

Water for hotel domestic use is metered through a 3-inch and a 6-inch meter. The 3-inch meter is located at the south side of the hotel fronting Kaanapali Parkway and provides service to the luau cottages (Rooms 2600 to 3600). The 6-inch meter is located at the entrance of the Service Area and supplies the Garden Tower, the Cliff Tower, the Molokai Wing, the Discovery Room, cottages, landscape irrigation and pools.

The hotel's water consumption for each month of 1992 is shown on Table I. The tabulation includes water use for landscape irrigation, swimming pools and laundry.

The water consumption at full occupancy is 353,100 gallons per day (gpd). Approximately 123,000 gpd of water is used for landscape irrigation and swimming pools with the balance of 230,100 gpd used for domestic supply. The average daily demand for the present hotel is 450 gpd per occupied guest room.

E. Wastewater System

The County sewerage system within the Kaanapali Resort area along Honoapiilani Highway, consists of 27-inch gravity trunk lines, two pump stations (No. 1 and No. 2), 20-inch force mains and the 6.7 million gallons per day (mgd) capacity Lahaina Sewage Treatment Plant. Sewage from Lahaina is conveyed along Honoapiilani Highway via the force mains and gravity lines and is combined with flow from the Kaanapali Resort area as it flows toward the Lahaina Sewage Treatment Plant near Honokowai Stream.

Both County pump stations (i.e., Nos. 1 and 2) are equipped with three 2,500 gallons per minute (gpm) pumps, in which two pumps are "on-line" (5,000 gpm or 7.2 mgd capacity), while the third pump acts as standby.

The system was originally designed to serve the sewage requirements of future developments in Lahaina, with an Average Daily Flow of 3.2 and a Peak Flow capacity of 7.2 mgd.

In the early 1980's, Amfac Property Investment Corp. initiated a 3.5 mgd expansion of the then existing 3.2 mgd Lahaina Sewage Treatment Plant to accommodate anticipated future growth in Kaanapali. The plant expansion, which was completed in 1985, increased the total treatment plant capacity to 6.7 mgd. Under an agreement with the County, Amfac paid for the plant expansion and dedicated the improvements to the County, while maintaining a 3.16 mgd allocation of the treatment plant capacity, which excludes flows from Kaanapali Hillside and The Masters.

Wastewater for the existing Sheraton Maui is carried by one 6-inch and two 8-inch laterals. Refer to Exhibit 8. The 6-inch lateral provides service to the Luau Cottage area. An 8-inch lateral services the central area of the hotel. The other 8-inch lateral provides service to the Black Rock area. These three laterals carry the wastewater to a 15-inch County sewerline on Kaanapali Parkway. The sewage is conveyed to pump stations located along the Royal Kaanapali Golf Course. It is then pumped up to Sewage Pump Station No. 2, located on the mauka side of Honoapiilani Highway. From Pump Station No. 2, the sewage is conveyed to Sewage Pump Station No. 1 by way of a 20-inch force main and a 27-inch gravity line. From Pump Station No. 1 the sewage is pumped to the Lahaina Sewage Treatment Plant. The wastewater generated by the Sheraton Maui is provided on Table II. Based on the information provided on Table II, 334,800 gpd of wastewater is generated during full occupancy by the 510 guest room hotel.

IV. PROPOSED IMPROVEMENTS

A. Grading Plan

The proposed grading plan will require excavation and embankment for the construction of the parking structure, the Seaside Village, entry to the new lobby and the additional swimming pools and lagoons. The site will be graded to dispose of the onsite storm runoff generated from this redevelopment.

Erosion control measures will be incorporated during the construction period to minimize soil loss. Graded areas will be hydromulched and watered for dust control.

B. Drainage Plan

The proposed drainage plan will consist of an underground drainage collection system which will convey onsite runoff to the existing system on Kaanapali Parkway. Storm runoff from the Black Rock area and the shoreline area will flow into the ocean and canal. Storm runoff from new lobby, thr Seaside Village and the parking structure will be collected by an on-site underground drainage collection system which will be intercepted by the drainage system at Kaanapali Parkway. Refer to Exhibit 7.

C. Hydrology

The Rational Method as described in the "Storm Drainage Standards", May 1988, by the City and County of Honolulu was used to compute the storm runoff quantity. Runoff calculations were based on a 10-year storm recurrence interval. The rainfall intensity was interpolated from the "Rainfall Frequency Atlas of the Hawaiian Islands", by the U.S. Department of Commerce, Weather Bureau.

The existing onsite storm runoff for the 10-year storm event is approximately 78 cubic feet per second (cfs). The storm runoff for the renovated hotel site is projected at 88 cfs. There will be approximately a 10 percent increase in impervious ground area with less open space. Refer to the Appendix for site drainage calculations.

D. Water System

The proposed redevelopment will maintain the 510 guest rooms. Three of these guest rooms will consist of two bath suites for a total estimated domestic flow of 230,900 gpd, and increase of 800 gpd from existing domestic usage. The landscape area will decrease, while the swimming pool and lagoon area will increase for a total estimated flow of 124,200 gpd, an increase of 1,200 gpd over existing non-domestic usage. The total estimated average daily demand for the proposed renovation with full occupancy is 355,100 gpd, an increase of about 2,000 gpd (about 0.5 percent) over existing usage.

E. Wastewater System

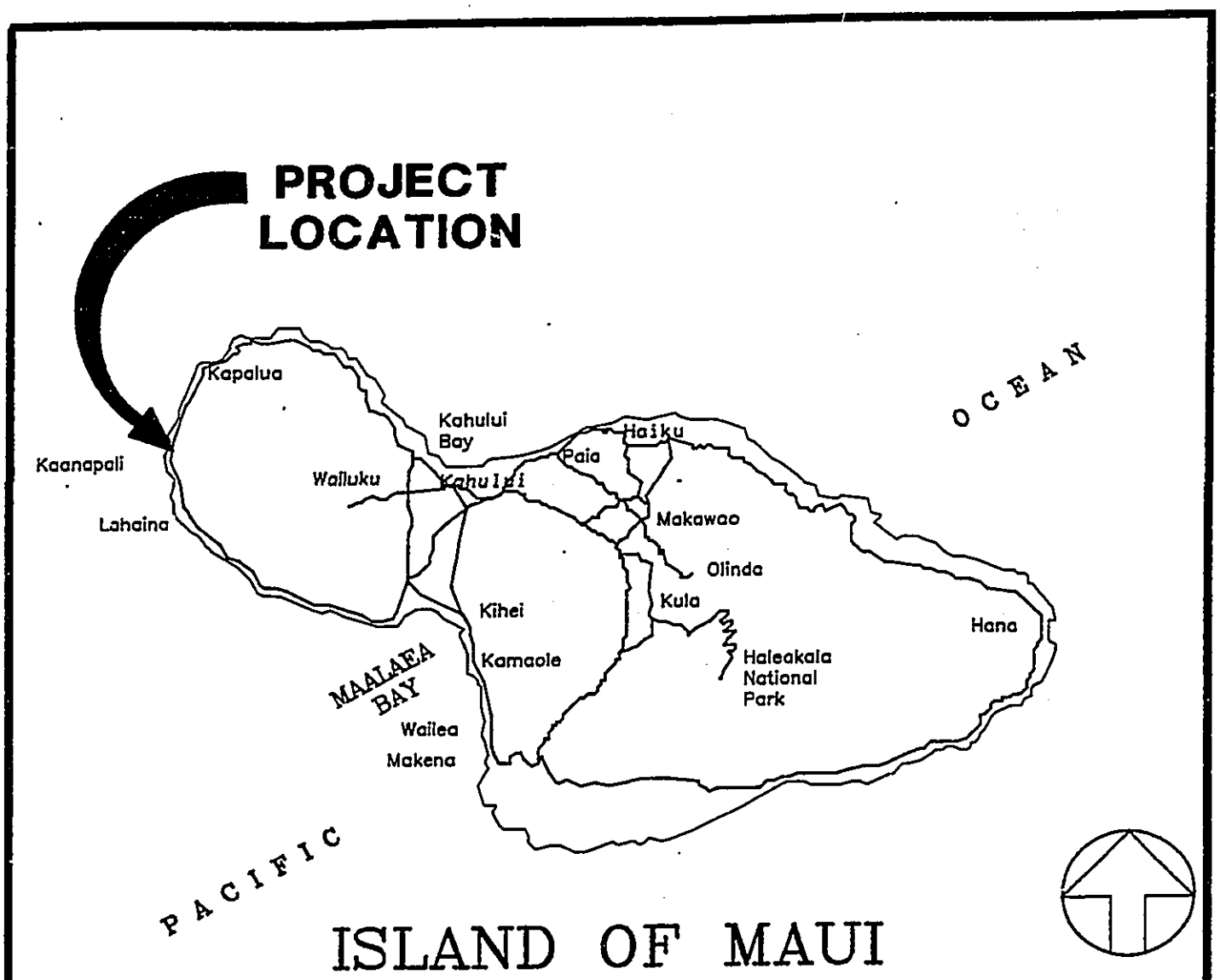
The proposed redevelopment will generate a total estimated wastewater flow of 336,900 gpd during full occupancy. This represents a 200 gpd increase (0.6 percent) over existing flows. Construction plans and calculations will be submitted to the Department of Public Works, County of Maui, for approval.

V. CONCLUSION

The proposed grading and drainage plans for the Sheraton Maui Redevelopment will be designed to produce no adverse effects by storm runoff to adjacent properties. All drainage improvements will conform to the County Standard and will be coordinated with the Department of Public Works, County of Maui.

Water and sewer systems will be designed in accordance with the requirements of the Department of Water Supply, State Department of Health and the Department of Public Works.

EXHIBITS

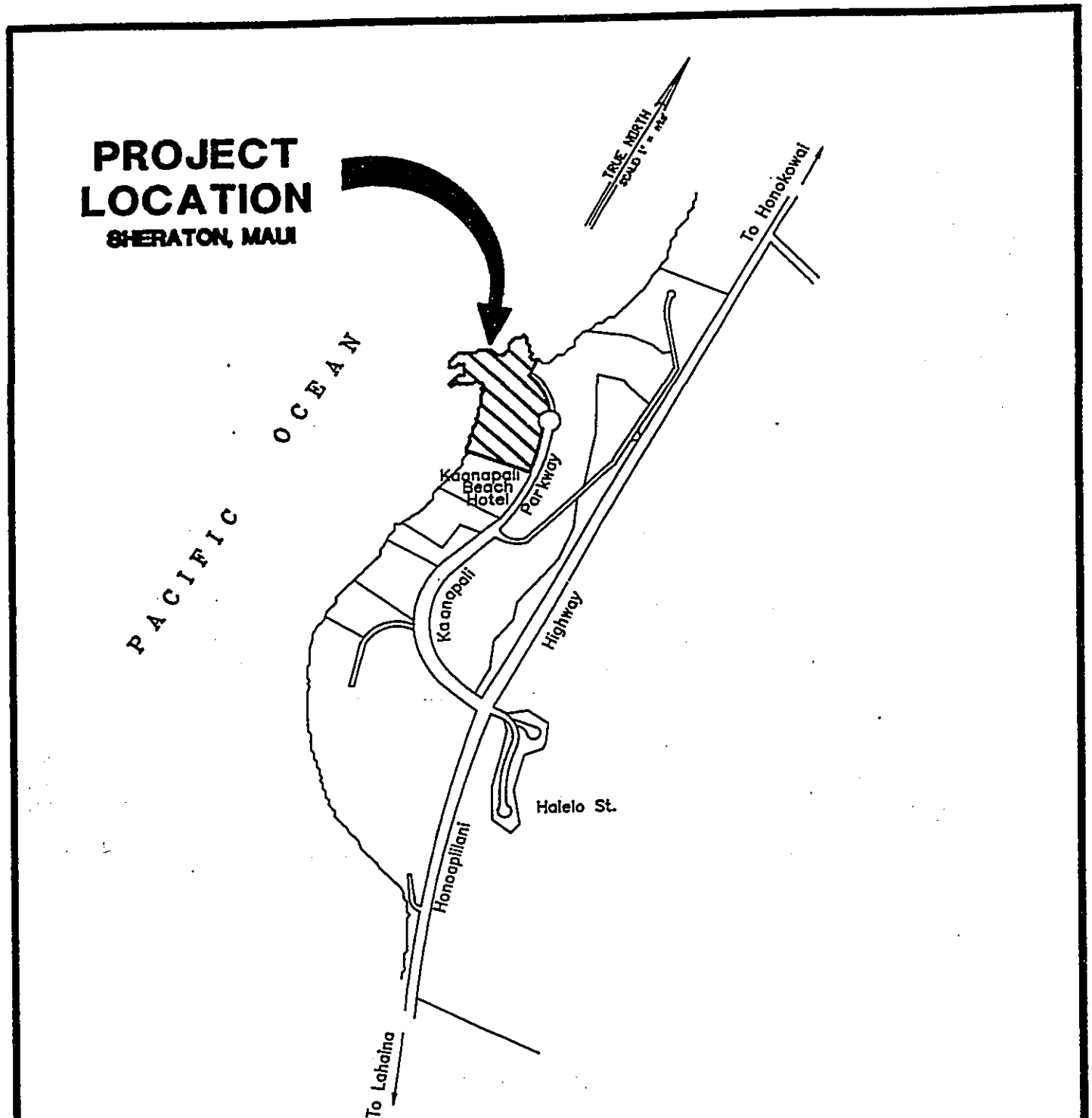


ISLAND OF MAUI

5
SCALE IN MILES

ENGINEERING REPORT SHERATON MAUI REDEVELOPMENT KAANAPALI, MAUI, HAWAII	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS • SURVEYORS HONOLULU, HILO, WAILUKU, MAUI LOCATION MAP	EXHIBIT 1

JOB NO. M-93-609
EN-M9.3609E.dwg\CLN



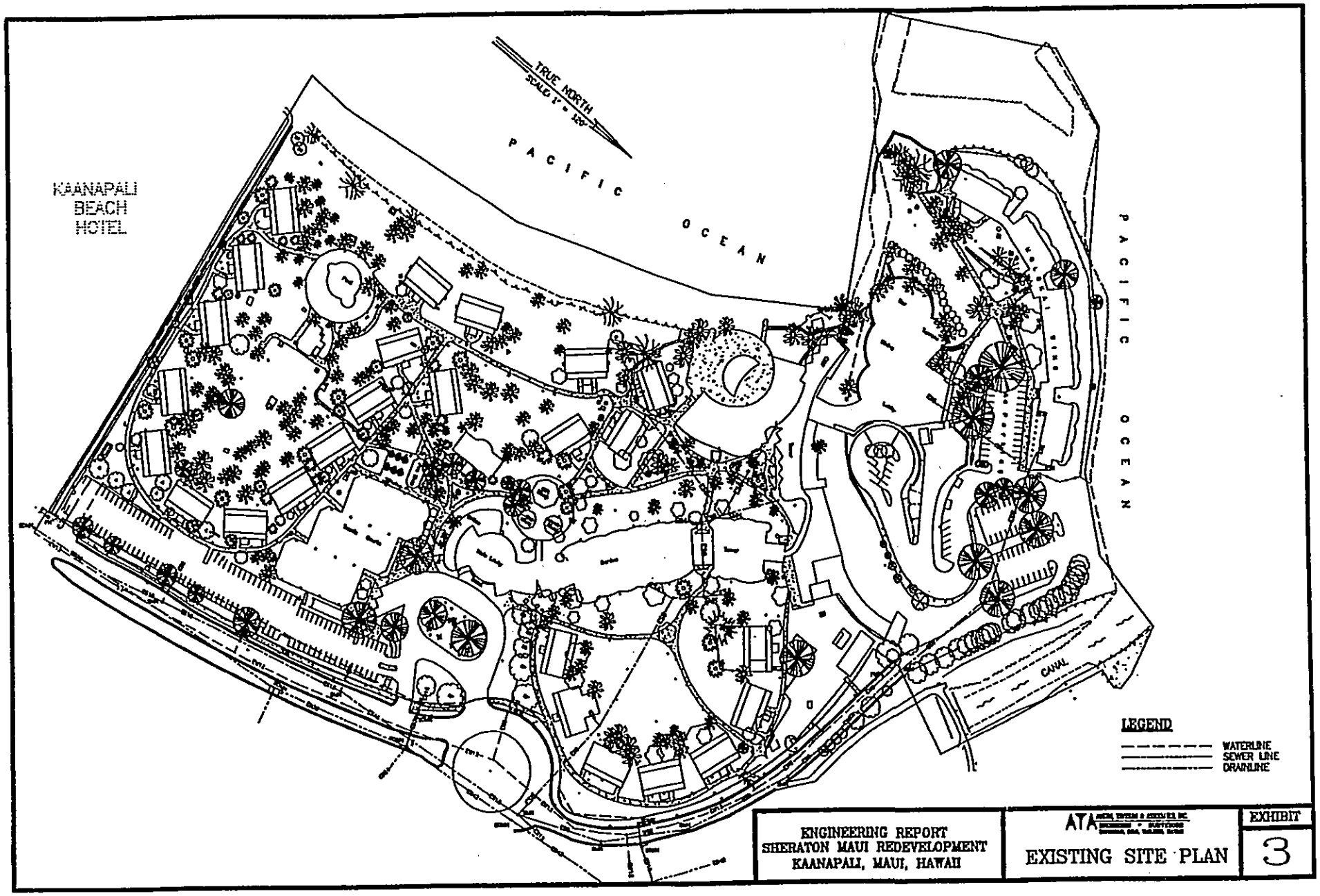
ENGINEERING REPORT
SHERATON MAUI REDEVELOPMENT
KAANAPALI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS • SURVEYORS
HONOLULU, HAWAII; WAILUKU, HAWAII

