ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director

JUN 05 2014

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 5, 2014

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JUN 23 2014

'14 JUN -9 P1:01

Ms. Jessica Wooley, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Wooley:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED MASTER PLAN IMPROVEMENTS AT THE WESTIN MAUI RESORT AND SPA, LOCATED AT 2365 KAANAPALI PARKWAY, KAANAPALI, ISLAND OF MAUI, HAWAII; TMK: (2) 4-4-008:019 (EA 2014/0001)

With this letter, the Department of Planning (Department), hereby transmits the Draft EA and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed Master Plan Improvements at the Westin Maui Resort and Spa situated at TMK: (2) 4-4-008:019 in the Lahaina District on the Island of Maui for publication in the next available edition of the Environmental Notice.

Enclosed is a completed Office of Environmental Quality Control (OEQC) Publication Form, two copies of the DEA-AFONSI, an Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

Thank you for your cooperation. Should you need further clarification, please contact Current Planning Supervisor Ann Cua at ann.cua@mauicounty.gov or at (808) 270-7521.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

Attachments
xc: Clayton I. Yoshida, Planning Program Administrator (PDF)
Ann T. Cua, Current Planning Supervisor (PDF)
Cheryl K. Okuma, Munekiyo & Hiraga, Inc. (PDF)
Lahaina Library (w/ DEA)
EA Project File
General File
WRS:CIY:ATC:nst
K:\WP_DOCS\PLANNING\EA\2014\0001_WestinMauiResortAndSpa\DEAtransOEQC.doc

APPLICANT ACTIONS
SECTION 343-5(C), HRS
PUBLICATION FORM (JANUARY 2013 REVISION)

Project Name Proposed Master Plan Improvements at the Westin Maui Resort & Spa
Island: Maui
District: Lahaina
TMK: (2) 4-4-008:019
Permits: SMA Use Permit, Shoreline Setback Variance, Building Permit

Approving Agency: Maui Planning Commission
(*Address, Contact Person, Telephone*) 2200 Main Street, Suite 619
Wailuku, Hawaii 96793
Contact: Ann Cua

Applicant: Westin Maui Resort & Spa
(*Address, Contact Person, Telephone*) 2365 Kaanapali Parkway
Lahaina, Hawaii 96761
Contact: Gregg Lundberg, (808) 661-2501

Consultant:
(*Address, Contact Person, Telephone*) Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793
Contact: Cheryl K. Okuma, (808) 244-2015

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OFC. OF ENVIRONMENTAL QUALITY CONTROL

Status (check one only):

_X_DEA-AFNSI — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.

__FEA-FONSI — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.

__FEA-EISPN — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.

__Act 172-12 EISPN — Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

__DEIS — The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.

__FEIS — The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

__ Section 11-200-23 Determination — The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.

__Statutory hammer Acceptance — The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

__Section 11-200-27 Determination — The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and

determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

__Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

The Westin Maui Resort & Spa (Westin Maui) is proposing improvements to the existing resort to refresh and revitalize its existing facilities. The Westin Maui opened in 1988 and has not undergone a major renovation since then. Included in the proposed improvements are a new 3½ to 4½ story parking garage within the existing south parking lot for the Westin Maui with a ½-story below grade; including a new landscaping facility in the lower level parking structure; renovations and expansion to the existing Convention Hall and Ballrooms to approximately 12,000 square feet and meeting rooms extended to 9,500 square feet; a new one-story back of house structure adjacent to the convention hall; expansion of the existing Spa facility within the building footprint; demolition of two (2) structures, removal of man-made mound and a portion of existing decking within the 150-foot shoreline setback area and replacement of said structures with new decking materials; installation of roof coverings approximately 2,570 square feet (near Tropica Restaurant) and 4,120 square feet adjacent to Relish Restaurant over existing and new decking areas, within the shoreline setback area are the Tropica Restaurant roof structure, 1,514 square feet for a portion of the Relish Restaurant roof, 3,015 square feet of new deck area and 999 square feet of replacement deck material; relocation of an existing County of Maui sewer line within the south parking area; and various related improvements including utility work, landscaping, and interior renovations, such as painting, replacement of fixtures, renovations to back of house areas, and curb cuts to the bus turn around area to the north of the convention hall.

The work within the shoreline setback area and the relocation of the existing County sewer line are triggers for Chapter 343 HRS review. As the project will require a Special Management Area Use Permit and Shoreline Setback Variance approval to proceed, the Maui Planning Commission has been determined to be the approving agency for the EA document.

Draft Environmental Assessment

WESTIN MAUI RESORT & SPA MASTER PLAN
(TMK (2)4-4-008:019)

Prepared for:

Westin Maui LLC

Approving Agency:

Maui Planning Commission

December 2013
Revised, May 2014

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MUNEKIYO & HIRAGA, INC.

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List of Acronyms

AIS	Archaeological Inventory Survey
APE	Area of Potential Effect
AMSL	Above Mean Sea Level
BMP	Best Management Practice
BS	Beach Sand
BT	Backhoe Trench
CFS	Cubic Feet per Second
CIA	Cultural Impact Assessment
CM	Centimeter
DLIR	Department of Labor and Industrial Relations
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOH	Department of Health
EA	Environmental Assessment
EaA	Ewa Silty Clay Loam, 0 to 3 percent slopes
EPA	Environmental Protection Agency
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Findings of No Significant Impact
GPD	Gallons per Day
GPR	Ground Penetrating Radar
HAR	Hawaii Administrative Rules
HCZMP	Hawaii Coastal Zone Management Program
HRS	Hawaii Revised Statutes
HWS	Hawaii Water Service
ILWU	Hawaii International Longshore and Warehouse Union Local 142
JaC	Jaucus Sand, 0 to 15 percent slopes
KOA	Kaanapali Operations Association, Inc.
LOS	Level of Service
LWRF	Lahaina Wastewater Reclamation Facility
M	Meter
MCC	Maui County Code
MECO	Maui Electric Company, Ltd
MG	Million Gallons
MIP	Maui Island Plan
PDR	Preliminary Drainage Report
PER	Preliminary Engineering Report
SHPD	State Historic Preservation Division
SMA	Special Management Area
sq. ft.	Square Feet
SSV	Shoreline Setback Variance
TIAR	Traffic Impact Assessment Report

TMK	Tax Map Key
UGB	Urban Growth Boundary
USGS	U.S. Geological Survey
WWTP	Wastewater Treatment Plant
Zone VE	1 Percent Annual Chance Coastal Flood Plain

Executive Summary

Project Name:	Westin Maui Resort & Spa Master Plan Improvements
Type of Document:	Draft Environmental Assessment
Legal Authority:	Chapter 343, Hawaii Revised Statutes
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Applicable Environmental Assessment review "Trigger":	Use of land within the shoreline setback and use of County lands
Location:	Maui Island Kaanapali TMK No. (2) 4-4-008:019
Landowner:	Campbell Hawaii Investor, LLC 1001 Kamokila Boulevard, Suite 254 Kapolei, Hawaii 96707
Applicant:	Westin Maui LLC 2365 Kaanapali Parkway Kaanapali, Hawaii 96761 Contact: Gregg Lundberg, General Manager
Approving Agency:	Maui Planning Commission c/o County of Maui, Department of Planning 2200 Main Street, Suite 315 Wailuku, Hawaii 96793
Consultant:	Munekiyo & Hiraga, Inc. 305 High Street, Suite 104 Wailuku, Hawai`i 96793 Contact: Cheryl K. Okuma Phone: (808) 244-2015

Project Summary:

The Westin Maui Resort & Spa (Westin Maui) is proposing improvements to the existing resort to refresh and revitalize its existing facilities. The Westin Maui opened in 1988 and has not undergone a major renovation since then. Included in the proposed improvements are a new 3-½ to 4-½ story parking garage within the existing south parking lot for the Westin Maui, including a new landscaping facility in the lower level of the parking structure; renovations and expansion to the existing ballroom to approximately 12,000 square feet and meeting rooms extended to 9,500 sq. ft.; a new one-story back of house structure adjacent to the ballroom; expansion of the existing Spa facility within the building footprint; demolition of two (2) structures and removal of mound within the 150-foot shoreline setback area and replacement of said structures with new decking; installation of roof coverings approximately 2,570 sq. ft. (near Tropica Restaurant) and 4,120 sq. ft. (adjacent to Relish Restaurant) over existing and new breakaway decking areas; relocation of an existing County of Maui sewer line within the south parking area; and various related improvements including utility work, landscaping, and interior renovations, such as painting, replacement of fixtures, renovations to back of house areas and curb cuts to the bus turn around area to the north of the ballroom. Existing deck within the shoreline setback area of approximately 999 sq. ft. are proposed to be removed and replaced with breakaway decking. Approximately 3,015 sq. ft. of the new decking area and 1,514 sq. ft. (Relish Restaurant) and 2,570 sq. ft. (Tropica Restaurant) of the new roof areas are within the shoreline setback area.

The work within the shoreline setback area and the relocation of the existing County sewer line are triggers for Chapter 343 HRS review. As the project will require a Special Management Area Use Permit and Shoreline Setback Variance approval to proceed, the Maui Planning Commission has been determined to be the approving agency for the EA document.

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROJECT LOCATION, EXISTING USE, AND LAND OWNERSHIP

The Applicant, the Westin Maui LLC ("Applicant" or "Westin Maui"), proposes master plan improvements to the resort in Kaanapali, Maui, Hawaii. See **Figure 1**. The Westin Maui Resort & Spa is located at 2365 Kaanapali Parkway and is identified by Tax Map Key (TMK) (2) 4-4-008:019. See **Figure 2**. The parcel is bordered by Whalers Village to the north, Kaanapali Alii to the south, the Pacific Ocean to the west, and Kaanapali Parkway to the east.

The Westin Maui Resort & Spa is a world-class oceanfront resort which consists of 759 hotel rooms and related resort amenities. The Westin Maui Resort & Spa first opened in 1988. The original main hotel building was built in the 1970s and was operated as the Maui Surf Hotel. In 1985, a Special Management Area (SMA) Use Permit was granted for the addition of the north tower which includes the ballroom facilities and spa, as well as renovations to the existing structures. In its over 20 years of operation, the Westin Maui Resort & Spa has not undergone a major renovation for the property.

The project site is owned by Campbell Hawaii Investor LLC and the Westin Maui LLC is the lessee of the property.

B. PROPOSED ACTION

Proposed improvements to the Westin Maui Resort & Spa include:

- Construction of new 3-½ to 4-½ story parking garage in the existing south parking lot
- Construction of new landscaping facility in lower level of parking garage
- Conversion of existing second floor convention hall into new ballroom with expansion to 12,000 square feet (sq. ft.)
- Expansion of existing first floor meeting rooms to approximately 9,500 sq. ft.
- Construction of new back of house structure approximately 3,070 sq. ft. in area, adjacent to the ballroom
- Expansion of existing Spa by approximately 4,240 sq. ft. within the existing building footprint