VICINITY MAP

EXHIBIT 2

JOB NO. M-93-609
FN: M93609E.dwg\CLN



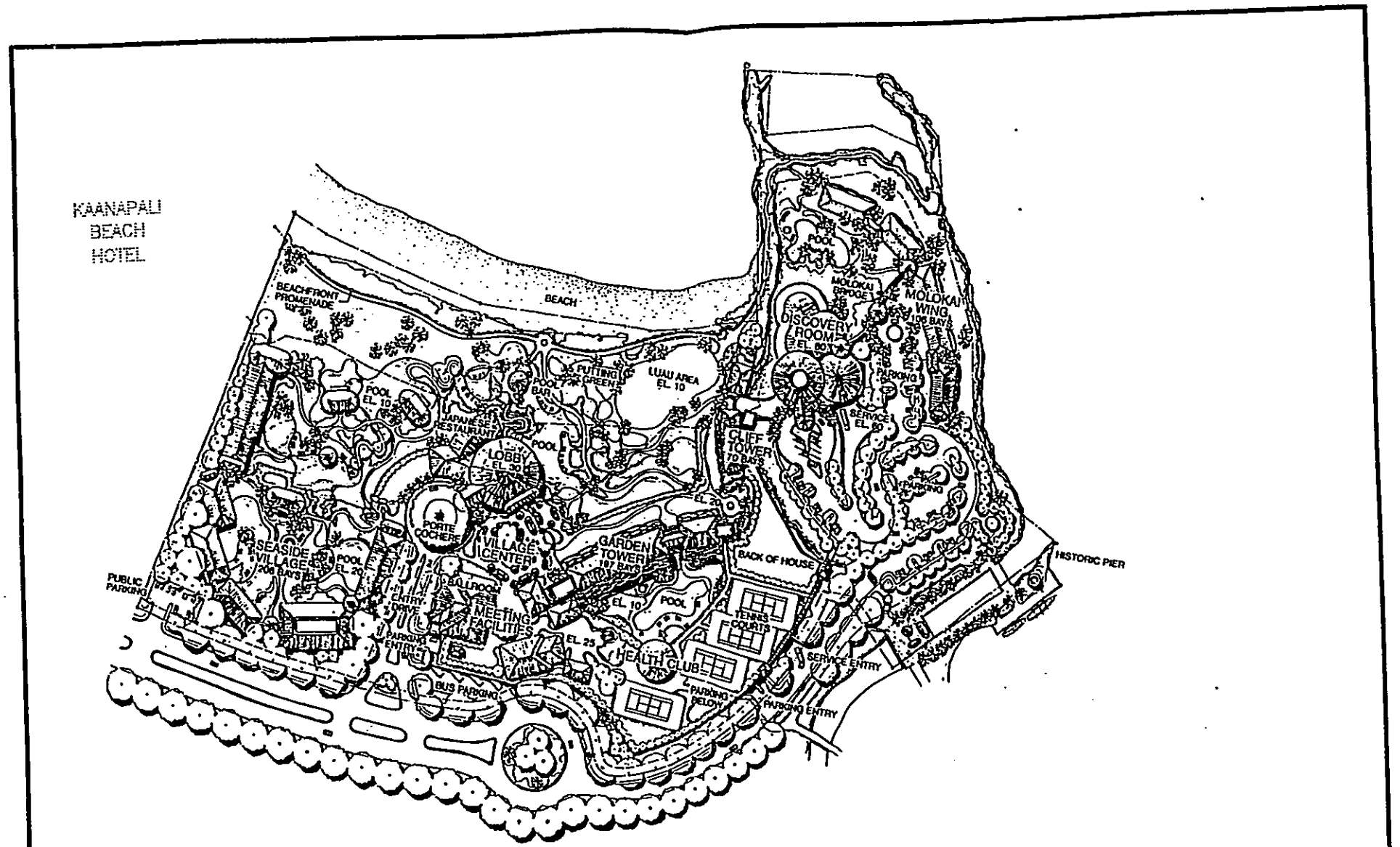
ENGINEERING REPORT
SHERATON MAUI REDEVELOPMENT
KAANAPALI, MAUI, HAWAII

ATA

EXISTING SITE PLAN

EXHIBIT 3

JOB NO. M-93-609
FN: SHEREX6.dwg\CLN



ENGINEERING REPORT SHERATON MAUI REDEVELOPMENT KAANAPALI, MAUI, HAWAII	ATA PROPOSED SITE PLAN	EXHIBIT 4

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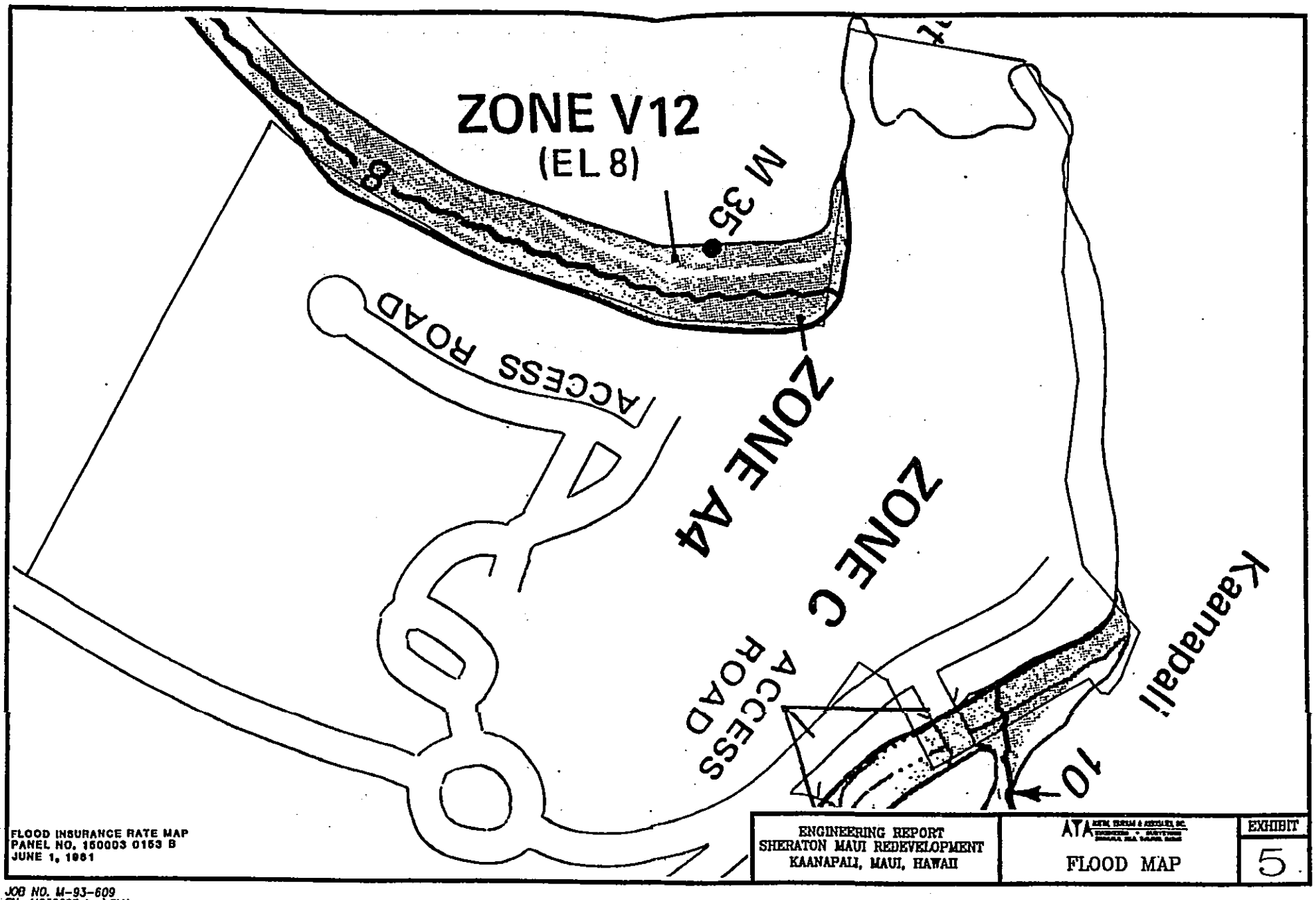
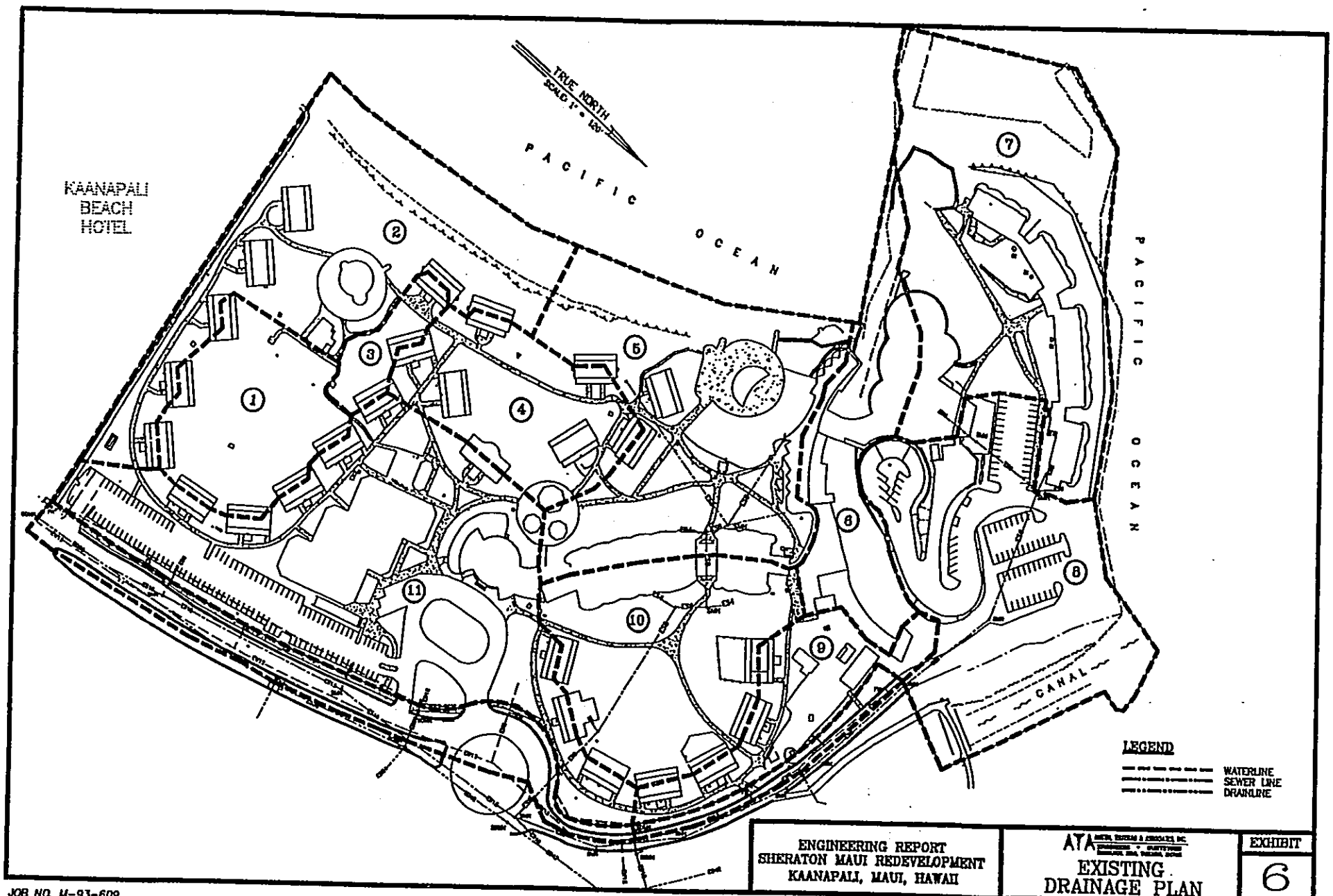


FLOOD INSURANCE RATE MAP
PANEL NO. 150003 0153 B
JUNE 1, 1981

ENGINEERING REPORT SHERATON MAUI REDEVELOPMENT KAANAPALI, MAUI, HAWAII	ATA FLOOD MAP	EXHIBIT 5

JOB NO. M-93-609
FN: M93609E.dwg\CLN



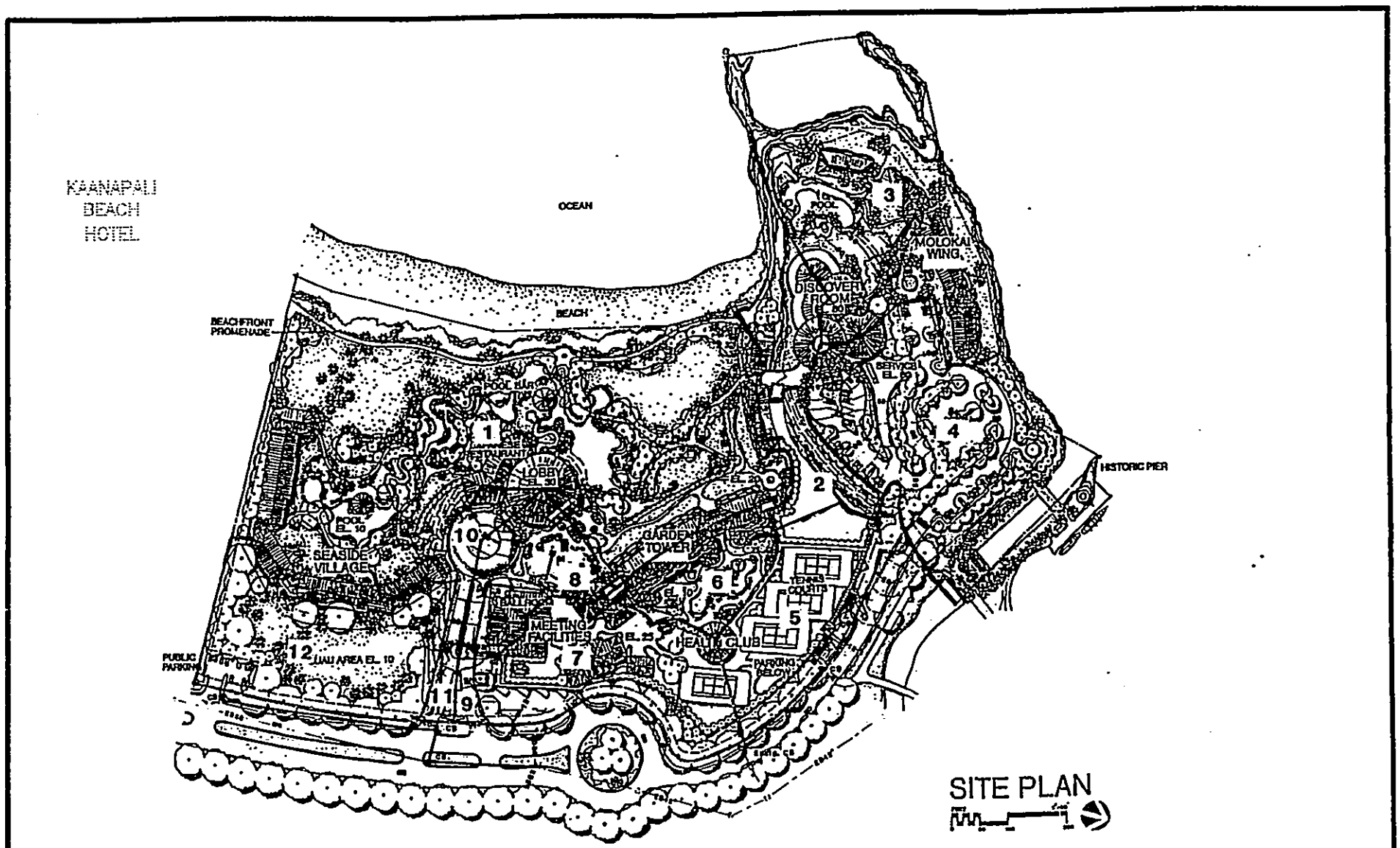
ENGINEERING REPORT
SHERATON MAUI REDEVELOPMENT
KAANAPALI, MAUI, HAWAII

ATA

EXISTING
DRAINAGE PLAN

EXHIBIT
6

JOB NO. M-93-609
FN: SHEREX6.dwg\CLN



ENGINEERING REPORT SHERATON MAUI REDEVELOPMENT KAANAPALI, MAUI, HAWAII	ATA PROPOSED DRAINAGE PLAN	EXHIBIT 7

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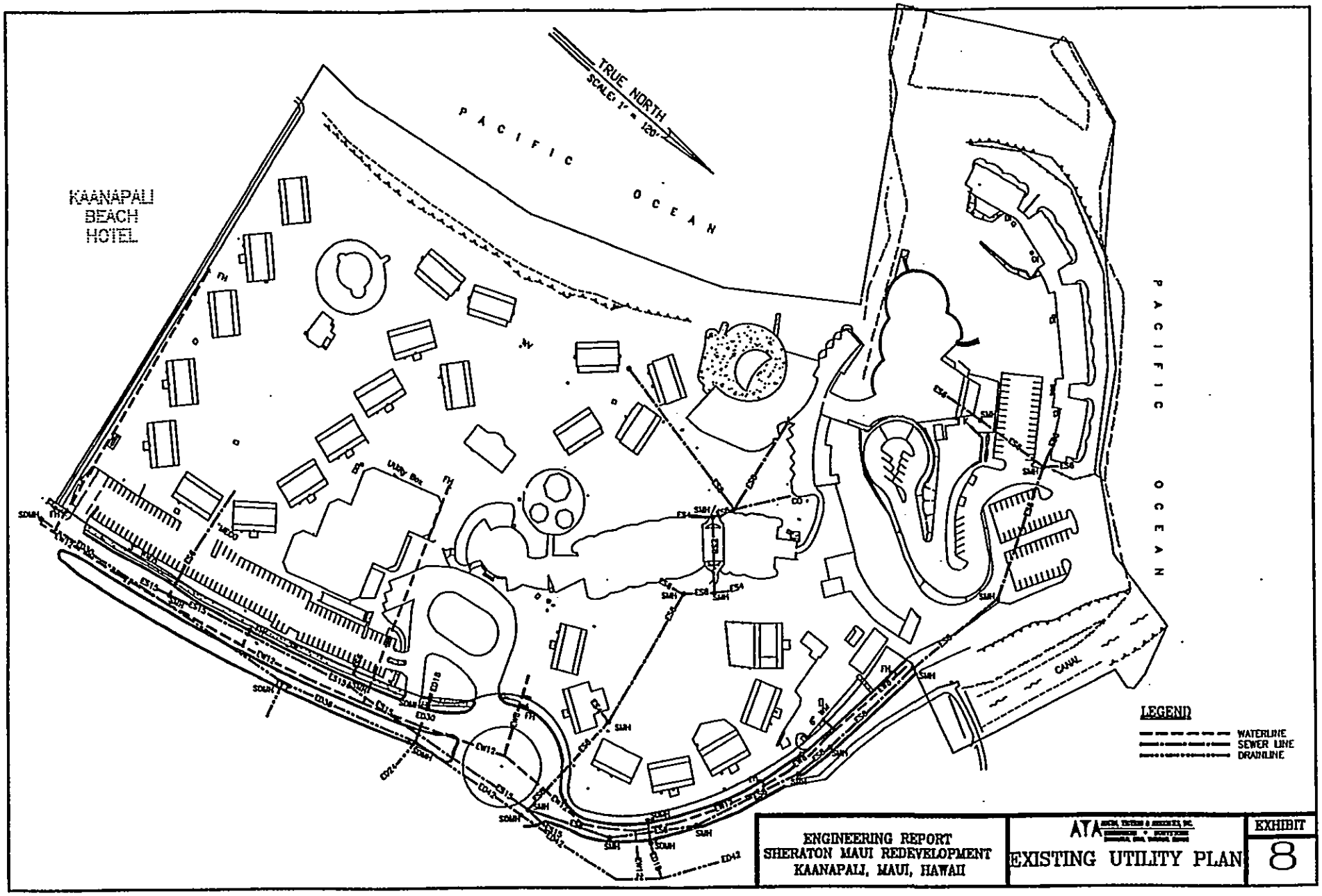


ENGINEERING REPORT SHERATON MAUI REDEVELOPMENT KAANAPALI, MAUI, HAWAII	ATA EXISTING UTILITY PLAN	EXHIBIT 8

JOB NO. M-93-609
FN: SHEREX8.dwg\CLN

TABLES

TABLE I

Daily Water Usage

Maui Sheraton Hotel

(Gallons Per Day)

	1988	1989	1990	1992
Jan	237,828	214,680	232,697	148,387
Feb	249,586	182,200	211,771	255,172
March	209,200	224,000	204,036	319,355
April	239,185	216,259	205,357	256,667
May	259,950	242,029	232,686	241,935
June	222,826	251,536	240,643	316,667
July	318,786	276,000	250,357	254,839
Aug	274,414	298,278	267,171	277,419
Sept	353,059	309,037	289,893	333,333
Oct	242,929	299,786	270,686	258,065
Nov	292,286	268,829	266,500	236,667
Dec	241,258	277,478	248,321	283,871

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

TABLE II

Wastewater Flow[1]

Sheraton Maui Hotel

(Gallons Per Day)

	1987	1988	1989	1990	1992
Jan-Mar	201,458	205,597	253,500	234,569	205,836
Mar-May	249,333	252,667	228,393	220,085	236,169
May-July	267,800	293,623	213,951	223,645	231,156
July-Sept	283,581	284,079	334,839	289,525	275,698
Sept-Nov	267,267	263,417	268,279	396,661	247,250
Nov-Jan	260,483	188,590	270,806	236,323	287,617

APPENDIX

PROJECT: Sheraton Maui - Existing C.

JOB NO. 93-609.1

BY KVS DATE

CHKD DATE

SHT. NO. 1 OF 2

AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS

501 SUMNER STREET, SUITE 521, HONOLULU, HAWAII 96817-5031

WAILUKU, MAUI, HAWAII

HILO, HAWAII

HYDROLOGY COMPUTATION

Drainage Area	Area, A, (Acre)	Runoff Coefficient, C	Rainfall Intensity, I, (In./Hr.)	Length of Reach, L, (Ft.)	Slope, S, (Ft./Ft.)	Time of Concentration, Tc, (Min.)	Correction Factor	Runoff Discharge Q = CIA, (CFS)	Accumulated Q, (CFS)	Remarks
1	1.25	.65	2.0	195	0.009	18	1.8	2.93		Sediment Basin
2	2.90	.65		600	0.006	20	1.8	6.79		Runoff to Ocean
3	.32	.65		180	0.009	18	1.8	0.75		Sediment Basin
4	1.33	.65		140	0.01	17	1.8	3.11		Sediment Basin
5	3.02	.75		200	0.02	12	2.2	9.96		Runoff to Ocean
6	1.33	.85		690	0.06	15	2.0	4.52		Runoff to Ocean
7	3.06	.85		190	0.13	10	2.3	11.96		Runoff to Ocean
8	2.94	.85		700	0.08	6.5	2.7	13.49		Runoff to Ocean
9	.93	.85		320	0.06	6	2.8	4.43	4.43	CB
10	1.99	.65		200	0.01	18	1.8	4.66		Sediment Basin
11	4.22	.85		600	0.008	10	2.2	15.78	20.21	CB
									78.38	TOTAL from hotel site

Reference:

JSTN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS
501 SUMNER STREET, SUITE 520
HONOLULU, HAWAII 96817-5031
WAILUKU, MAUI, HAWAII
HILO, HAWAII

PROJECT: Sheraton Maui - Proposed

JOB NO. 92-609

BY AW DATE

CHKD DATE

SHT. NO. 2 OF 2

HYDROLOGY COMPUTATION

Drainage Area	Area, A, (Acre)	Runoff Coefficient, C	Rainfall Intensity, I, (In./Hr.)	Length of Reach, L, (Ft.)	Slope, S, (Ft./Ft.)	Time of Concentration, Tc, (Min.)	Correction Factor	Runoff Discharge Q = CIA, (CFS)	Accumulated Q, (CFS)	Remarks
1	8.17	.80	2.0	600	.006	15	2.0	26.14		Runoff to Ocean
2	1.12	.85		640	.06	15	2.0	3.81		Runoff to Ocean
3	3.00	.85		190	.23	10	2.3	11.73		
4	3.04	.85		700	0.08	6.5	2.7	13.95	55.63	
5	1.56	.85		420	.06	6	2.8	7.42		CB
6	.86	.75		240	.02	7	2.5	3.23		CB
7	1.86	.85		240	.02	7	2.5	7.91		CB
8	.89	.80		260	.05	6	2.8	3.99		CB
9	.14	.85		140	.05	6	2.8	.67		CB
10	.40	.80		260	.05	6	2.8	1.8		CB
11	.15	.80		120	.05	6	2.8	0.7		CB
12	2.1	.80		270	.04	17	1.9	6.4	32.12	CB
									87.75	Total

Reference:

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

REFERENCES

1. John Robinson, Sheraton Maui Hotel.

Appendix F

Agency Pre-Consultation Letters

APPENDIX F: AGENCY PRECONSULTATION LETTERS

During preparation of the Draft Environmental Assessment, pre-consultation packages were sent to the following agencies. The written agency responses are reproduced in this Appendix.

County

#County of Maui Planning Department
Department of Water Supply
Department of Public Works, Land Use and Codes Administration
#Department of Parks and Recreation
#Department of Human Concerns

State

#Department of Health (Honolulu and Maui)
#Department of Transportation, Highways
#Department of Land and Natural Resources
#Department of Land and Natural Resources,
State Historic Preservation Division)

Federal

U.S. Department of Agriculture, Soil Conservation Service
#Dept. of the Army, Corps of Engineers

Other

#Maui Electric Company

# Indicates comment letter received

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

REPLY TO ATTENTION OF
Operations Division

April 7, 1993

Ms. Leslie Kurisaki
Project Planner
Helber Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

RECEIVED
-9
HELBER HASTERT & FEE PLANNERS

Dear Ms. Kurisaki:

This is to acknowledge receipt of your letter dated March 8, 1993 regarding the Sheraton Maui Hotel redevelopment. The summary information package was reviewed.

Any work in waters of the U.S. will require a Department of the Army (DA) permit. Renovations to the existing pier would require a DA permit.

File No. PO 93-042 has been assigned to your project. Please refer to this number in future correspondence. Should you have any questions on this matter, please contact the Operations Division at 438-9258.

Sincerely,

Deborah L. Tyhyfoody
for Michael T. Lee
Chief, Operations Division

JOHN WAIHEE
GOVERNOR OF HAWAII

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

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

April 16, 1993

In reply, please refer to:
93-080/epo

Mr. Leslie Kurisaki
Project Manager
Helber Hastert & Fee
733 Bishop Street, Suite 2590
Honolulu Hawaii 96813

RECEIVED
26
HELBER HASTERT & FEE PLANNERS

Dear Mr. Kurisaki:

Subject: Early Assessment
Sheraton Maui Hotel Redevelopment
Ka'anapali Beach, Maui, Hawaii

Thank you for allowing us to review and comment on the subject project. We have the following comments to offer:

Wastewater

The subject project is located within the County sewer service system. As the area is sewered, we have no objections to the proposed redevelopment, consisting of upgrading existing facilities to new federal, state and county code requirements, as well as improve the aesthetic and functional aspects of the hotel, provided that the project is connected to the public sewers.

The developer should work closely with the County to assure the availability of additional treatment capacity and adequacy for the project. Non availability of treatment capacity will not be an acceptable justification for use of any private treatment works.

If you should have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4290.

Due to preliminary plans being the sole source of discussion, we reserve the right to impose future environmental restrictions on the project when more detailed information is submitted.

Very truly yours,

JOHN C. LEWIN, M.D.
Director of Health

c: Wastewater Branch

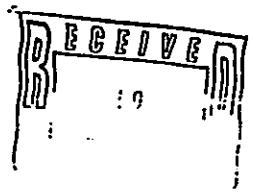
JOHN WAIHEE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

Joseph J. Sobotka, M.D.
DISTRICT HEALTH SERVICES ADMINISTRATOR

March 17, 1993



Helber Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Attention Leslie Kurisaki

Dear Sir:

Subject: Sheraton Maui Hotel Redevelopment, Kaanapali Beach, Maui, Hawaii

Due to the general nature of your project summary, we are unable to make any specific comments at this time. However, the proposed project must comply with all applicable rules and requirements of the Health Department relating to food, swimming pool, and other health related activities. We reserve the right to review and approve the detail plan when it becomes available.

Should you have further questions, please call Mr. David H. Nakagawa, Chief Sanitarian, Maui District Health Office, at 243-5255.

Sincerely,

Joseph J. Sobotka

JOSEPH J. SOBOTKA, M.D.
Acting District Health Services Administrator

JOHN WAIHEE
GOVERNOR OF HAWAII

Keith W. Ahue, Chairperson
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
John P. Keppeler, II
Dona L. Hanaike

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

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

REF:OCEA:SGK

APR 15 1993

FILE NO.: 93-485
DOC. NO.: 2570

RECEIVED
16 1993
HELBER HASTERT & FEE PLANNERS

Ms. Leslie Kurisaki, Project Planner
Helber Hastert and Fee, Planners
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Ms. Kurisaki:

SUBJECT: Early Consultation for an Environmental Assessment (EA):
Sheraton Maui Hotel Redevelopment, Ka'anapali, Maui,
TMK: 4-4-08: 5

We have reviewed the preliminary EA information for the proposed redevelopment project transmitted by your letter dated March 8, 1993, and have the following comments:

Brief Description:

The applicant proposes to renovate the existing 505-room hotel while maintaining the existing low density character of the property. The redevelopment involves two components: the renovation of existing facilities, and the demolition and construction of new structures and facilities.

The proposal also includes a concept design for renovation of an old pier located on the northern end of the property. The pier could serve as a staging area for future commercial and recreational boating activities. The applicant is willing to participate with the State and other landowners, however, it does not intend to take the lead on renovation of the old pier.

Division of Aquatic Resources

The Division of Aquatic Resources (DAR) comments that the applicant's request for the proposed renovation of existing hotel facilities, and the demolition and construction of new structures and facilities is not expected to have significant adverse impact on aquatic resource values due to the site already being extensively developed. However, since the proposed project is adjacent to the nearshore waters which are popular for sport diving, additional mitigation measures should be provided to minimize erosion and siltation including:

1) Site work should be scheduled for periods of minimal rainfall;

2) Lands denuded of vegetation should be replanted or covered as quickly as possible to control erosion;

3) Construction materials, petroleum products, debris and landscaping products should be prevented from falling, blowing or leaching into the aquatic environment.

DAR supports the applicant's proposed action of providing a 20-car parking lot for the public along the southern portion of the property (adjacent to the Ka'anapali Beach Hotel). This represents an increase from the existing five parking stalls and would provide additional parking at the public beach access.

Division of Land Management

The Division of Land Management (DLM) comments that they would like more information regarding possible pier renovation when the Draft EA is submitted.

In the past, people, usually local, have complained that security guards employed by Sheraton have chased them off when they have tried to fish, swim, or dive off the old pier at the north end of the property.

Before the State agrees to participate in the pier restoration, Sheraton should inform DLM of the extent of their plans for access to, and parking for pier users. DLM assumes that recreational boaters will need trailer parking and recognizes that fishermen do not appreciate the long walk from the public parking lots on the southern end of the property.

DLM believes that a 20-car parking lot for public beach parking is, or soon would be, inadequate and that more should be provided.

Other improvements to consider are:

1) A "Hayashi Beachwall" now rather than boulders and/or sandbags when the waves are lapping at improvements.

2) Beach sidewalks with the makai edge running along the certified shoreline to allow the public and hotel personnel to know exactly where private property begins. One of DLH's latest complaints regarding the hotel was over the applicants planting and watering of naupaka plants to increase the size of their property.

Division of State Parks

The Division of State Parks comments that some provision for public access (including parking) to beach/shoreline should be included as a part of the approval.

Historic Preservation Division

We note that our Historic Preservation Division comments were sent to you directly.

Thank you for the opportunity to comment on this matter.

Please feel free to contact Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

John P. Keppeler

for KEITH W. AHUE

JOHN WAIHEE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HAWAII HISTORIC PLACES REVIEW BOARD
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

KEITH AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER, II
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

RECEIVED
APR - 9 1993
HELBER HASTERT & FEE PLANNERS

April 6, 1993

Ms. Leslie Kurisaki, Project Planner
Helber Hastert & Fee
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

LOG NO: 7721
DOC NO: 9303AG43

Dear Ms. Kurisaki:

SUBJECT: Historic Preservation Review of the Proposed Sheraton Maui Hotel Redevelopment
Kaanapali, Lahaina, Maui
TMK: 4-4-08: 5

Thank you for meeting with Ms. Annie Griffin, Staff Archaeologist handling Maui County, regarding this proposed development. This letter responds to your letter of March 8, 1993 and summarizes our concerns and recommendations made at the meeting.

As was pointed out in a previous meeting with Mr. Grant Murakami of your office, the rocky point at the western portion of this parcel was traditionally called Leina-a-ka-uhane, the "leaping place of the soul." It is listed in our inventory of historic places as site 1206. Traditional accounts also mention bloody battles to have occurred in the vicinity and that the area contained human bones. The sandy beach on which most of the hotel facilities are located is probably the likely location for the burial ground, if present. We are not aware of any archaeological study done when the existing hotel facilities were built between 20 to 30 years ago, so the presence or absence of a burial site on this property has not been determined. However, we have received unconfirmed oral reports that burials were discovered when the Garden Tower was built. Therefore, we believe that an inventory survey in the form of subsurface testing by backhoe should be conducted to determine the presence or absence of significant historic sites (cultural deposits and/or burials).

The proposed redevelopment was presented at your meeting with Ms. Griffin and the areas that will require excavations below grade were identified. Three areas were recommended by Ms. Griffin for subsurface testing. We also prefer that the testing be completed

prior to the completion of the Draft Environmental Assessment Report and filing of the SMA Permit Application. It is important for significant historic sites to be identified, if present, at an early stage so that their appropriate treatment can be determined during permit review.

If you have any questions, please contact Ms. Griffin at 587-0013.