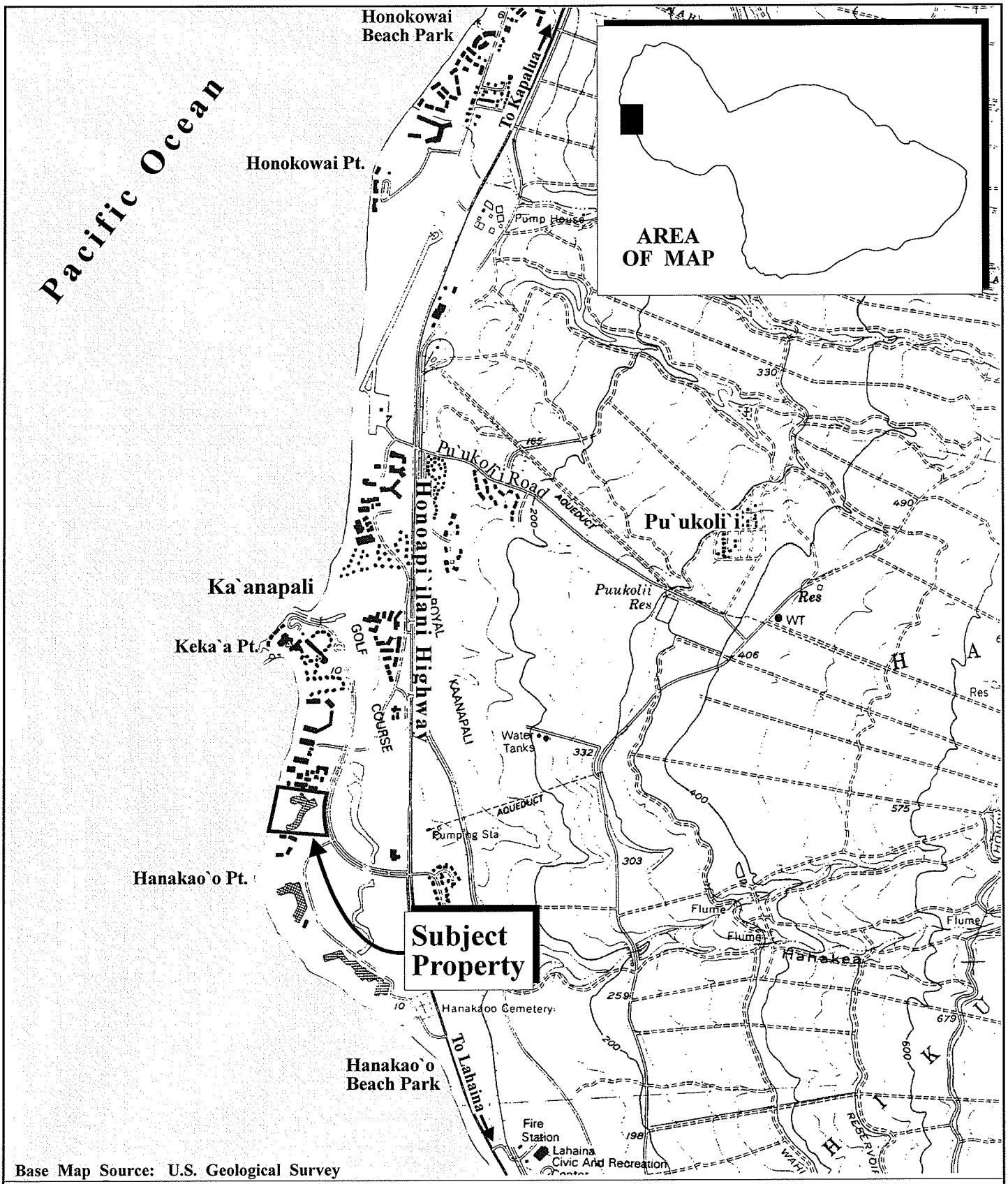


Figure 1 Proposed Master Plan Improvements for the Westin Maui Resort & Spa

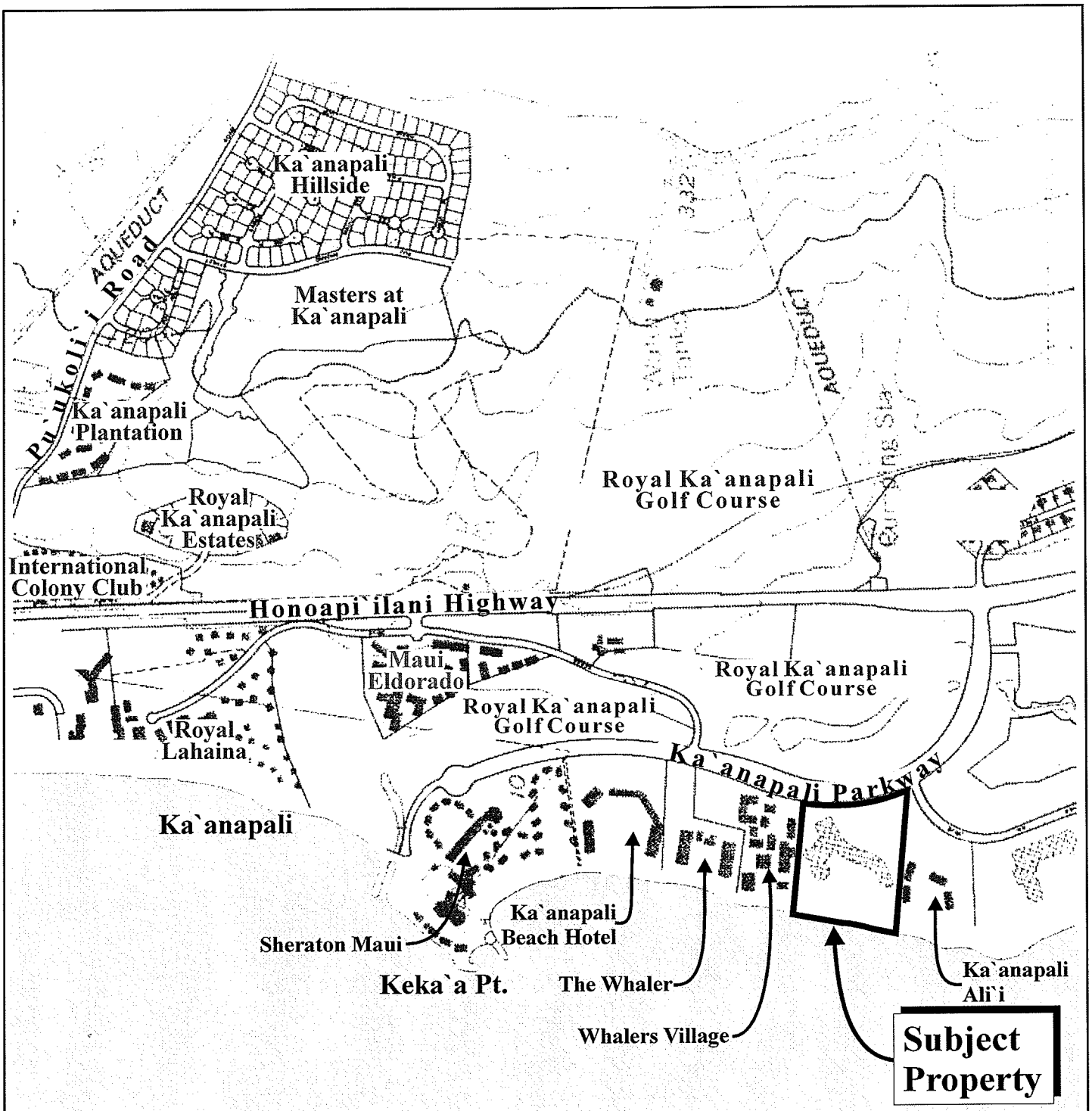
Regional Location Map

0 500 1000 2000 Feet

MUNEKIYO & HIRAGA, INC.

Prepared for: Westin Maui LLC

Starwood/Westin MP/regionalloca



Source: County of Maui, Dept. Of Planning

Figure 2 Proposed Master Plan Improvements for the Westin Maui Resort & Spa

Project Location Map

NOT TO SCALE

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/projectlocation

- Demolition of existing water feature, restroom and storage building and removal of landscape mound within the Shoreline Setback Area.

- Installation of breakaway deck area and approximately 4,120 sq. ft. roof structure adjacent to Relish Restaurant, of which approximately 1,514 sq. ft. is within the Shoreline Setback Area, to replace area of demolished water feature, restroom, and storage building.

- Installation of approximately 3,015 sq. ft. of new breakaway decking within the Shoreline Setback Area, adjacent to the Tropica and Relish Restaurants.

- Replacement of approximately 999 sq. ft. of existing deck within the shoreline setback area with breakaway decking.

- Demolition of existing retail kiosk within Shoreline Setback Area.

- Installation of approximately 2,570 sq. ft. (near Tropica Restaurant) open air roof structure to cover existing restaurant deck area in the Shoreline Setback Area.

- Interior renovations to existing guestroom and public corridor areas, renovations to existing pools and water features, as well as back of house areas.

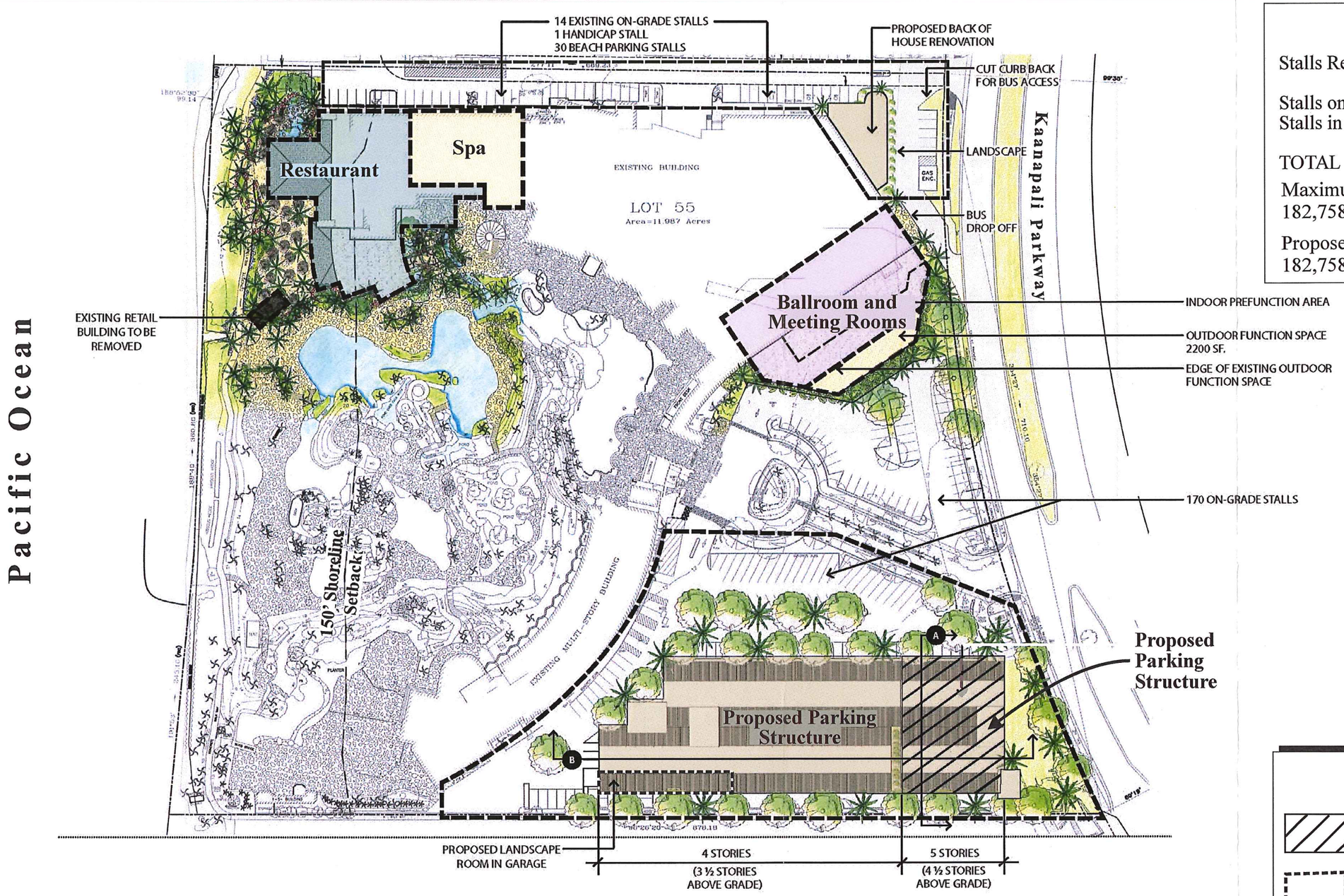
- Installation of underground utilities (including relocation of County of Maui sewerline in south parking area), landscaping, and other related improvements to support the above-noted improvements.