Sincerely,

DON HIBBARD, Administrator
State Historic Preservation Division

AG:ll

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

REX D. JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO:

March 31, 1993

HAR-EP 9619.93

Ms. Leslie Kurisaki
Project Planner
Helber Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Ms. Kurisaki:

Subject: Sheraton Maui Hotel Redevelopment

Thank you for your letter dated March 8, 1993 and the project summary of the proposed redevelopment.

We recommend consulting the Department of Land and Natural Resources, Division of Boating and Ocean Recreation (DLNR-BOR) about the possible repairs to the old pier.

Should there be any questions, please contact Calvin Tsuda, Deputy Director for Harbors at 587-1918.

Sincerely,

Rex D. Johnson
Director of Transportation

RHN:dfb

c: DLNR-BOR

LINDA CROCKETT LINGLE
Mayor

BRIAN W. MISKAE
Planning Director

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

March 31, 1993

Ms. Leslie Kurisaki
Helber Hastert & Fee
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Ms. Kurisaki,

RE: Pre-Agency Consultation for the Sheraton Maui Renovation Environmental Assessment, TMK 4-4-8:5, Kaanapali, Maui.

The Planning Department has reviewed the Project Summary dated March 1993 for the Sheraton Maui Hotel Redevelopment and has the following comments to offer:

1. The project will be subject to both the Special Management Area and Shoreline Setback Rules and Regulations. As part of the project submittal, a current shoreline certification map will be required. The issue of the reconstructed Molokai Wing may be an area of concern from this department and shall be evaluated pursuant to the Shoreline Setback Rules.

2. Regarding public access to shoreline resources, consideration should be given to the continuation of the lateral beach walkway along the entire shoreline boundary. Also public beach access parking should be addressed by the application.

3. If the historic pier area is be restored, provisions for public access should be provided and incorporated into the project plans.

4. In order to analyze visual impacts of the project, the application submittal should include view studies from adjacent properties as well as from Kaanapali Parkway.

5. As part of the Environmental Assessment Report, additional information pertaining to traffic, drainage, historic and cultural resources, sewer, water, public facilities, etc. will be addressed in detail.

At this time we are providing general comments for your information. The Planning Department will analyze your project during the Special Management Area Use Permit and Shoreline Setback Variance process and make a recommendation to the Maui Planning Commission once all relative information has been gathered.

Thank you for your cooperation in this matter. If further clarification is required, please contact this office.

Very truly yours,

BRIAN MISKAE
Director of Planning

cc: Clayton Yoshida
Colleen Suyama
Ann Cua

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580 KAAHUMANU AVENUE, WAILUKU, HAWAII 96793

LINDA CROCKETT LINGLE
Mayor
CHARMAINE TAVARES
Director
ARMAND PADUA
Deputy Director

(808) 243-7230

April 15, 1993

Ms. Leslie Kurisaki
Helber Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, HI 96813

Dear Ms. Kurisaki:

Subject: Sheraton Maui Hotel Redevelopment
Kaanapali Beach, Maui, Hawaii

Pursuant to your request on March 8, 1993, we have reviewed the summary project information on the proposed Sheraton Maui Hotel redevelopment. However, because it is in summary form, we request that you either meet with us or submit for comments the project's plans detailing the public beach access and parking lot.

Thank you for allowing us to comment on the project summary information pertaining to the forthcoming Draft Environmental Asessment. If you have any questions, please call Roxanne Teshima at 243-7967.

Sincerely,

CHARMAINE TAVARES
Director

CT/rt

Helber Hastert
Planners

23 April 1993

Ms. Charmaine Tavares, Director
Department of Parks and Recreation
County of Maui
1580 Kaahumanu Avenue
Wailuku, Hawaii 96793

Re: Sheraton Maui Hotel Redevelopment
Your Letter dated April 15, 1993

Dear Ms. Tavares:

Thank you for your letter in response to the project summary sent to you on the Sheraton Maui Hotel Redevelopment. Your letter indicated that you wanted additional information on the project. In a subsequent conversation with Roxanne Teshima of your office on Thursday, April 22, she indicated to us that you had several specific concerns regarding the public beach access and parking:

1) Public Beach Access. The project will not change or modify the existing public beach access which runs along the Sheraton Maui's southern property line.

2) Beach Parking Lot. The project will create a new public beach parking lot on the property at Kaanapali Parkway, adjacent to the public beach access. There is no public beach parking lot at present. The proposed lot will have 20 parking spaces (including one handicapped stall) and parking will be free.

In its approval of a Special Management Area Use Permit for the renovation of the adjacent Kaanapali Beach Hotel on December 20, 1990, the Maui County Planning Commission required "a minimum of sixteen (16) compact beach parking spaces...", which established a ratio of one public beach stall per 28 hotel rooms (1:28). The beach parking stalls proposed for the Sheraton Maui Hotel redevelopment increases this ratio to one stall per 25 rooms (1:25), a ten percent increase over what was required for the Kaanapali Beach Hotel.

We hope that this information addresses your specific concerns. If you have any questions or need additional information please feel free to call.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki
Project Planner

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

DEPARTMENT OF
HUMAN CONCERNS
COUNTY OF MAUI

LINDA CROCKETT LINGLE
Mayor
STEPHANIE AVEIRO
Director
HENRY OLIVA
Deputy Director

200 SOUTH HIGH STREET, WAILUKU, HAWAII 96793 (808) 243-7805

April 1, 1993

Ms. Leslie Kurisaki
Project Planner
Helber Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Ms. Kurisaki:

Subject: Sheraton Maui Hotel Redevelopment

We have reviewed your March 8, 1993 letter to Mr. Edwin Okubo of our Housing Division and the Project Summary for the subject project, and would like to offer the following comments:

1. The project summary states that the proposed redevelopment of the Sheraton Maui Hotel will not increase the number of hotel rooms. That being the case, the proposed project falls under the provisions of Section 14.64.050A of the Maui County Code, and is excluded from the County's affordable housing policies for hotel-related developments.

2. How many full-time and part-time employees are currently employed at the Sheraton Maui Hotel, and will some or all of the employees be laid-off during the one-year redevelopment period?

3. For those employees who are laid-off during the one-year redevelopment period, what are the arrangements for their re-employment, continuation of job seniority and continuation of retirement benefits?

4. The proposed 20 parking stalls for public beach parking is not adequate and should be increased significantly. Please consult with the Department of Planning for their determination of the adequate number of public beach parking stalls.

5. Please contact the Department of Public Works, Land Use & Code Administration concerning any requirements in providing parking stalls designed for and a public beach access accessible to the handicapped and disabled.

6. Shower and restroom facilities should be provided in the vicinity of the public beach access (near the beach).

Please contact Mr. Edwin Okubo or Mr. Wayde Oshiro at 243-7351 should you have any question.

Very truly yours,

for STEPHANIE AVEIRO
Director of Housing and
Human Concerns

WTO:df

xc: Housing Administrator
Director of Planning

30 April 1993

Ms. Stephanie Aveiro, Director
Department of Human Concerns
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Re: Sheraton Maui Hotel Renovation
Your Letter dated April 1, 1993

Dear Ms. Aveiro:

Thank you for your letter providing comments to the proposed Sheraton Maui Hotel renovation. In response to your comments:

Comment 2. The Sheraton Maui hotel currently has a total of 388 employees: 310 full-time, 27 part-time and 51 on-call employees. During the renovation period, it is anticipated that all but approximately eight of the management staff would be laid off. Depending on the contractor's requirements, there could be another 10 to 12 employees retained to do project security work.

Comment 3. Employees would be considered to be on temporary layoffs during the renovation period. The hotel would be extending the existing labor agreement with the approval of the Union, to provide the necessary reemployment, seniority and retirement benefit protection. Employees willing to relocate would also be considered for suitable openings that may arise at other Sheraton Hotels in Hawaii.

Comment 4. A meeting with the Maui County Planning Department director and staff was held in March 1993 to discuss the project. At that time, the Planning Department indicated that there were no County standards for public beach parking, and that they felt the 20 spaces provided was sufficient.

In its approval of a Special Management Area Use Permit Application for the proposed renovation of the adjacent Kaanapali Beach Hotel on December 20, 1990, the Maui County Planning Commission required "a minimum of sixteen (16) compact beach parking spaces...". This established a ratio of one public beach stall per 28 hotel rooms (1:28). The 20 beach parking stalls proposed by the Sheraton Maui Hotel redevelopment increases this ratio to one stall per 25 rooms (1:25), a ten percent increase over what was required for the Kaanapali Beach Hotel.

Finally, as mentioned to you recently by Mr. Jim Cockett of the Sheraton Maui, in addition to the 20 stall beach parking lot, the hotel will have additional parking for 500 or more cars which beach goers will be able to utilize. However, this overflow capacity will be rated parking.

Helber Hastert
Fees

Comment 5. At your suggestion, we followed up with the County Land Use and Codes Administration on requirements for parking and public beach access accessible to the handicapped. Land Use and Codes indicated that the County did not enforce federal Americans With Disabilities Act (ADA) guidelines.

According to Mr. Ben Grospe of the State Commission on Persons With Disabilities, there are currently no guidelines in place for recreational facilities (e.g., beach access). Recreational guidelines are currently being developed, and should be in place by 1995. However, beach parking, as part of the hotel site, is subject to ADA guidelines for handicapped-accessible parking. He indicated that for the proposed 20 spaces, one should be handicapped accessible. Accordingly, one of the 20 stalls will be handicapped accessible.

Comment 6. Showers for beach users are and will continue to be available on the beach. Presently, many beach-goers utilize the hotel restroom facilities.

Thank you again for taking the time to provide comments on the project.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Wayne Judd, ITT Sheraton
Jim Cockett, Sheraton Maui
Kevin Chun/Eugene Watanabe, WATG

Maui Electric Company, Ltd. • 210 West Kamehameha Ave. • PO Box 398 • Kahului, Maui, HI • 96732-0398

March 23, 1993

Mr. Leslie Kurisaki, Project Planner
Helber Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, HI 96813

Dear Mr. Kurisaki:

Subject: Sheraton Maui Hotel Redevelopment
Kaanapali Beach, Maui, Hawaii

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

In reviewing the information transmitted and our records, we need additional data to determine what impact the additional load will have on our distribution system. We encourage the developer's electrical consultant to meet with us as soon as practical to plan for the proposed project's electrical requirements. In addition, our records show the existing service to the Sheraton as a primary service at 12.47KV. Therefore, the requirements for the metering might have to be upgraded depending on the amount of additional load. Given the long lead times for electrical service equipment, we cannot emphasize enough the need to meet with the developer's electrical consultant as soon as possible to verify the project's electrical requirements so that service can be provided on a timely basis.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Edward L. Reinhardt
Manager of Engineering

Appendix G

Comments Received on Draft Environmental Assessment

APPENDIX G: COMMENTS RECEIVED ON DRAFT ENVIRONMENTAL ASSESSMENT

This Appendix contains reproductions of letters received in response to the Draft Environmental Assessment. Copies of the Draft EA were sent to the following agencies:

County

County of Maui Planning Department
#Department of Water Supply
#Department of Public Works, Land Use and Codes Administration
#Department of Parks and Recreation
#Department of Human Concerns
#Police Department
#Fire Department

State

#Department of Health (Honolulu and Maui)
#Department of Transportation, Highways
Department of Transportation, Harbors
#Department of Land and Natural Resources
#Department of Land and Natural Resources,
State Historic Preservation Division
#Department of Accounting and General Services (Survey Division)
Department of Business, Economic Development and Tourism
#Department of Labor and Industrial Relations

Federal

#Dept. of the Army, Corps of Engineers

Other

#Maui Electric Company

# Indicates comment letter received

'93 AUG 31 P2:27

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
LAND USE AND CODES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

August 30, 1993

MEMO TO: Brian W. Miskae, Planning Director

F R O M: George N. Kaya, Director of Public Works

SUBJECT: Special Management Area Use Permit and Shoreline-Setback Variance Applications
SHERATON MAUI REDEVELOPMENT
TMK: 4-4-8:5
93/EA-10, 93/SSV-06, 93/SM1-26

We reviewed the subject application and have the following comments:

1. Comments from the Engineering Division:

   a. No comments.

2. Comments from the Wastewater Reclamation Division:

   a. The developer will be required to obtain any additional wastewater capacity through AMFAC's reserve allocation.

   b. Wastewater contribution calculations are required before building permit is issued. A detailed wastewater flow calculation is required to substantiate current and project wastewater flows.

   c. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

   The applicant is requested to contact the Wastewater Reclamation Division at 243-7417 for additional information.

3. Comments from the Solid Waste Division:

   a. The owners and their contractors shall implement solid waste reduction, re-use and recycling programs to reduce the amount of solid waste to be disposed of at the County landfills.

   b. All yard debris shall be composted and re-used on their landscape plantings.

   c. Alternative means of disposal of grubbed material and rock shall be utilized other than disposed of at the County landfills.

   d. Refuse collection shall be by a private collector.

   The applicant is requested to contact the Solid Waste Division at 243-7875 for additional information.

4. Comments from the Land Use and Codes Administration:

   a. A detailed drainage and erosion control plan, to include, but not limited to, hydrologic and hyrdaulic calculations, scheme for controlling erosion and disposal of runoff water is required, and an analysis of the soil loss using the HESL erosion formula, must be submitted for our review and approval. The plan should provide verification that the grading and runoff water generated by the project will not have an adverse effect on the adjacent and downstream properties.

   The applicant is requested to contact the Land Use and Codes Administration at 243-7373 for additional information.

RMN:ey
1293f:Page 24-27

xc: L.U.C.A.
Engineering Division
Solid Waste Division
Wastewater Reclamation Division

Helber Hastert
Planners

September 28, 1993

Mr. George N. Kaya, Director
County of Maui
Department of Public Works and Waste Management
250 South High Street
Wailuku, Maui, HI 96793

Subject: Sheraton Maui Redevelopment
Environmental Assessment
TMK 4-4-08:05
Your Memo to Maui County Planning Dept., August 30, 1993

Dear Mr. Kaya:

Thank you for your memo to the Maui County Planning Department, dated August 30, 1993, commenting on the above referenced project. Your comments have been forwarded to the project developer, architect and civil engineer. After review of your comments, we offer the following responses:

Wastewater Reclamation Division

The design team is studying methods of reducing project wastewater flows through the implementation of an aggressive water conservation program. This program package will include, but not be limited to, flow restrictors, ULF type fixtures where technically feasible and possibly some wastewater (gray water) reuse, if the appropriate permits and technology are available.

The project civil engineers will provide wastewater contribution and detailed wastewater flow calculations as required.

Solid Waste Division

a. ITT Sheraton operates the most aggressive recycling and source reduction program of any hotel company in Hawaii at its Waikiki properties. It is the intent of ITT Sheraton to extend these programs to the outer islands, including Maui, as soon as the various counties develop the infrastructure to recycle the various colors of glass, cardboard, paper, etc. Aluminium is currently recycled. A refrigerated garbage room is being planned to allow the recycling of wet kitchen waste by local farmers. Hopefully, an outlet for this reusable kitchen waste can be found.

b. Yard debris shall be chipped and reused as mulch and compost.

c. This comment has been passed on to the contractor for their action.

d. Refuse collection will be by a private contractor.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

Land Use and Codes Administration

The issues relating to site drainage and erosion control are being addressed by our professional design team. A detailed drainage and erosion control plan and analysis of the soil loss will be submitted for review and approval, as required.

Thank you again for your input and cooperation.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG
Adrienne Wong, Austin Tsutsumi & Associates

LINDA CROCKETT LINGLE
Mayor
CHARMAINE TAVARES
Director
MIKE DAVIS
Deputy Director

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580 KAAHUMANU AVENUE, WAILUKU, HAWAII 96793

(808) 243-7230

93 SEP 28 AM 8:57

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

September 27, 1993

Mr. Brian Miskae, Director
Planning Department
250 S. High Street
Wailuku, HI 96793

Subject: I.D. No.: 93/EA-10, 93/SSV-06, 93/SM1-26
TMK 4-4-08:05; Sheraton Maui Redevelopment
Applicant: Kyo-ya Company, Ltd.

Dear Mr. Miskae:

We have reviewed the subject plans and have no further comments to offer at this time. The applicant has addressed our concern on the beach access parking lot. The proposed lot will have twenty stalls, including one handicapped stall with free public parking.

Thank you for allowing us to comment on applications.

Sincerely,

CHARMAINE TAVARES
Director

CT/rt

Helber Hastert
Planners

September 29, 1993

Ms. Charmaine Tavares, Director
Department of Parks and Recreation
County of Maui
1580 Kaahumanu Ave.
Wailuku, Hawaii 96793

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., September 27, 1993

Dear Ms. Tavares:

Thank you for your letter to the Maui County Planning Department, dated September 27, 1993, responding to the request for comments on the above referenced Draft EA.

We note that you have no further comments on the proposed project, and that the applicant has addressed your concerns on the beach access parking lot.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

LINDA CROCKETT LINGLE
Mayor

BRIAN W. MISKAE
Planning Director

RECEIVED

'93 AUG 23 P2:53

'93 AUG -4 A10:47

MAUI POLICE DEPARTMENT

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII

August 2, 1993

TRANSMITTAL:

TO:

State Agencies:	County Agencies:
XX DOH Maui	XX LUCA (3 Copies)
__ DOH Hnl	XX Water
XX DOT Hwys	XX Parks And Recreation
XX DOT Harbors	__ Human Concerns
__ DOT Airports	XX Fire Dept.
XX DLNR/Hist Presv Office	XX Police Dept
XX DLNR (2 Copies)	__ Corporation Counsel
__ Dept of Agriculture	__
__ DOE/Off of Bus Serv	__
XX DAGS (Survey Division)	Federal:
__ Hawaiian Home Lands	XX Army Corps of Engineers
XX DBEDT	__ Soil Conservation Service
__ Dept Of Human Serv	__
__ Office of Hawn Affrs	__
XX Dept of Labor	Others:
__	XX Maui Electric Company

SUBJECT: I.D. No.: 93/EA-10, 93/SSV-06, 93/SM1-26
THK: 4-4-08:05
Project Name: SHERATON MAUI REDEVELOPMENT
Applicant: Kyo-ya Company, Ltd.

We have no objection or comment at this time. N.C. ... 8/23/93

TRANSMITTED TO YOU ARE THE FOLLOWING:

XX Application	XX Traffic Report
XX Project Plans	XX Archaeological Report
XX Environmental Assessment	XX Infrastructure Report
XX Shoreline Map (LUCA), DLNR	__ Soils Report
XX Drainage Report	__ Previous Agency Comments
__ Draft Ordinance(s)	__ Housing Agreements
__ Unilateral Agreement(s)	__

THESE ARE TRANSMITTED AS CHECKED BELOW:
XX For Your Comment/Recommendation

Please Submit Your Comments/Recommendations By September 2, 1993
Remarks: ______
If additional clarification is required please contact me at 243-7735.

CLAYTON YOSHIDA, AICP
For BRIAN MISKAE, Planning Director

BWM:CY:osy
cc: Colleen Suyama, Current Planning Division Chief
Wayne Judd, ITT Sheraton
Leslie Kurisaki, Helber Hastert & Fee
Clayton Yoshida, AICP
Charles Jencks, DPW

LINDA CROCKETT LINGLE
MAYOR

RONALD P. DAVIS
CHIEF

RONALD DeMELLO
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE CONTROL

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 243-7561

August 10, 1993

'93 AUG 11 P12:23

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMO TO: PLANNING DEPARTMENT

FROM: LEONARD NIEMCZYK, FIRE INSPECTOR

SUBJECT: 93/EA-10; 93/55V-06; 93/SMI-26
TMK: 4-4-08:05
PROJECT NAME: SHERATON MAUI REDEVELOPMENT
APPLICANT: KYO-YA COMPANY, LTD.

Thank you for the opportunity to review and comment on the above project request.

Please be informed that we have no objections to the applicants request at this time. However, the project will be subject to Fire Code requirement upon submittal for a Building Permit for compliance with the Uniform Fire Code, as amended.

Helber Hastert
Planners

September 28, 1993

Mr. Leonard Niemczyk, Fire Inspector
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Maui, HI 96732

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 10, 1993

Dear Mr. Niemczyk:

Thank you for your letter to the Maui County Planning Department, dated August 10, 1993, responding to the request for comments on the above referenced Draft EA. We note that your office has no objections to the applicant's request. The project will comply with all applicable fire code requirements.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

JOHN WAIHEE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH
Acting DISTRICT HEALTH SERVICES ADMINISTRATOR (M.D.)

'93 AUG 12 P3:47
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

August 10, 1993

Mr. Brian Miskae
Director
Department of Planning
County of Maui
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Miskae:

Subject: 93/EA-10, 93/SSV-06, 93/SM1-26, Sheraton Maui Redevelopment, Lahaina, Hawaii, TMK: 4-4-08: 05

Thank you for the opportunity to review and comment on the subject application. We have no comments to offer at this time.

Sincerely,

David H. Nakagawa
DAVID H. NAKAGAWA
Chief Sanitarian, Maui

Helber Hastert
Planners

September 28, 1993

Mr. David H. Nakagawa
Chief Sanitarian, Maui
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, HI 96793

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 10, 1993

Dear Mr. Nakagawa:

Thank you for your letter to the Maui County Planning Department, dated August 10, 1993, responding to the request for comments on the above referenced Draft EA. We note that your office has comment on the subject application.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki
Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

Helber Hastert & Fee
Grosvenor Center, PBR Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

August 19, 1993

REX D JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
Kanani Holt
CALVIN M. TSUDA

'93 AUG 24 P1 12

IN REPLY REFER TO:
HWY-PS
2.8075

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Mr. Brian Miskae
Director
Planning Department
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Miskae:

Subject: Sheraton Maui Redevelopment
SMAP/Shoreline Setback Variance Applications
TMK: 4-4-08: 05

Thank you for your transmittal of August 2, 1993, requesting our comments on the proposed project.

We feel that the traffic congestion at the intersection of Kaanapali Parkway and Honoapiilani Highway is now the worst traffic problem in West Maui. We intend to correct this current problem by constructing improvements at that intersection. We plan to advertise this project for bids within three months and complete the construction in the second quarter of 1994.

Because of funding and other problems, we will not complete the Lahaina Bypass project by the time the renovation of Sheraton Maui is completed. Any problems caused by the new traffic generated by the renovated Sheraton Maui will show up at the intersection of Kaanapali Parkway and Honoapiilani Highway.

We recommend that you require the applicant to reassess the traffic situation at Kaanapali Parkway/Honoapiilani Highway intersection a few months after the reopening of the hotel to see if any further improvements can be made to the intersection.

The applicant should be responsible for the cost of the reassessment and the further improvements needed at the intersection. In the reassessment, the applicant's consultant should assume a worst-case situation where most of the users of the new meeting facilities are coming from outside of the Kaanapali Beach Resort area.

Sincerely,

for Rex D. Johnson
Director of Transportation

Helber Hastert
Planners

September 28, 1993

Mr. Rex D. Johnson
Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Subject: Sheraton Maui Redevelopment
Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 19, 1993

Dear Mr. Johnson:

Thank you for your August 19, 1993 letter to the Maui County Planning Department, providing comments on the above-referenced project. Your comments have been forwarded to the project owner/applicant, architect and traffic consultant.

The applicant and their traffic engineers, Parsons Brinckerhoff, Inc., will continue to work closely with both your Department and the County of Maui to monitor the traffic situation at the intersection of Kaanapali Parkway and Honoapiilani Highway.

Thank you again for your input and cooperation.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG
Rob Miyasaki, Parsons Brinckerhoff, Inc.

Helber Hastert & Fee
Grosvenor Center, 733 Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

JOHN WAIHEE
GOVERNOR OF HAWAII

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

KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P. KEPPELER, II
DONA L. HANAIKE

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

'93 SEP 14 P2:15

REF:OCEA:SKK

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
SEP 13 1993

FILE NO: 94-068
DOC. NO: 3445

The Honorable Brian W. Miskae, Director
Planning Department
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Miskae:

Subject: Special Management Area Permit/Shoreline Setback Variance Applications (93/EA-10, 93/SSV-06, 93/SM1-26): Sheraton Maui Redevelopment, Kaanapali, Maui, TMK: 4-4-08: 5

We have reviewed the information for the proposed project transmitted by your memorandum dated August 2, 1993, and have the following comments:

Division of Land Management

The Division of Land Management comments that they are not in concurrence to the construction of permanent improvements within the Shoreline Setback Area unless they are permitted with the ordinance regulations.

Office of Conservation and Environmental Affairs

The Office of Conservation and Environmental Affairs comments that the old pier at the northern end of the property is located within the Conservation District. As such, the renovation/redevelopment of this pier will require that a Conservation District Use Application (CDUA) is filed with our Department and approved by the Board of Land and Natural Resources.

Any other activities in areas makai of the certified shoreline will require consultation with our office for possible CDUA requirements.

Division of Aquatic Resources

The Division of Aquatic Resources notes that their previous comments contained in our letter of April 15, 1993 (attached in Appendix F of the DEA), remain applicable.

We reiterate the comments of our Historic Preservation Division which were forwarded to you directly in their letter dated September 2, 1993.

We have no other comments to offer at this time. Thank you for the opportunity to comment on this matter.

Please feel free to contact Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

KEITH W. AHUE

Helber Hastert
Planners

September 28, 1993

Mr. Keith W. Ahue
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96808

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., September 13, 1993
(File No. 94-068)

Dear Mr. Ahue:

Thank you for your letter of September 13, 1993 to the Maui County Planning Department, providing comments on the above-referenced project. We have reviewed your comments and offer the following responses:

Division of Land Management

This division commented that "they are not in concurrence to the construction of permanent improvements within the Shoreline Setback Area unless they are permitted with the ordinance regulations."

The project will comply with the Shoreline Setback Rules and Regulations of the County of Maui. Some construction is proposed within the 150-foot shoreline setback at the Black Rock area of the property, and the developer has applied for a shoreline setback variance (SSV) with the County of Maui. The environmental assessment was submitted in conjunction with the application. The SSV request is limited to the Black Rock area, which has unique physical and geological characteristics making it less vulnerable to coastal storm hazard and beach erosion than other beachfront areas. For example, the Black Rock is a rocky outcrop, and proposed structures will be situated from 30 to 70 feet above mean sea level.

Finally, as a follow up to a phone conversation with representatives from your Maui District Office, we'd like to emphasize that there are no proposed improvements or structures makai of the certified shoreline.

Office of Conservation and Environmental Affairs

This office comments that the old pier is located within the Conservation District and that a Conservation District Use Application (CDUA) will be required for renovation of the pier. We acknowledge that renovation of the old pier will require a CDUA. Other than the pier renovation, there will be no other development activities makai of the certified shoreline which would require a CDUA.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

Division of Aquatic Resources

Your letter reiterates the comments made in an earlier April 15 letter by the Division of Aquatic Resources. In that April 15 letter, mitigation measures were recommended to minimize erosion and siltation. These included scheduling site work for periods of minimal rainfall, replanting or covering lands denuded of vegetation, and preventing construction materials and debris from entering the aquatic environment. Your comments have been forwarded to the owner/applicant, architect, civil engineer and construction contractor. These and other erosion control measures will be followed during site work and project construction.

We will be responding directly to the State Historic Preservation Division, concerning their comments. As recommended, a qualified archaeologist will be on site to monitor major sub-surface excavation. The applicant and their archaeological consultants will continue to work closely with the State Historic Preservation Division and will comply with all conditions pertaining to historic preservation and archaeological resources.

Thank you again for your input and cooperation.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG
Adrienne Wong, Austin Tsutsumi & Associates

JOHN W. LEWIS
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

KEITH AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER II
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

September 2, 1993

Mr. Brian Miskae, Director
Maui Planning Department
250 South High Street
Wailuku, Maui, Hawaii 96793

LOG NO: 9090
DOC NO: 9309AG54

Dear Mr. Miskae:

SUBJECT: County of Maui, Historic Preservation Review of the Proposed Sheraton Maui Redevelopment (93/EA-10, 93/SSV-06, 93/SM1-26)
Hanakao'o, Lahaina, Maui
TMK: 4-4-08: 05

Thank you for the opportunity to comment on the Special Management Area Use Permit and shoreline setback variance applications for the proposed renovation of the existing hotel facilities.

This proposed project has undergone historic preservation review as reflected in the Draft Environmental Assessment's Chapter IV and Appendix C. Historic preservation concerns have been adequately addressed in Chapter IV-4 through IV-6. An archaeological inventory survey was conducted and the findings were summarized and incorporated in the draft EA. Although the findings were negative, we have recommended that archaeological monitoring be conducted during excavations. This recommendation has also been included. Appendix C contains a copy of the accepted final report and a copy of our review of the report. The requested trench profile drawings have been submitted to our office.

Should these applications be approved, we recommend that the following condition be attached to the approved permit:

> A qualified archaeologist shall monitor all activities involving below grade disturbance. If historic remains are encountered, the monitoring archaeologist shall be allowed sufficient time to recover significant data. For inadvertent discovery of human burials, the developer shall comply with Chapter 6E-43.6 (H.R.S.). An acceptable

> monitoring report shall be submitted to the State Historic Preservation Division at the completion of the project.

Please contact Ms. Annie Griffin at 587-0013 if you have any questions.

Sincerely,

DON HIBBARD, Administrator
State Historic Preservation Division

AG:amk

Helber Hastert
Planners

September 28, 1993

Mr. Don Hibbard, Administrator
State Historic Preservation Division
State of Hawaii
Department of Land and Natural Resources
33 South King Street, 5th Floor
Honolulu, HI 96813

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., September 2, 1993

Dear Mr. Hibbard:

Thank you for your letter of September 2, 1993 to the Maui County Planning Department, providing comments on the above-referenced project. Your letter has been forwarded to the project owner/applicant, project architect and archaeological consultant.

As you have recommended, a qualified archaeologist will be present on site to monitor major subsurface excavation activity. Should human remains be encountered at any time during project construction, archaeological consultation will be sought immediately.

The applicant and their archaeologists, Paul H. Rosendahl, Ph.D. Inc., will continue to work closely with your Department and will comply with all permit conditions pertaining to historic preservation and archaeological resources.

Thank you again for your input and cooperation.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG
Alan Walker, PHRI

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P. O. BOX 119
HONOLULU, HAWAII 96810

RUSSEL S. NAGATA
COMPTROLLER

'93 AUG -9 P12:27

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED FILE NO. _____

August 5, 1993

TRANSMITTAL

TO: Mr. Brian Miskae, Director

ATTN.: Mr. Clayton Yoshida

SUBJECT: I. D. No. 93/EA-10, 93/SSV-06, 93/SM1-26
TMK: 4-4-08:05
Project Name: Sheraton Maui Redevelopment
Applicant: Kyo-ya Company, Ltd.

REMARKS:

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations and Benchmarks are affected. Survey has no objections to the proposed project.

STANLEY T. HASEGAWA
Acting State Land Surveyor

Helber Hastert
Planners

September 28, 1993

Mr. Stanley T. Hasegawa
Acting State Land Surveyor
State of Hawaii
Department of Accounting and General Services
Survey Division
P.O. Box 119
Honolulu, HI 96810

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 5, 1993

Dear Mr. Hasegawa:

Thank you for your letter to the Maui County Planning Department, dated August 5, 1993, responding to the request for comments on the above referenced Draft EA. We note that your office has no objections to the proposed project.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
830 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

'93 SEP -8 P2:14

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

DAYTON M. NAKANELUA
DIRECTOR
ALFRED C. LARDIZABAL
DEPUTY DIRECTOR

August 31, 1993

Mr. Brian Miskae
Planning Director
Maui Planning Department
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Miskae:

Thank you for the opportunity to comment on the Sheraton Maui Redevelopment Draft Environmental Assessment (TMK 4-4-08:05).

As indicated in the report, the Sheraton Maui renovation will create 800 construction related jobs, as well as other indirect employment. This will provide construction workers with some much-needed employment opportunities. However, the Department is concerned about the 300 hotel workers who will be temporarily displaced for a year while the hotel is being rebuilt. Every effort should be made to refer these workers to this Department so that appropriate services can be provided them.

Thank you for providing us the opportunity to comment on the project. If you need more information or have any questions, please call Frederick Pang, Chief, Research and Statistics Office, at 586-8999.

Sincerely,

for Dayton H. Nakanelua
Director

Heller Hastert
Manners

September 28, 1993

Mr. Dayton M. Nakanelua, Director
State of Hawaii
Department of Labor and Industrial Relations
830 Punchbowl Street
Honolulu, HI 96813

Subject: Sheraton Maui Redevelopment
Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 31, 1993

Dear Mr. Nakanelua:

Thank you for your letter of August 31, 1993 to the Maui County Planning Department, commenting on the above-referenced project. You note that the Department is concerned about the 300 hotel workers who will be temporarily displaced during the hotel redevelopment.

Recently, the Sheraton Maui Hotel formally announced its plans for the redevelopment project and the 12-month closure of the hotel during the renovation. The hotel closure is anticipated to commence in the fourth quarter of 1994. Based on the requirements of the federal Dislocated Workers Act (EDWAA), a minimum 60-day official notice will be provided to employees prior to closure of the hotel. Letters regarding the hotel closure will also be sent to your Department, to the Maui County Mayor, and Tony Rutledge, head of Local 5. In the case of non-union employees, letters will be sent individually.

As the closure is viewed as a temporary layoff with full rights to rehire, the hotel intends to guarantee a minimum 90-days of health care coverage to employees eligible prior to the layoff, as was done at the Sheraton Kauai. This will include both union members and non-union staff.

It may be possible to retain certain employees to maintain grounds and security. Others are eligible for unemployment compensation benefits and some employees may be eligible for early retirement. Outplacement and training programs will also be offered with the assistance of the State's "rapid response team" under EDWAA. Sheraton Maui employees will assisted in placement at other Sheraton Hawaii hotels.

Sheraton management has had informal discussions with representatives of the Local 5 union, and will meet formally at least 90-days prior to the anticipated hotel closure, to discuss and resolve closure issues.

Finally, as you suggest, every effort will be made to refer these workers to your Department so that appropriate services can be provided to them.

Thank you again for your input and cooperation.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 230
FT. SHAFTER, HAWAII 96858-5440

'93 AUG 16 P1:17

August 13, 1993

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

REPLY TO
ATTENTION OF:

Planning Division

Mr. Clayton Yoshida
Maui Planning Department
County of Maui
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Yoshida:

Thank you for the opportunity to review and comment on the Special Management Area Permit Application for the Sheraton Maui Redevelopment Plan (TMK 4-4-8: 05). The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. File Number PO93-042 has been assigned to your project. As stated in a previous letter from our Operations Division dated April 7, 1993, any work in waters of the U.S. will require a DA permit as well as renovations to the existing pier. Please contact our Operations Division at 439-9258 for further information.

b. The flood hazard information provided on page IV-3 is correct.