All improvements are proposed within the property limits of the Westin Maui Resort & Spa which has undergone prior development actions for the existing resort. See **Figure 3**.

Further description of the main proposed improvements is provided below.

Parking Structure

The proposed parking structure will consist of 3-½ levels and 4-½ levels, with the first level being below grade by four (4) feet and is proposed within the existing paved parking lot located in the southern portion of the property, adjacent to Kaanapali Parkway. At its tallest point, the height of the structure will be approximately 36 feet. See **Figure 4**. The parking structure is proposed to be oriented in the east-west direction, to minimize the visual impact along Kaanapali Parkway. The 4-½ level portion of the parking structure will be adjacent to the Kaanapali Parkway. Additionally, there are existing mature monkeypod trees along the southern border of the property which will provide visual screening for the structure. Additional landscaping is proposed along all sides of the structure to provide additional screening and mitigate light and noise transmission. There will be a lighting plan for the top level of the structure in addition to a trellis system. Light



Parking Count

Stalls Required:	827
Stalls on Grade:	219
Stalls in Garage:	632
TOTAL STALLS:	851

Maximum Allowable Lot Coverage: 182,758 s.f.

Proposed Lot Coverage for Option 1-D: 182,758 s.f.

Key

New Structure

Proposed Construction Areas

Source: WCIT Architecture

Figure 3

Proposed Master Plan Improvements for the Westin Maui Resort & Spa

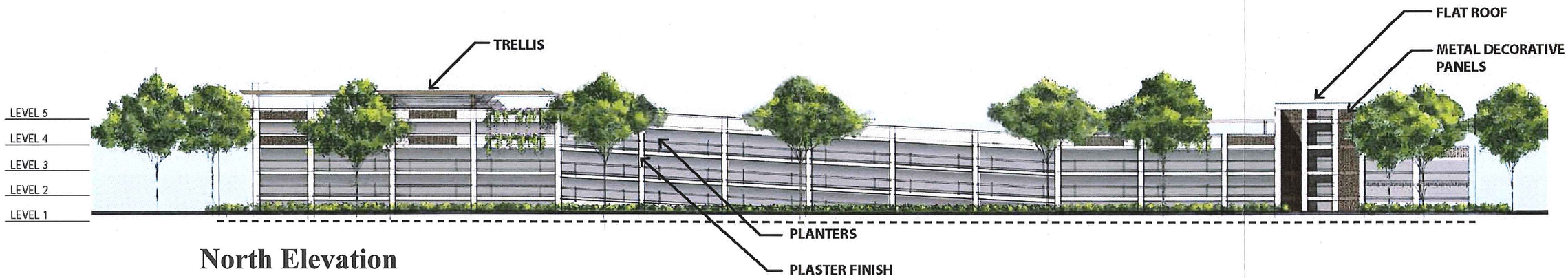
Site Plan

NOT TO SCALE

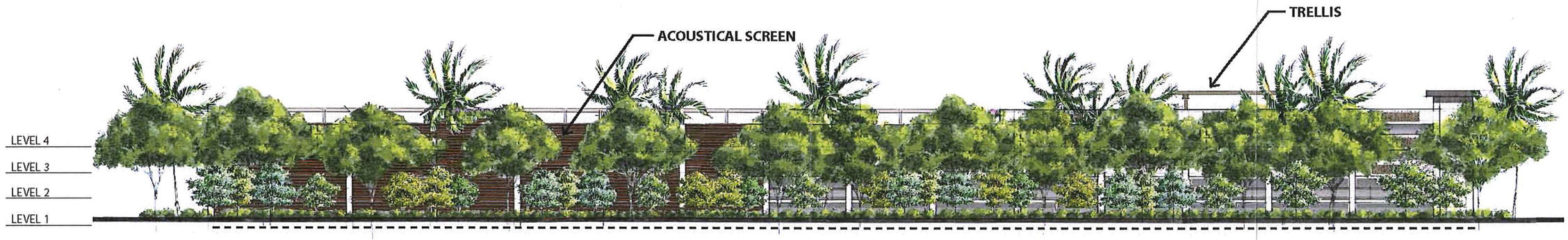
Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

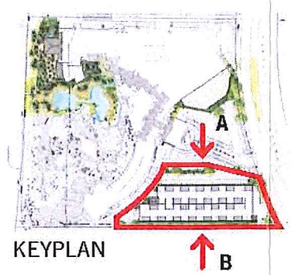
Starwood/Westin MP/siteplan



North Elevation



South Elevation



Source: WCIT Architecture

Figure 4

Proposed Master Plan Improvements for the Westin Maui Resort & Spa

North and South Elevations for Parking Structure

NOT TO SCALE

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/parkingstructure

fixtures will be fully shielded and downward facing. Landscaping will be installed between the garage and Kaanapali Parkway and along the edge between the 3-½ and 4-½ levels of the structure. Refer to **Figure 4** and Section 6, Preliminary Development Plans, of this SMA application.

Landscaping Facility

A maintenance area is proposed for the lower level of the parking garage. The facility will provide for storage of landscape maintenance equipment and materials and enable the Applicant to remove the existing outdoor facility near the southern property boundary.

Ballroom Expansion and Meeting Room Expansion

Expansion and renovation activities are proposed for the existing Convention Hall area to convert it to a ballroom, located on the second floor of the hotel building, as well as the renovation and expansion to the existing meeting rooms, located on the first floor of the hotel. The renovated ballroom on level 2 will be expanded to approximately 12,000 sq. ft. and will also include a 3,700 sq. ft. pre-function area. Meeting rooms on level 1 will be extended to 9,500 sq. ft. and will also include a 3,700 sq. ft. interior pre-function area. Separately, a 2,200 sq. ft. outdoor pre-function area on level 1 is also proposed. Refer to **Figure 3**. All proposed improvements will be within previously developed areas of the Westin Maui Resort & Spa.

Additionally, interior renovation activities are proposed for both areas to upgrade lighting systems, audio/visual capabilities, renovate existing restrooms and back of house spaces and replace existing flooring and other fixtures. Refer to Preliminary Development Plans, Section 6.

Curb cuts to the bus turnaround area adjacent to the ballroom and meeting rooms are proposed. This will allow for utilization of the bus turn around area for the Westin Maui Shuttle as well as tour buses serving Westin Maui Resort & Spa guests.

Back of House

A new one-story facility, located on the northeast paved corner lot of the property, adjacent to the meeting rooms is proposed. The back of house facility will house laundry facilities and provide for additional storage of hotel equipment and materials. See Sheet A-08 in Preliminary Development Plans, Section 6.

Spa Expansion

Expansion of existing Spa facility, located on the second floor of the Ocean Tower by approximately 4,240 sq. ft. to include new areas for locker rooms and spa treatment and fitness areas. Expansion of the Spa area will be within the existing Ocean Tower building and will entail interior renovations to the existing built area.