Sincerely,

Thomas Ushijima, P.E.
Acting Director
of Engineering

Helber Hastert
Planners

September 28, 1993

Mr. Thomas Ushijima, P.E.
Acting Director of Engineering
Department of the Army
U.S. Army Engineer District, Honolulu
Bldg. 230
Fort Shafter, Hawaii 96858-5440

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 13, 1993

Dear Mr. Ushijima:

Thank you for your letter to the Maui County Planning Department, dated August 13, 1993, responding to the request for comments on the above referenced Draft EA.

As noted in the Draft EA, redevelopment of the pier is not a part of the subject project or proposed action. However, should the applicant be involved in any future renovation of the pier, your office will be contacted regarding possible DA permit requirements.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96732-0398 • (808) 871-8461

August 13, 1993

Mr. Brian Miskae, Planning Director
County of Maui
Maui Planning Department
250 S. High Street
Wailuku, HI 96793

Dear Mr. Miskae:

Subject: Sheraton Maui Redevelopment
TMK: 4-4-08:05

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

In reviewing the information transmitted and our records, we have no objection to the subject project. We have already been in contact with Helbert Hastert and Fee, Planners about our concerns on the impact of this project to our distribution system. Therefore, we encourage the developer's electrical consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

for Edward L. Reinhardt
Manager, Engineering

cc: Leslie Kurisaki, Helbert Hastert and Fee, Planners ✓

Helber Hastert
Planners

September 28, 1993

Mr. Edward L. Reinhardt
Manager, Engineering
Maui Electric Company, Ltd.
210 West Kamehameha Ave.
P.O. Box 398
Kahului, Maui, HI 96732-0398

Subject: Sheraton Maui Redevelopment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., August 13, 1993

Dear Mr. Reinhardt:

Thank you for your letter to the Maui County Planning Department, dated August 13, 1993. Your comments have been forwarded to the project developer, architect and electrical engineers. Mr. Al Kilburg of Douglas V. MacMahon, Ltd., the project's electrical consultant, will contact you to discuss the project's electrical requirements, as you have recommended.

Thank you again for your input and cooperation.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG
Al Kilburg, Douglas MacMahon Ltd.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

University of Hawaii at Manoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822
Telephone: (808) 956-7361

September 21, 1993
EA:00029

County of Maui Planning Department
Attention: Clayton Yoshida
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Yoshida:

Draft Environmental Assessment (EA)
Sheraton Maui Redevelopment
Lahaina, Maui

Kyo-ya Company, Ltd proposes to renovate the Sheraton Maui Hotel. The project will include renovation of the original Cliff Tower and Garden Tower, demolition of the Molokai wing, the addition of several new structures including a new "Garden Wing," Seaside Village (4, five story structures), conference facilities, parking structures, swimming pool and associated recreational facilities. The plan also includes a concept design for renovation of an old pier located on the northern end of the site.

The Environmental Center has reviewed the proposed project with the assistance of Bion Griffin, Anthropology; and Carolyn McCool, Environmental Center.

GENERAL COMMENTS

In general, we find that this environmental assessment is deficient in that it does not fulfill the intent of Chapter 343, Hawaii Revised Statues pursuant to HRS 343-5 (c), nor does it follow the guidelines for multiple or phased applicant or agency action under 11-200-7 (HAR). As a consequence, the potential significance of the project as defined under Section 11-200-12 (HAR), cannot be determined from the information provided. More specifically, we note that, "the plan includes a long term development concept for restoration of the old pier..." however, the EA does not address potential impacts associated with the construction, renovation or operation of this pier. Instead, the EA states that at such time as the renovation of the pier is to proceed, that a supplemental EA may be required.

If the pier is to be a part of this development, then its renovation and any potential impacts generated by its operation should be addressed in this document, in accordance with HRS 343, (HAR) 11-200-7 and (HAR) 11-200-12. Furthermore given the potential significance of the impacts of structures in the coastal area and on coastal near shore processes, it is likely that the impacts of the construction/renovation of the pier may have a significant effect on the environment, hence requiring the preparation of an environmental impact statement.

ARCHAEOLOGY

We note in Appendix C, Archaeological Subsurface Inventory Survey, that no subsurface archaeological remains were unearthed during that survey. However, we also note that the Appendix cites the evidence of extensive "proto-historic period" hawaiian populations along this coastal area. It is our understanding that burials were encountered when this hotel was originally constructed. Hence our reviewers are concerned that burials may be present in the existing cottage area. Considering the evidence for large scale occupation of this coastal area and the prior archeological discoveries, we urge that an archaeological monitor be on site during any excavations.

We appreciate the opportunity to review this document and look forward to receiving your response.

Sincerely,

Jacquelin N. Miller
Associate Environmental Coordinator

cc: OEQC
Kyo-ya Company, Ltd.
Helber Hastert and Fee, Planners
Roger Fujioka
Bion Griffin
Carolyn McCool

Helber Hastert
Planners

September 29, 1993

Ms. Jacquelin N. Miller
Associate Environmental Coordinator
Environmental Center
University of Hawaii at Manoa
Crawford 317, 2550 Campus Road
Honolulu, HI 96822

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., September 21, 1993

Dear Ms. Miller:

Thank you for your letter of September 21, 1993 to the Maui County Planning Department, providing comments on the above-referenced project. We strongly disagree with your assessment that the document is "deficient." We believe that the EA adequately describes the potential environmental impacts and proposed mitigation and fulfills the requirements of Chapter 343 HRS.

We offer the following responses to your comments:

General Comments

Your letter states that "In general, we find this environmental assessment deficient in that it does not fulfill the intent of Chapter 343...nor the guidelines for multiple or phased applicant or agency action under 11-200-7 (HAR)." In support of this statement, you note that the EA does not address potential impacts associated with the construction, renovation or operation of the old pier.

Redevelopment of the old pier is not a part of the proposed action, but is part of a long-term plan which will require the cooperation of the adjacent landowner and the community, and will be subject to further environmental review at that time. The concept plan presented in the EA was intended to be illustrative only. Because no detailed plans or designs for the pier renovation have been completed, it would be inappropriate to conduct an environmental assessment at the present time. If and when the project is initiated in the future, an EA, in accordance with Chapter 343, HRS, is likely to be triggered by:

- Use of State or County lands or funds, if the State or County is participating in the project; and/or
- Use of State Conservation District lands, as the pier is located within the State Conservation District, and will require a Conservation District Use Application.

Helber Hastert & Fee
Grosvenor Center, Pali Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545 2055
Facsimile 808 545 2050

At that time, more detailed plans for the pier redevelopment will be available, and the project's environmental impacts can be more accurately assessed.

Archaeology

The DLNR-SHPD has reviewed the archaeological survey report prepared by Paul H. Rosendahl, Inc. and has provided written comments to the Maui County Planning Department. In their comment letter, dated September 2, 1993, the DLNR-SHPD recommends that a qualified archaeologist monitor all activities involving below grade disturbance. If historic remains are encountered, DLNR-SHPD recommends that the monitoring archaeologist be allowed sufficient time to recover significant data. In the event human burials are discovered, it is noted that the developer shall comply with Chapter 6E43.6, HRS. Finally, an acceptable monitoring report to DLNR-SHPD is requested, upon completion of construction.

The applicant will provide a qualified archaeologist on site to monitor major subsurface excavation as recommended by DLNR-SHPD, and will comply with all other conditions required by the County. Should any human remains be encountered during project construction, archaeological consultation will be sought immediately. The project archaeologists will continue to work closely with the DLNR-SHPD staff throughout the construction period.

Summary

Overall, we believe that the EA fulfills the intent of Chadequately addresses and discusses the project's potential environmental impacts and mitigation measures. The EA was prepared in consultation with appropriate County, State and federal agencies, whose concerns and comments have been incorporated into the document. Based on the agency input and the findings of our technical consultants, we believe that the proposed action will not have a significant environmental or ecological effect.

Thank you again for your input.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

LINDA CROCKETT LINGLE
Mayor
STEPHANIE AVEIRO
Director
KENBY OLIVA
Deputy Director

200 SOUTH HIGH STREET, WAILUKU, HAWAII 96793 (808) 243-7805

September 29, 1993

TO: Mr. Brian Miskae
Director of Planning

FROM: Ms. Stephanie Aveiro
Director of Housing and Human Concerns

SUBJECT: Sheraton Maui Redevelopment
Applications for Special Management Area Permit & Shoreline Setback Variance
I.D. No. 93/EA-010, 93/SM1 026, 93/SSV-006
TMK: 4-4-08:05

We have reviewed the following documents:

1. Mr. Clayton Yoshida's September 17, 1993 transmittal letter

2. Kyo-ya Company, Ltd.'s Applications for Special Management Area Permit and Shoreline Setback Variance

3. Draft Environmental Assessment Report for the subject project

and would like to offer the following comments:

1. The applicant states in the Special Management Area Permit Application and draft Environmental Assessment Report that the proposed redevelopment of the Sheraton Maui Hotel will not increase the total number of hotel rooms. That being the case, the proposed project falls under the provisions of Section 14.64.050A of the Maui County Code, and is excluded from the County's affordable housing policy for the hotel-related developments.

2. The applicant states in the draft Environmental Assessment Report that the Maui County Planning Commission has established policy guidelines relating to employee housing requirements for hotel developments.

The applicant should be advised that the Maui County Planning Commission's Resolution No. 2 (1987), Relating To An Employee Housing Policy For Hotel-Related Developments, is superseded by Maui County Ordinance No. 2093 which established an Affordable Housing Policy for Hotel-Related Developments (effective March 20, 1992).

3. The applicant has satisfactorily addressed all of the questions in my April 1, 1993 letter to Ms. Leslie Kunisaki. Therefore, we do not have any additional comments to offer.

Please call Mr. Wayde Oshiro or Mr. Edwin Okubo of our Housing Division at ext. 7351 should you have any question.

WTO:hs

xc: Housing Administrator ✓

Helber Hastert
Planners

September 30, 1993

Ms. Stephanie Aveiro, Director
Department of Housing and Human Concerns
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Memo to Maui County Planning Dept., September 29, 1993

Dear Ms. Aveiro:

Thank you for your memo to the Maui County Planning Department, dated September 29, 1993, responding to the request for comments on the above referenced Draft EA.

We note that since the redevelopment of the Sheraton Maui Hotel will not increase the total number of hotel rooms, the project is excluded from the County's affordable housing policy for hotel-related developments. We have also noted that the Planning Commission's 1987 policy guidelines concerning employee housing have been superseded by Maui County Ordinance No. 2093, Affordable Housing Policy for Hotel-Related Developments, effective March 20, 1992.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG

Helber Hastert
Planners

September 30, 1993

Mr. David R. Craddick, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, HI 96783-7109

Subject: Sheraton Maui Redevelopment
Draft Environmental Assessment
TMK 4-4-08:05
Your Letter to Maui County Planning Dept., September 23, 1993

Dear Mr. Craddick:

Thank you for your letter to the Maui County Planning Department, dated September 23, 1993, responding to the request for comments on the above referenced Draft EA.

Your letter has been forwarded to the owners and their engineering consultants. We note that your department has no objections to the on and near-site improvements, based on an estimated 2,000 gallons per day increase in water use. Domestic and fireflow water use calculations will be submitted to your department as required. Finally, as you have recommended, the project will incorporate water efficient design and landscaping.

We appreciate your review of the EA.

Sincerely,

HELBER HASTERT & FEE, Planners

Leslie Kurisaki

Leslie Kurisaki
Project Planner

cc: Brian Miskae, Maui County Planning Director
Wayne Judd, ITT Sheraton
Shinji Yanai, Kyo-ya Company, Ltd.
Kevin Chun, WATG
Adrienne Wong, ATA

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545 2050

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

September 23, 1993

Mr. Brian H. Miskae, Director
County of Maui Planning Department
Wailuku, Hawaii 96793

Dear Mr. Miskae,

Re: Sheraton Maui Redevelopment, TMK 4-4-08:005, Kaanapali; Request for Environmental Assessment, Shoreline Setback Variance and Special Management Area Use Permit Approvals, 93/EA-10, 93/SSV-06, 93/SMI-26.

We have no objections to the on- and near-site improvements for the project based on the applicant's estimate of an increase of 2000 gallons-per-day (gpd) in water use for the renovated project at full occupancy.

However, this is not an endorsement for the proposed Amfac water development plans and new wells also presented in the report.

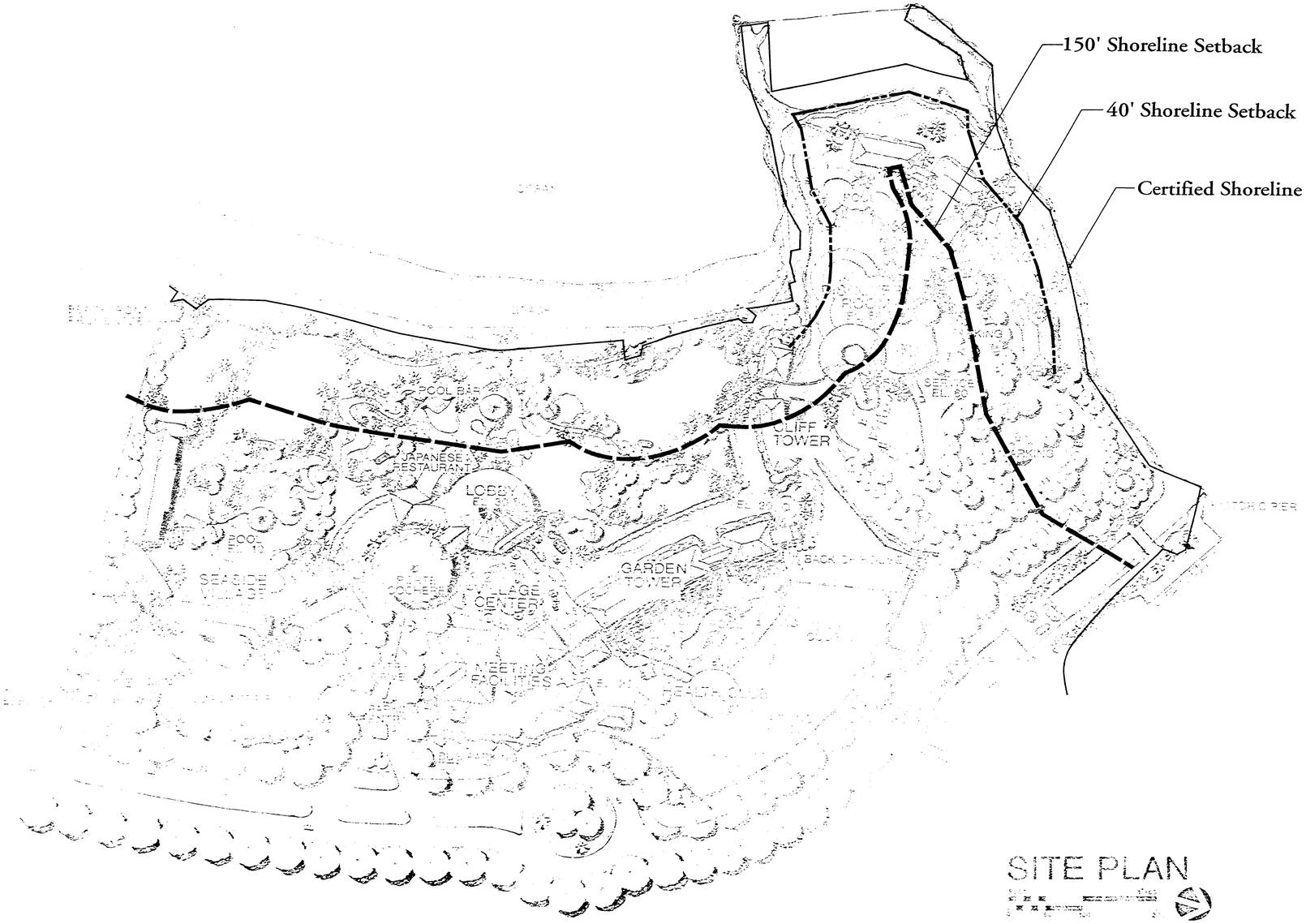
The applicant will be required to submit domestic and fireflow water use calculations to demonstrate adequate water for the project.

We note that the applicant plans for a non-domestic consumption of 124,200 gpd. The applicant should be advised to incorporate water-efficient soil preparation, irrigation and water-feature designs into the project. Water feature designs should incorporate techniques to minimize water use, such as shading the waters from the sun, screening the waters from the wind and using non-misting jets. Guidance in water-efficient landscaping may be found in the attached document or in the Maui County Planting Plan. We are confident that the project's designers can modify the techniques presented in these and other references to create a lush experience in a technically water-efficient landscape.

Sincerely,

David R. Craddick, Director

DDS



SITE PLAN

PREPARED FOR
Kyoya company, ltd.
KOKUSAI KOGYO GROUP

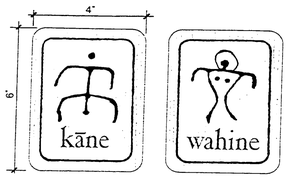
PROJECT #92150
CONCEPT DESIGN
18 MAY 1993

SHERATON MAUI
REDEVELOPMENT

Wimberly Allison Tong & Goo
Architects and Planners
Honolulu, Hawaii

A-4

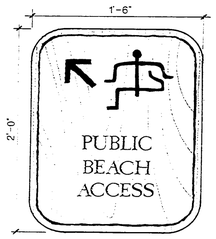
0084 I



Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Message: Carved. Painted white.

Message Schedule

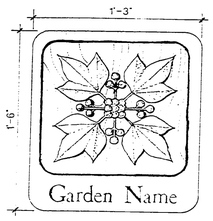
SIGN TYPE-NO.	MESSAGE	FUNCTION
I-1	(SYMBOL) kāne	Men's Restroom ID
I-2	(SYMBOL) wahine	Women's Restroom ID



Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Message: Carved. Painted white.

Message Schedule

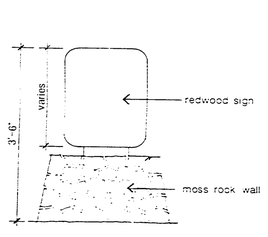
SIGN TYPE-NO.	MESSAGE	FUNCTION
H	↖ (SYMBOL) Public Beach Access	Directional, Pedestrian



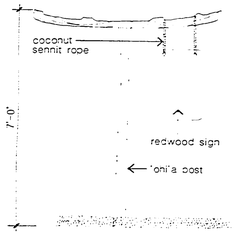
Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Message: Symbol- carved relief.
Text- Carved. Painted white.

Message Schedule

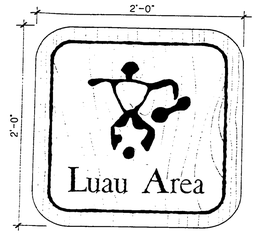
SIGN TYPE-NO.	MESSAGE	FUNCTION
G-1	(SYMBOL) Ginger and Heliconia Garden	Theme Garden ID
G-2	(SYMBOL) Native Hibiscus Garden	Theme Garden ID
G-3	(SYMBOL) Palm Garden	Theme Garden ID
G-4	(SYMBOL) Plumeria Garden	Theme Garden ID
G-5	(SYMBOL) Japanese Garden	Theme Garden ID
G-6	(SYMBOL) Tropical Fruit and Flower Garden	Theme Garden ID
G-7	(SYMBOL) Rainforest Garden	Theme Garden ID
G-8	(SYMBOL) Tropical Flower Garden	Theme Garden ID
G-9	(SYMBOL) Native Hawaiian Coastal Garden	Theme Garden ID



MOUNTING OPTION "B"- Moss Rock Wall



MOUNTING OPTION "A"- Hawaiian Storage Rack



Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Message: Carved. Painted white.

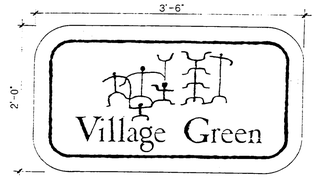
Message Schedule

SIGN TYPE-NO.	MESSAGE	FUNCTION
F	(SYMBOL) Luau Area	Area ID, Pedestrian

Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Message: Carved. Painted white.

Message Schedule

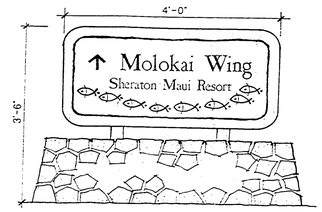
SIGN TYPE-NO.	MESSAGE	FUNCTION
E	(SYMBOL) Seaside Village	Area ID, Pedestrian



Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Message: Carved. Painted white.

Message Schedule

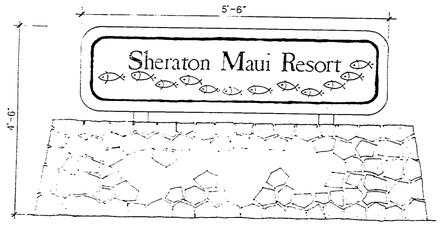
SIGN TYPE-NO.	MESSAGE	FUNCTION
D	(SYMBOL) Village Green	Area ID, Pedestrian



Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Base: Moss rock wall.
Message: Carved. Painted white.

Message Schedule

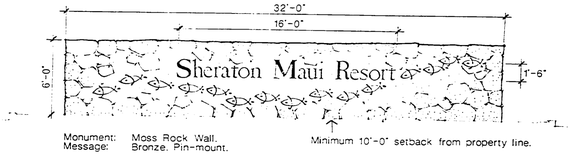
SIGN TYPE-NO.	MESSAGE	FUNCTION
C-1	↑ Molokai Wing Sheraton Maui Resort (SYMBOL)	Directional, Pedestrian
C-2	↑ Lobby Parking → (SYMBOL)	Directional, Vehicular
C-3	← Lobby Molokai Wing ↑ (SYMBOL)	Directional, Vehicular



Monument: Redwood. Border- smooth finish.
Field- natural, rough finish.
Base: Moss rock wall.
Message: Carved. Painted white.

Message Schedule

SIGN TYPE-NO.	MESSAGE	FUNCTION
B	Sheraton Maui Resort (SYMBOL)	Hotel ID



Monument: Moss Rock Wall.
Message: Bronze, Pin-mount.

Minimum 10'-0" setback from property line.

Message Schedule

SIGN TYPE-NO.	MESSAGE	FUNCTION
A	Sheraton Maui Resort (SYMBOL)	Hotel ID

PREPARED FOR Kyoya company, ltd.

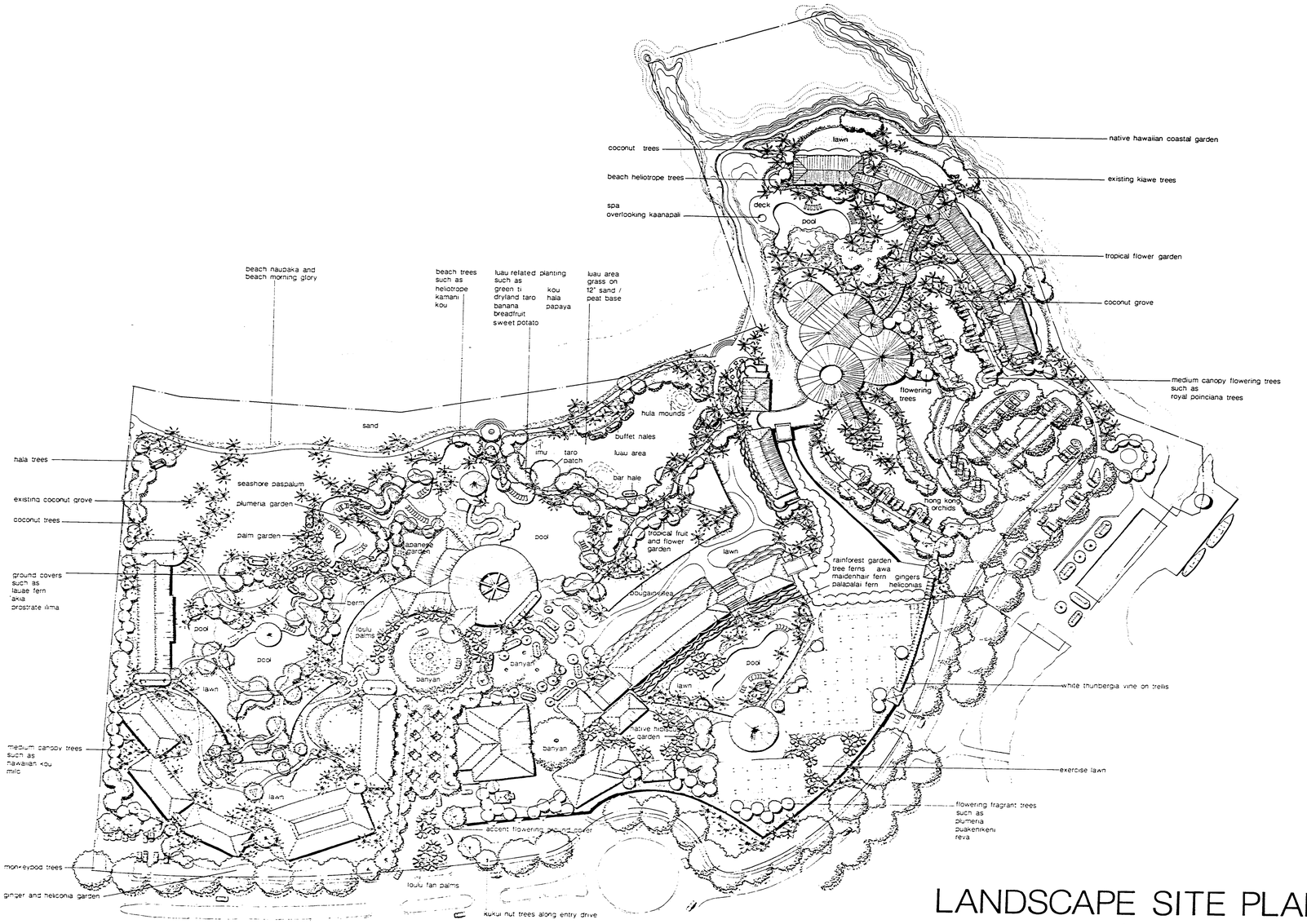
PROJECT #92190
CONCEPT DESIGN
1 NOVEMBER 1992

SHERATON MAUI
REDEVELOPMENT

walters kimura motoda
Landscape Architects

WHTG Wimberly Allison Tong & Goo
Architects and Planners
Honolulu, Hawaii

0084J



LANDSCAPE SITE PLAN

FEET 0 50 100 200 1"=60'

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, landscape concepts illustrated are still applicable to the current plan.

PREPARED FOR
Kyoya company, ltd.
KOKUSAI KOGYO GROUP

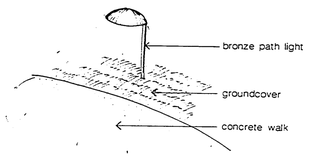
PROJECT #9219C
CONCEPT DESIGN
1 NOVEMBER 1992

SHERATON MAUI
REDEVELOPMENT

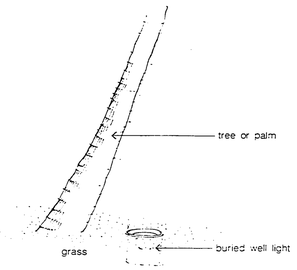
walters kimura motoda
landscape architects

WATG
Wimberly Allison Tong & Goo
Architects and Planners
Honolulu, Hawaii

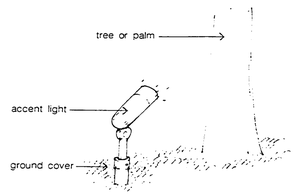
D084K



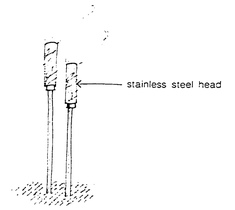
PATH LIGHT DETAIL



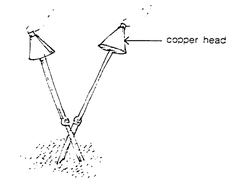
WELL LIGHT DETAIL



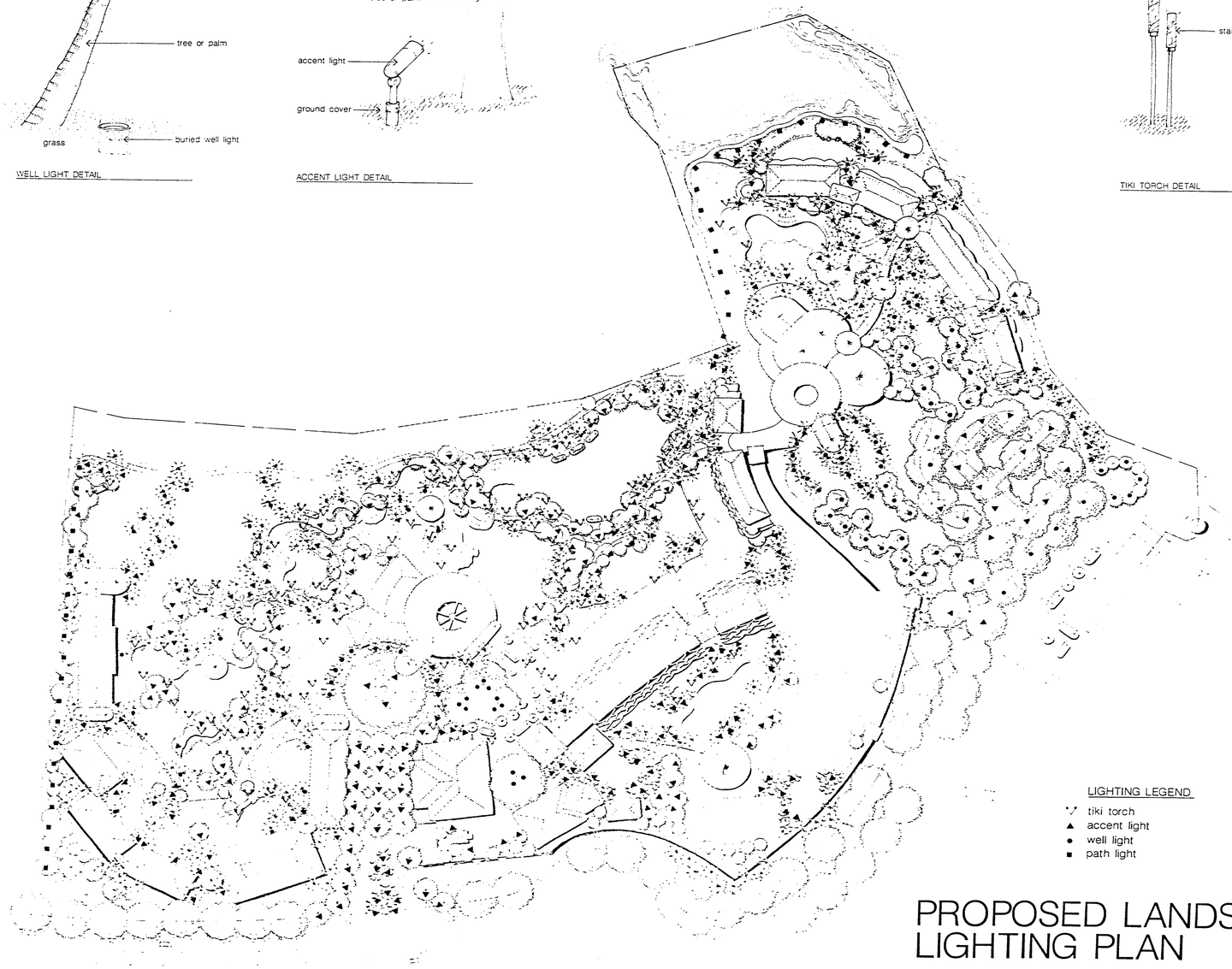
ACCENT LIGHT DETAIL



TIKI TORCH DETAIL



TIKI TORCH DETAIL



LIGHTING LEGEND

- tiki torch
- accent light
- well light
- path light

PROPOSED LANDSCAPE LIGHTING PLAN

FEET 0 50 100 200 1"=60'

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, lighting concepts illustrated are still applicable to the current plan.