Demolition of Structures in Shoreline Setback Area

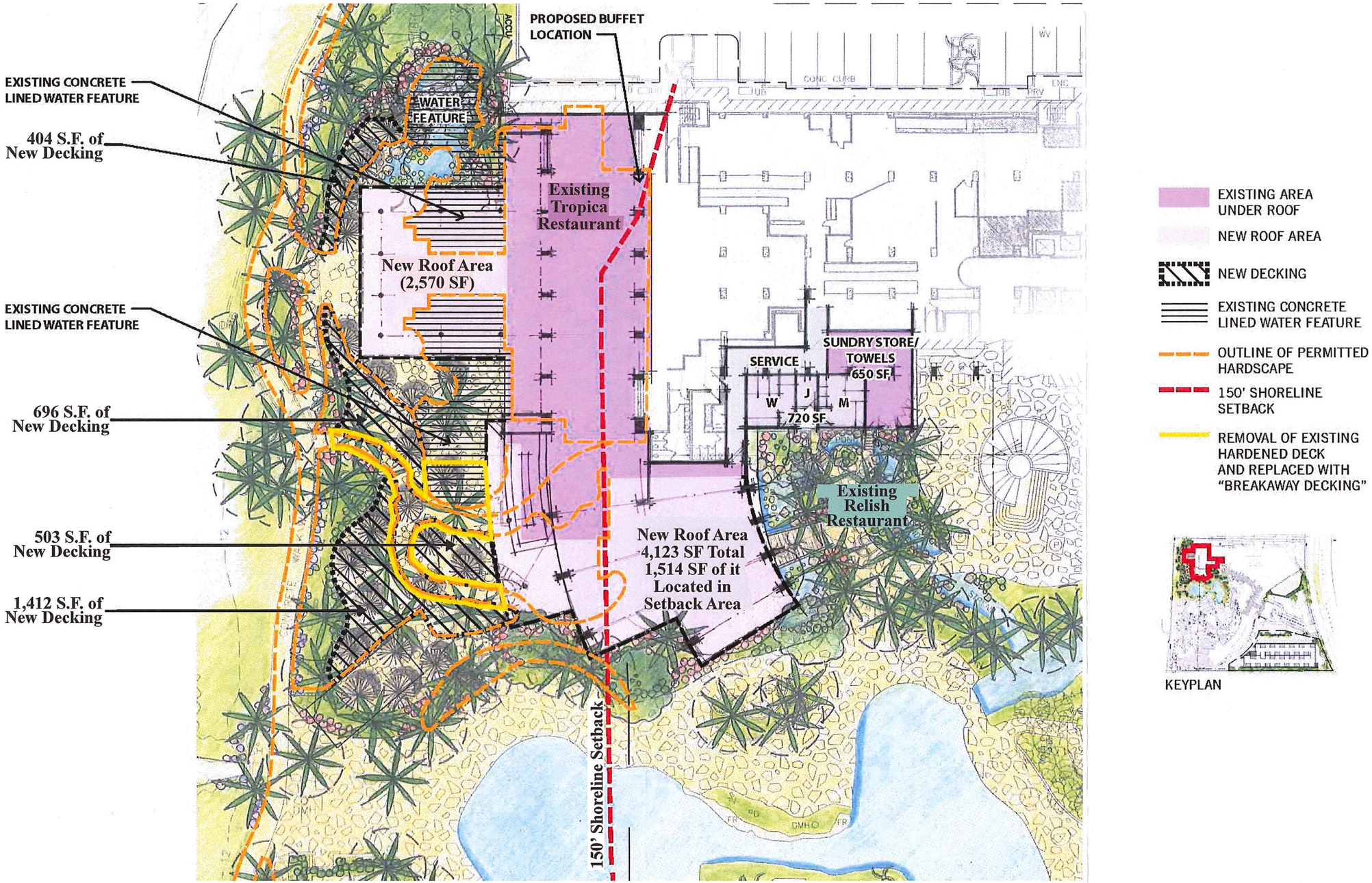
The Applicant is proposing to demolish two (2) existing structures and remove an existing man-made earth mound within the 150-foot Shoreline Setback Area (SSA): an existing restroom and storage building, as well as one (1) free-standing kiosk building that is utilized for the Applicant's pool staff and as a retail facility. The existing restroom and storage building is approximately 1,753 sq. ft. in size, while the kiosk building is approximately 551 sq. ft. The mound screens the restroom and storage facility and is located on the northwest portion of the property. The kiosk and approximately 1,020 sq. ft. of the storage building is located within the shoreline setback area.

Removal of Existing Deck in SSA

The Applicant is proposing to remove approximately 999 sq. ft. of existing hard deck within the SSA and install breakaway decking. See **Figure 5**.

Installation of Deck Area and Roof Structure in SSA

The Applicant is proposing to replace the demolished restroom and storage building as noted above, with a paved breakaway deck surface of 3,015 sq. ft. adjacent to the Tropica and Relish Restaurant. Also proposed are shade coverings totalling approximately 4,120 sq. ft. of which 1,514 sq. ft. are located in the shoreline setback area which provides coverage for additional seating areas for the adjacent Relish Restaurant. Additionally, an approximately 2,570 sq. ft. free standing roof structure is proposed to cover an existing deck area to provide shading for the Tropica Restaurant seating area. The roof structure would be an open-air structure which would include door paneling which could be closed in inclement weather. Refer to **Figure 5**, see **Figure 6** and **Figure 7**, and refer to Section 6. Existing umbrella shade coverings for dining tables are also proposed to remain in the restaurant seating area.



Source: WCIT Architecture

Figure 5

Proposed Master Plan Improvements for the Westin Maui Resort & Spa

New Deck and Roof Structures

NOT TO SCALE

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/newroofstructure

Source: Westin Maui

Figure 6

Proposed Master Plan Improvements for the Westin Maui Resort & Spa

Limit of Work of Proposed Improvements Adjacent to Tropica Restaurant in Shoreline Setback Area (East)

NOT TO SCALE

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/PropImprove Aerial2

Source: Westin Maui

Figure 7

Proposed Master Plan Improvements for the Westin Maui Resort & Spa

Limit of Work of Proposed Improvements Adjacent to Relish Restaurant in Shoreline Setback Area (South)

NOT TO SCALE

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/PropImprove Aerial1

Relocation of Existing Sewer Line

There is an existing sewer line which services the Westin Maui Resort & Spa that is located within the south parking lot. A portion of an existing County of Maui sewerline crosses the property on the southeasterly boundary. Approximately 140 ft. of sewerline will be relocated due to the proposed location of the parking garage. The relocated sewerline will be placed within a new easement.

C. PROJECT NEED

In order to remain current and competitive, the Westin Maui Resort & Spa maintains a program to visually and functionally enhance the resort. As the Applicant's current lease for off-site parking is anticipated to end in the near future, the new garage structure addresses the parking needs. The proposed project does not reduce the numbers of employees and does not involve adding guestrooms. The proposed master plan improvements will allow the Westin Maui Resort & Spa to maintain its competitive market position and also provide much needed onsite parking for guests and employees. To compete in the global market, Westin Maui Resort & Spa strives to upgrade its properties to meet consumer demands and expectations.

D. PROJECT IMPLEMENTATION CONSIDERATIONS

The subject property is designated "Urban" by the State Land Use Commission, "H-2, Hotel" by Maui County Zoning, and "Hotel" and "Open Space" by the West Maui Community Plan. It also lies within the Maui Island Plan's Urban Growth Boundary (UGB). The proposed action is in-keeping with State Land Use, County Zoning, Community Plan, and Maui Island Plan designations.