PREPARED FOR
Kyoya company, ltd.
KOHLSA KOSAI GROUP

PROJECT #92190
CONCEPT DESIGN
1 NOVEMBER 1992

SHERATON MAUI
REDEVELOPMENT

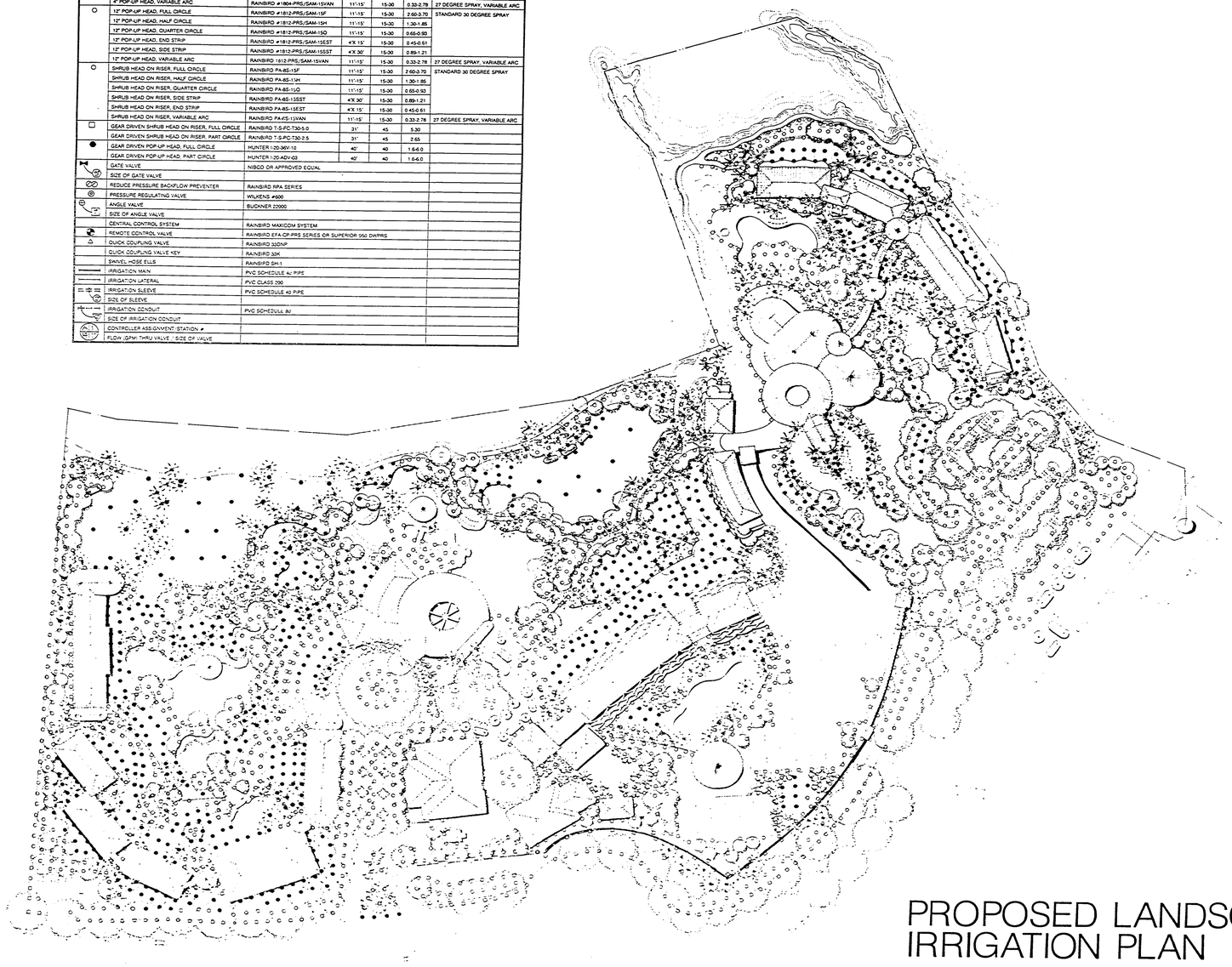
walters kimura moroda
LANDSCAPE ARCHITECTS

WATG
Wimberly Allison Tong & Goo
Architects and Planners
Honolulu, Hawaii

0084 L

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NO.	RADIUS	PSI	GPM	REMARKS
●	4" POP-UP HEAD, FULL CIRCLE	RAINBIRD #1804-PRS/SAM-15F	11'-15'	15-30	2.60-3.70	STANDARD 30 DEGREE SPRAY
	4" POP-UP HEAD, HALF CIRCLE	RAINBIRD #1804-PRS/SAM-15H	11'-15'	15-30	1.30-1.85	
	4" POP-UP HEAD, QUARTER CIRCLE	RAINBIRD #1804-PRS/SAM-15Q	11'-15'	15-30	0.65-0.93	
	4" POP-UP HEAD, SIDE STRIP	RAINBIRD #1804-PRS/SAM-15SST	4'X 30'	15-30	0.89-1.21	
	4" POP-UP HEAD, END STRIP	RAINBIRD #1804-PRS/SAM-15EST	4'X15'	15-30	0.45-0.61	
	4" POP-UP HEAD, VARIABLE ARC	RAINBIRD #1804-PRS/SAM-15VAN	11'-15'	15-30	0.33-2.78	27 DEGREE SPRAY, VARIABLE ARC
○	12" POP-UP HEAD, FULL CIRCLE	RAINBIRD #1812-PRS/SAM-15F	11'-15'	15-30	2.60-3.70	STANDARD 30 DEGREE SPRAY
	12" POP-UP HEAD, HALF CIRCLE	RAINBIRD #1812-PRS/SAM-15H	11'-15'	15-30	1.30-1.85	
	12" POP-UP HEAD, QUARTER CIRCLE	RAINBIRD #1812-PRS/SAM-15Q	11'-15'	15-30	0.65-0.93	
	12" POP-UP HEAD, END STRIP	RAINBIRD #1812-PRS/SAM-15EST	4'X 15'	15-30	0.45-0.61	
	12" POP-UP HEAD, SIDE STRIP	RAINBIRD #1812-PRS/SAM-15SST	4'X 30'	15-30	0.89-1.21	
	12" POP-UP HEAD, VARIABLE ARC	RAINBIRD 1812-PRS/SAM-15VAN	11'-15'	15-30	0.33-2.78	27 DEGREE SPRAY, VARIABLE ARC
○	SHRUB HEAD ON RISER, FULL CIRCLE	RAINBIRD PA-6S-15F	11'-15'	15-30	2.60-3.70	STANDARD 30 DEGREE SPRAY
	SHRUB HEAD ON RISER, HALF CIRCLE	RAINBIRD PA-6S-15H	11'-15'	15-30	1.30-1.85	
	SHRUB HEAD ON RISER, QUARTER CIRCLE	RAINBIRD PA-6S-15Q	11'-15'	15-30	0.65-0.93	
	SHRUB HEAD ON RISER, SIDE STRIP	RAINBIRD PA-6S-15SST	4'X 30'	15-30	0.89-1.21	
	SHRUB HEAD ON RISER, END STRIP	RAINBIRD PA-6S-15EST	4'X 15'	15-30	0.45-0.61	
	SHRUB HEAD ON RISER, VARIABLE ARC	RAINBIRD PA-6S-15VAN	11'-15'	15-30	0.33-2.78	27 DEGREE SPRAY, VARIABLE ARC
□	GEAR DRIVEN SHRUB HEAD ON RISER, FULL CIRCLE	RAINBIRD T-S-FC.T30-5.0	31'	45	5.30	
	GEAR DRIVEN SHRUB HEAD ON RISER, PART CIRCLE	RAINBIRD T-S-PC.T30-2.5	31'	45	2.65	
●	GEAR DRIVEN POP-UP HEAD, FULL CIRCLE	HUNTER I-20-36V-10	40'	40	1.64.0	
	GEAR DRIVEN POP-UP HEAD, PART CIRCLE	HUNTER I-20-ADV-03	40'	40	1.64.0	
	GATE VALVE	NIBCO OR APPROVED EQUAL				
	SIZE OF GATE VALVE					
	REDUCE PRESSURE BACKFLOW PREVENTER	RAINBIRD RPA SERIES				
	PRESSURE REGULATING VALVE	WILKENS #600				
	ANGLE VALVE	BUCKNER 22000				
	SIZE OF ANGLE VALVE					
	CENTRAL CONTROL SYSTEM	RAINBIRD MAXICOM SYSTEM				
	REMOTE CONTROL VALVE	RAINBIRD EFA-CP-PRS SERIES OR SUPERIOR 950 DWPRS				
	QUICK COUPLING VALVE	RAINBIRD 33DNP				
	QUICK COUPLING VALVE KEY	RAINBIRD 33K				
	SWIVEL HOSE ELLS	RAINBIRD SH-1				
	IRRIGATION MAIN	PVC SCHEDULE 40 PIPE				
	IRRIGATION LATERAL	PVC CLASS 200				
	IRRIGATION SLEEVE	PVC SCHEDULE 40 PIPE				
	SIZE OF SLEEVE					
	IRRIGATION CONDUIT	PVC SCHEDULE 80				
	SIZE OF IRRIGATION CONDUIT					
	CONTROLLER ASSIGNMENT: STATION #					
	FLOW (GPM) THRU VALVE / SIZE OF VALVE					



PROPOSED LANDSCAPE IRRIGATION PLAN

FEET 0 50 100 200 1"=60'

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, irrigation concepts illustrated are still applicable to the current plan.

PREPARED FOR
Kyoya company, ltd.

PROJECT #92190
CONCEPT DESIGN
1 NOVEMBER 1992

SHERATON MAUI
REDEVELOPMENT

walters kimura motoda
Landscape Architects

WATG
Wimberly Allison Tong & Goo
Architects and Planners
Honolulu, Hawaii

0084 M

Seaside Village

Sign Type E

Luau Area

Sign Type F

Garden Name

Sign Type G

Molokai Wing
Sheraton Maui Resort

Sign Type C

Sheraton Maui Resort

Sign Type B

Sheraton Maui Resort

Sign Type B

Village Green

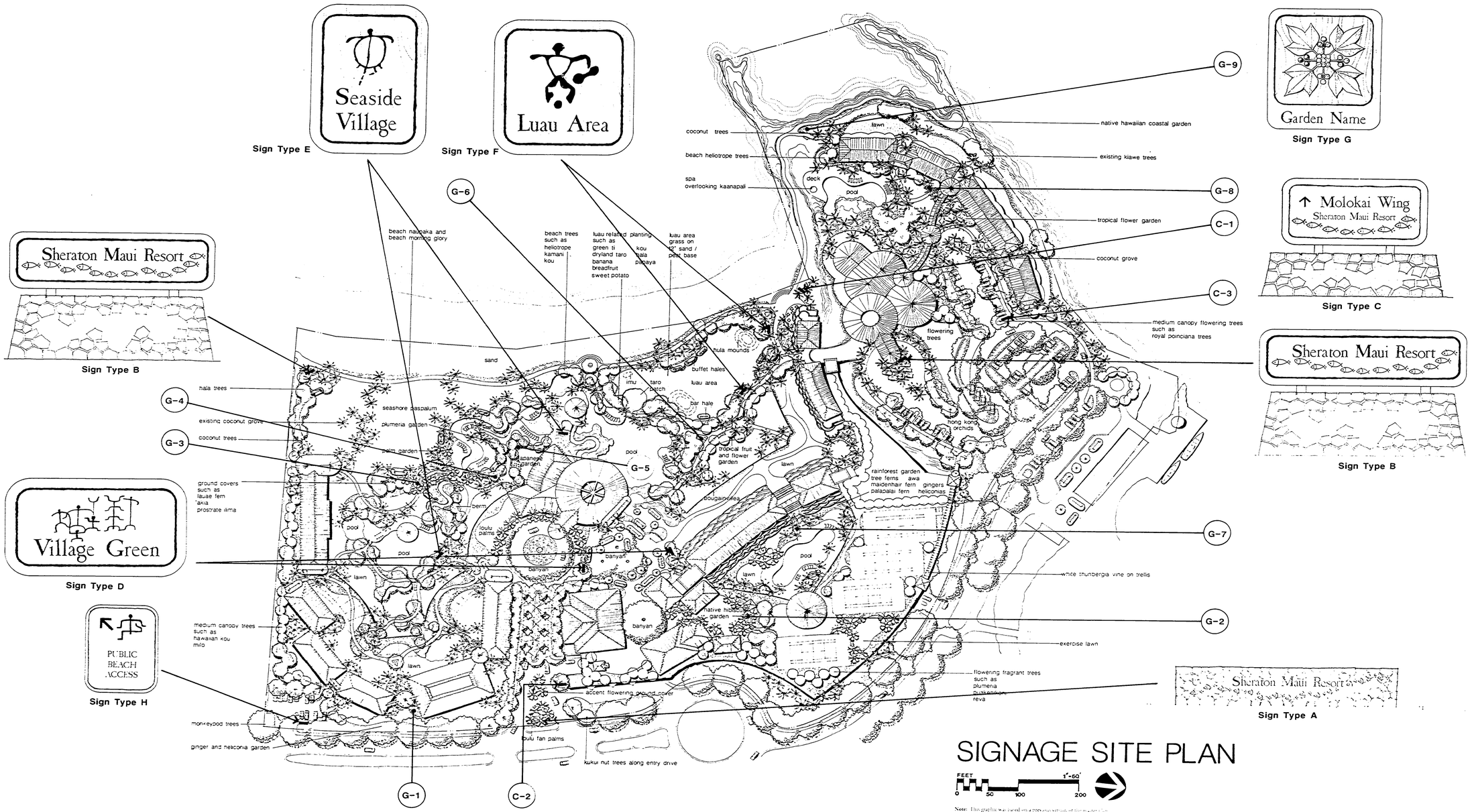
Sign Type D

PUBLIC BEACH ACCESS

Sign Type H

Sheraton Maui Resort

Sign Type A



SIGNAGE SITE PLAN

FEET 0 50 100 200 1"=50'

Note: This graphic was based on a previous version of the master plan with a different Seaside Village configuration. However, signage concepts illustrated are still applicable to the current plan.

PREPARED FOR Kyoya company, ltd. KOKUSAI KOGYO GROUP

PROJECT #92190
CONCEPT DESIGN
1 NOVEMBER 1992

SHERATON MAUI
REDEVELOPMENT

walters kimura moora LANDSCAPE ARCHITECTS

WATG Wimberly Allison Tong & Goo Architects and Planners Honolulu, Hawaii

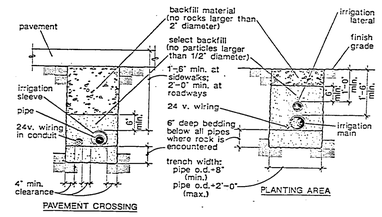
0084 N

IRRIGATION NOTES:

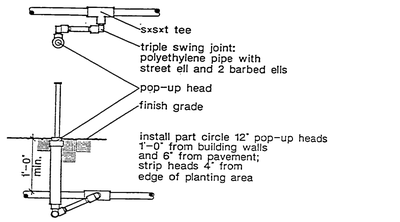
1. Perform a pressure test at the Point of Connection to verify sufficient working pressure. Notify the Landscape Architect if any discrepancies should occur.
2. The minimum static pressure to be psi. The irrigation system is designed to operate at the pressure indicated on the Irrigation Legend for all head types. The Landscape Contractor is responsible to insure all remote control valves and sprinkler heads operate at the specified pressure.
3. The Contractor shall verify locations of all existing utility lines prior to construction operations. Any utility lines damaged by Contractor's operations shall be repaired at no additional cost.
4. For final grading see Civil drawings.
5. For final walkway layout see Civil drawings.
6. Contractor shall notify Landscape Architect of any discrepancies prior to commencement of work.
7. For building layout see Architectural drawings.
8. Provide 4" pop-up body for all heads located in lawn areas.
9. Provide 12" pop-up body for heads located in groundcover areas adjacent to curbs, walkways and road edges.
10. All other irrigation heads to be shrub spray on riser unless otherwise noted on plan.

Pipe Legend

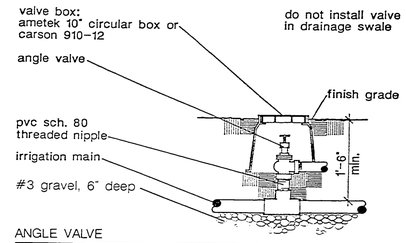
Pipe Size	Sleeve Size (Schedule 40 PVC)
1/2"	2"
3/4"	2"
1"	2"
1-1/4"	4"
1-1/2"	4"
2"	4"
2-1/2"	6"
3"	6"
4"	6"



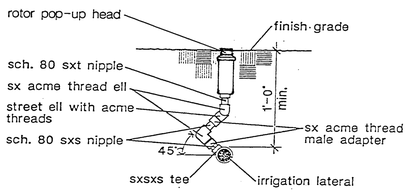
TYPICAL PIPE TRENCH



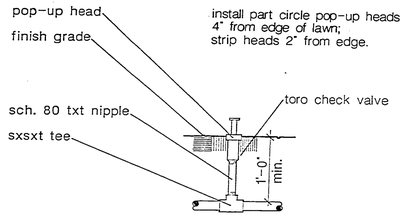
12" POP-UP HEAD



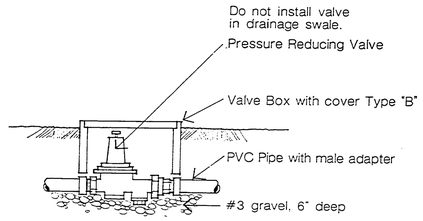
ANGLE VALVE



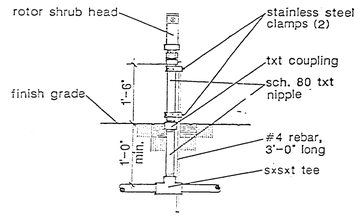
GEAR-DRIVEN LAWN POP-UP HEAD



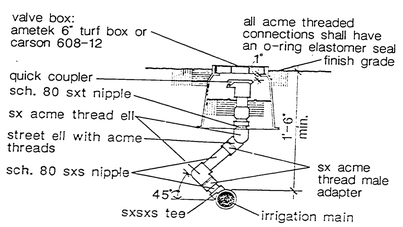
4" POP-UP HEAD



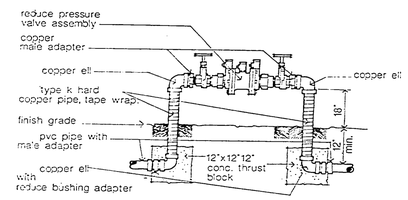
PRESSURE REDUCING VALVE INSTALLATION DETAIL



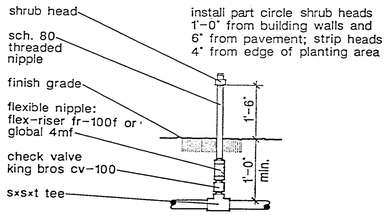
ROTOR SHRUB HEAD



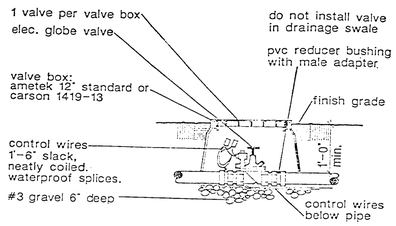
QUICK COUPLER



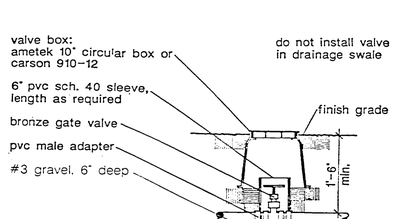
REDUCE PRESSURE BACKFLOW PREVENTER



SHRUB HEAD



ELECTRIC VALVE



GATE VALVE (3" and smaller)

PREPARED FOR: Kyoya company, ltd. KOKUSAI KOGYO GROUP

PROJECT #92190

CONCEPT DESIGN

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walters kimura motoda Landscape Architects

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