The subject property falls within the County's Special Management Area (SMA). The master plan improvements qualify as "development" actions under the SMA rules, and a portion of the work, specifically the demolition of the pool bathrooms and storage and kiosk building and installation of deck material and shade coverings and separate roof structure, fall within the shoreline setback area. Therefore, a SMA Major permit, Environmental Assessment, and Shoreline Setback Variance will be required prior to project implementation. Additionally, it is noted that with the construction of the proposed parking garage, an approximately 140-linear foot portion of an existing sewer line within the Westin Maui Resort & Spa parking lot will need to be relocated. The sewer line is owned by the County of Maui and there will be a new easement to accommodate the new sewerline alignment.

E. PROJECT COST AND IMPLEMENTATION TIMEFRAME

The estimated cost of the proposed master plan improvements for the Westin Maui Resort & Spa is $55 million. Construction will commence upon receipt of all applicable permits and approvals. Construction is estimated to begin in the first quarter of 2015 and is anticipated to occur over a period of 30 months.

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

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

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Use

a. Existing Conditions

The Westin Maui Resort & Spa is located on Kaanapali Parkway in the Kaanapali Beach Resort makai of Honoapiilani Highway. The Westin Maui Resort & Spa is bordered by Whalers Village to the north, the Kaanapali Alii condominium complex to the south, Kaanapali Parkway and the Royal Kaanapali Golf Course to the east, and Kaanapali Beach to the west.

b. Potential Impacts and Mitigation Measures

The proposed action is intended to upgrade and revitalize the existing, developed portions of the resort property. The proposed improvements include, but are not limited to, guestroom and public corridor renovations, restaurant improvements (deck and roof structures) to encompass the removal and replacement of approximately 999 sq. ft. of existing deck with breakaway decking and demolition of the existing pool bathrooms and storage, repair work at the existing water features and pools, repair and maintenance work at the back of house spaces, construction of a new 4-½ level parking structure along Kaanapali Parkway that will consist of 3-½ levels and 4-½ levels as the first level is below grade by four (4) feet, including a landscaping facility on the lower level, conversion and expansion of the existing ballroom space on the second level to a 12,000 sq. ft. ballroom, 3,700 sq. ft. interior pre-function area, meeting rooms on level 1 extended to 9,500 sq. ft., 3,700 sq. ft. interior pre-function area, for the meeting rooms, 2,200 sq. ft. outdoor pre-function area, expansion of spa, a new one-story back of house structure, and curb cuts to the bus turnaround area. The proposed action is not anticipated to have an adverse effect on adjacent properties or uses, including any adjacent hotel, commercial, and recreational uses.

2. Climate

a. Existing Conditions

Like most areas of Hawaii, Lahaina's climate is relatively uniform year-round. Lahaina's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions on Maui are, therefore, dictated by the inherent characteristics of local terrain.

Average daily temperatures in Lahaina typically range between 66 degrees and 85 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest (County of Maui, 2011).

Rainfall in West Maui is both low and highly seasonal in nature, with most precipitation occurring between the months of October and April when winter storms hit the area. January is the wettest month, with 3.15 inches on average, and June is the driest, with 0.08-inch of precipitation. Situated on the leeward side of the West Maui Mountains, this dry region receives most of its rainfall in the late afternoon and early evening, after seabreezes take moisture upslope during the day. Annual average rainfall for Lahaina is 14.62 inches as opposed to Kahului, which receives 18.82 inches (County of Maui, 2011).

The winds in the area are also seasonal, although northeasterly tradewinds are predominant and occur 90 percent of the time during the summer and just 50 percent of the time in winter with average wind speeds of approximately 16 miles per hour. Wind patterns also vary on a daily basis, with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. This process reverses in the evening when breezes blow toward the relatively warm ocean. Between October and March, the southerly winds of Kona storms may be experienced.

b. Potential Impacts and Mitigation Measures

The proposed project will not significantly alter the local topography or terrain. Therefore, the project is not anticipated to impact the climate.

3. Topography and Soil Characteristics

a. Existing Conditions

The subject property is characterized by relatively level terrain. Onsite elevations range from approximately 6.5 feet to 34.5 feet above mean sea level (amsl). Slopes on the mauka side of the resort building are moderate at approximately one (1) percent. On the makai side, slopes vary from moderate to severe, ranging from approximately one (1) percent to 15 percent. Landscaped areas account for locations with severe slopes. See **Appendix "A"**, Preliminary Engineering Report.

Underlying the project site are the soils from the Pulehu-Ewa-Jaucas association. See **Figure 8**. According to the Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii characterizes the soils of this association as well-drained and occurring in basins and alluvial fans. Soils of this association have developed in alluvium derived from basic igneous rock. Typical uses in this soil type are sugar cane and truck crop cultivation and pasture.

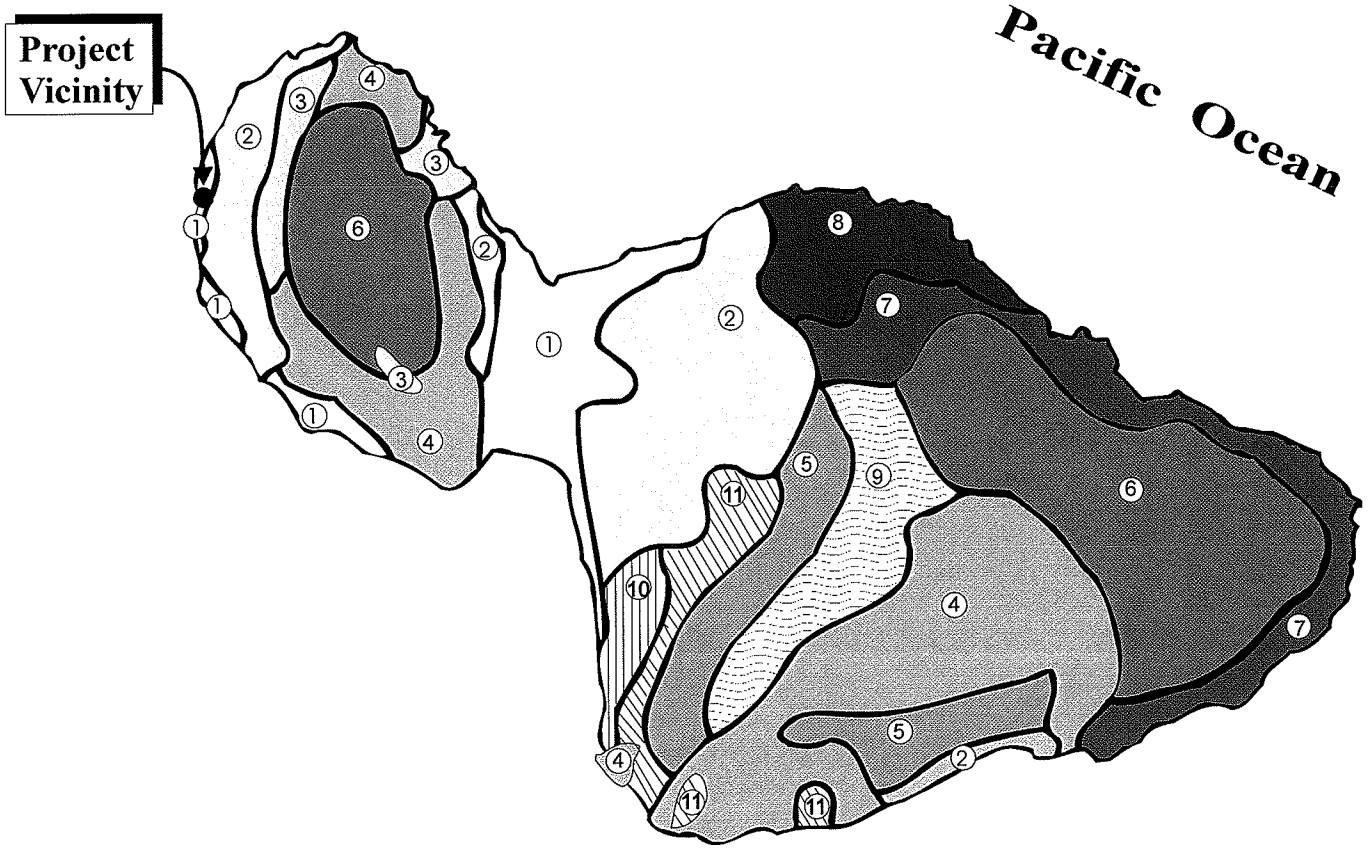
There are three (3) specific representative soil types which underlie the subject property: Ewa silty clay loam, 0 to 3 percent slopes (EaA), Jaucus sand, 0 to 15 percent slopes (JaC), and beach sand (BS). See **Figure 9**. EaA is characterized as having very slow runoff and a no more than slight erosion hazard. This soil is often used for sugar cane cultivation and homesites. JaC is characterized as having rapid permeability and very slow to slow runoff. BS consists of primarily light-colored sands derived from coral and seashells and is generally found in sandy areas along the shoreline.

b. Potential Impacts and Proposed Mitigation Measures

The topography of the subject property will not be significantly altered nor will the soil composition be changed. Site work at the project site will be performed within areas already graded and developed for resort use. Ground altering work will occur in the existing parking lot during the construction of the new parking garage. However, the finish grades at other work sites will not be significantly altered.

LEGEND

- ① Pulehu-Ewa-Jaucas association
- ② Waiakoa-Keahua-Molokai association
- ③ Honolua-Olelo association
- ④ Rock land-Rough mountainous land association
- ⑤ Puu Pa-Kula-Pane association
- ⑥ Hydrandepts-Tropaquods association
- ⑦ Hana-Makaalae-Kailua association
- ⑧ Pauwela-Haiku association
- ⑨ Laumaia-Kaipoipoi-Olinda association
- ⑩ Keawakapu-Makena association
- ⑪ Kamaole-Oanapuka association



Base Map Source: USDA Soil Conservation Service

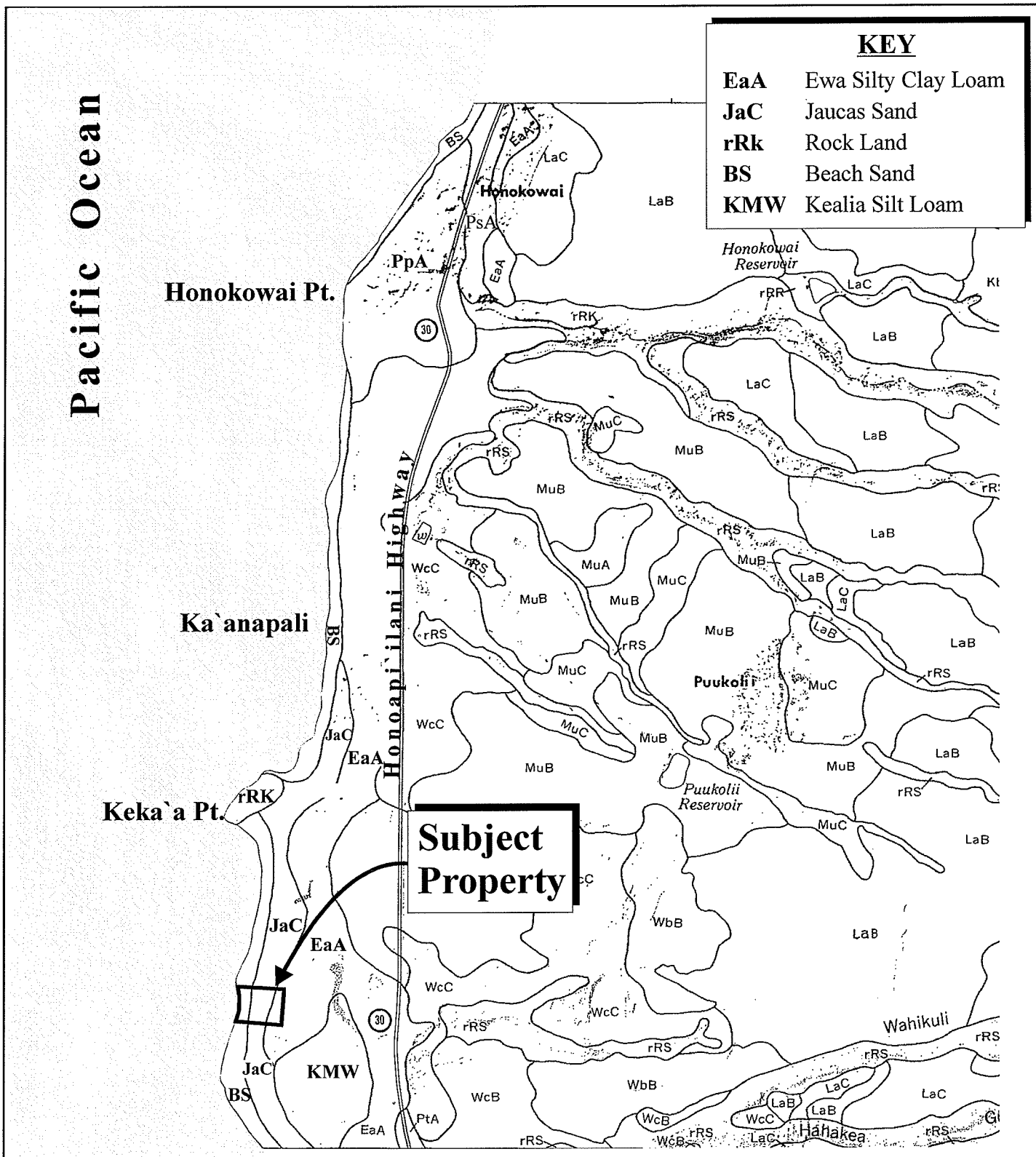
Figure 8 Proposed Master Plan Improvements for the Westin Maui Resort & Spa

Soil Association Map

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Prepared for: Westin Maui LLC



Source: U.S.D.A. Soil Conservation Service (1972)

Figure 9 Proposed Master Plan Improvements for the Westin Maui Resort & Spa

NOT TO SCALE

Soil Classification Map

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/SOILCLAS

The proposed action will not negatively impact the underlying soils. As mentioned previously, the subject property has been developed and is currently being used as the Westin Maui Resort & Spa. To prevent soil erosion during site work, applicable Best Management Practices (BMPs) will be implemented at the project site.

In view of the foregoing, the proposed action is not anticipated to adversely affect the topography and soils in the area.

4. Flood and Tsunami Hazard

a. Existing Condition

As indicated by the Flood Insurance Rate Map (FIRM) for the area, the subject property is primarily located within Flood Zone X, with a small portion lying within Flood Zone VE. See **Figure 10**. The proposed action will occur entirely within Flood Zone X. Flood Zone X is characterized as areas outside the 0.2 percent annual chance floodplain.

According to the Tsunami Flood Zone Evacuation Maps, the subject property is located within the tsunami evacuation area (County of Maui, Civil Defense Agency).

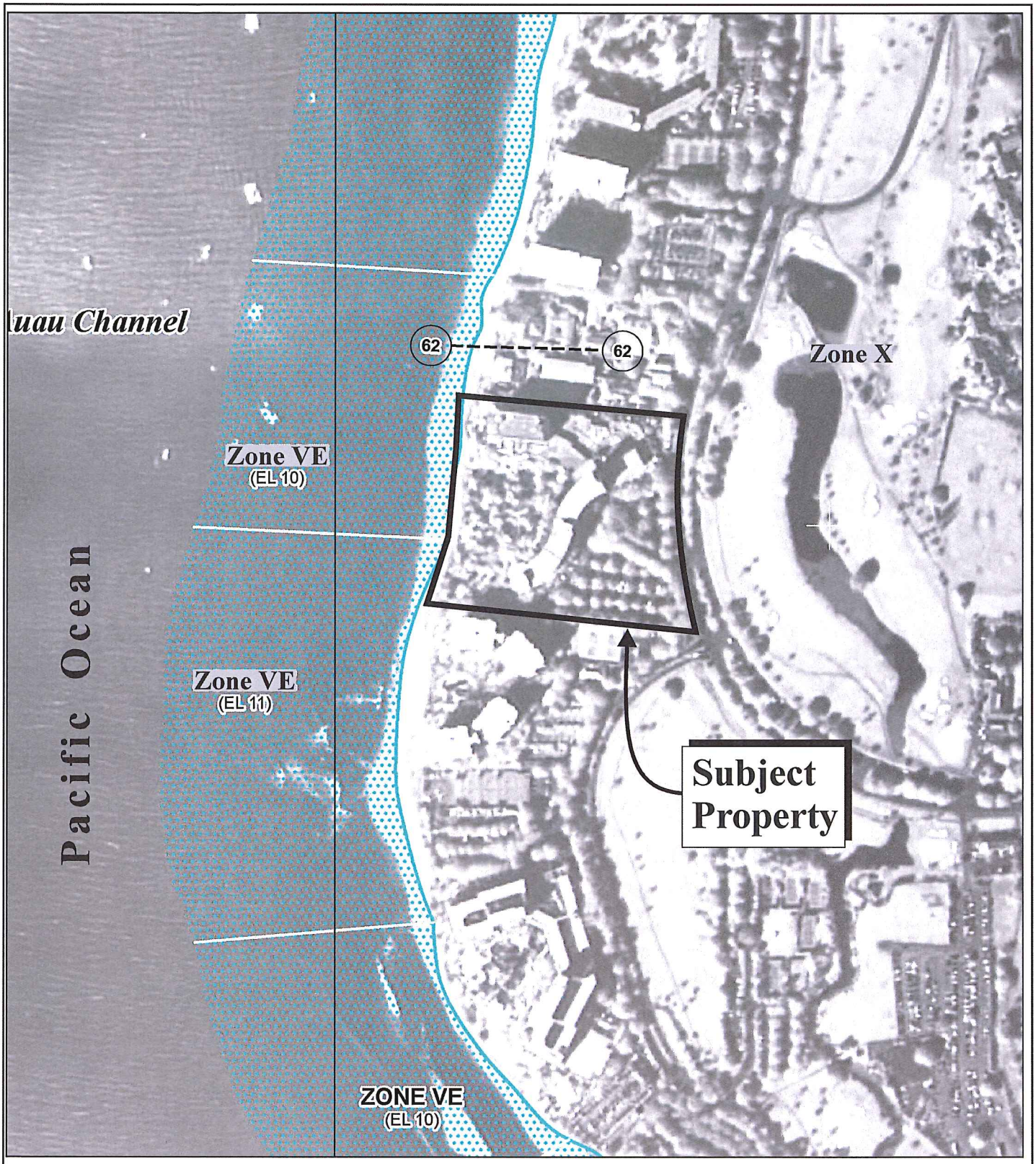
b. Potential Impacts and Proposed Mitigation Measures

Flood Zone X represents areas of low flood risk with no development restrictions. The Westin Maui Resort & Spa has established emergency and civil defense procedures to provide the necessary guidance to organize and direct operations at the resort in the event of an emergency or civil defense action, such as a tsunami. No adverse impacts to flood and tsunami hazard parameters are anticipated to result from the proposed action.

5. Flora and Fauna

a. Existing Conditions

The Westin Maui Resort & Spa is professionally landscaped with an array of native and introduced species of plants. Species of fauna, which may be found at or near the project site, are considered common. There are no known rare, endangered, or threatened species of animal life in the vicinity of the proposed project. There are no sensitive wildlife habitats within the resort property.



Source: Federal Emergency Management Agency
Map No. 1500030353F

Figure 10 Proposed Master Plan Improvements NOT TO SCALE for the Westin Maui Resort & Spa

Flood Insurance Rate Map

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/FIRM

b. Potential Impacts and Proposed Mitigation Measures

The subject property does not contain any rare, threatened, or endangered species or critical habitat for such species. Therefore, the proposed action is not anticipated to have a negative impact on the biological resources in the region.

6. Air Quality and Noise

a. Existing Conditions

Airborne pollutants that exist in the vicinity are minimal and can be mostly attributed to vehicular exhaust from Kaanapali Parkway, Honoapiilani Highway, and adjoining roadways. The prevailing trade winds disperse these particulates.

Existing noise conditions at and near the subject property result primarily from vehicular traffic. There are no adverse aircraft related noise conditions that impact the subject property.

b. Potential Impacts and Proposed Mitigation Measures

Construction activities will generate short-term air quality and noise impacts. Dust control measures such as dust screens will be implemented to minimize wind-blown particulates. Noise impacts generated by construction equipment will be minimized with the use of equipment mufflers or other noise-attenuating equipment and proper vehicle maintenance. Best Management Practices (BMPs) will be implemented to mitigate adverse air quality and noise impacts. After the conclusion of construction, the improvements are not anticipated to produce any air quality or noise impacts.

7. Chemicals and Hazardous Materials

a. Existing Conditions

The Westin Maui Resort & Spa installed two (2) underground diesel fuel storage tanks in 1986 as part of previously permitted improvements. The tanks each have a capacity of 10,000 gallons and the Westin Maui has a regular monitoring and testing program for the tanks. Annual inspection by a certified contractor and automatic leak detection systems are installed for

each tank. The tanks are tested each year and the Westin Maui has a protocol in place should a leak be detected in the underground tanks.

There are no new activities proposed within the Westin Maui master plan improvements which would potentially include hazardous materials or chemicals which may be potentially harmful.

b. Potential Impacts and Mitigation Measures

The Westin Maui will continue to maintain its maintenance and leak detection protocols for the existing underground fuel storage tanks. No construction activities are proposed for the tanks. During ground altering activities, precautions will be taken to ensure that any work within the vicinity of the underground tanks would not affect the structural integrity of the tanks. Filtering systems to capture petroleum from any parking structure runoff will be installed. Any known and any as yet undiscovered asbestos containing materials or other hazardous materials will be dealt with in accordance with law.

8. Archaeological Resources

a. Existing Conditions

The Kaanapali area has been widely developed with visitor-oriented resorts and condominiums and related infrastructure. The project site itself has undergone extensive alterations as a result of the construction of the Maui Surf Hotel and Westin Maui Resort & Spa. A review of prior archaeological research and historical information relative to the West Maui area, Kaanapali Resort area, and the project site itself was conducted in the Archaeological Inventory Survey (AIS) report prepared for the proposed Westin Maui Resort & Spa master plan improvements. See **Appendix "B"**. The State Historic Preservation District (SHPD) accepted the AIS and concurred with the monitoring recommendations in May 2014. See **Appendix "B-1"**.

From the mid-1800s through the mid-1900s, the Kaanapali area was utilized for sugar cane production. The Kaanapali Landing was constructed at Puu Kekaa (aka Black Rock), located north of the Westin Maui Resort & Spa. The landing served as the main storage and delivery point for sugar cane grown in the fields owned and cultivated by the Pioneer Mill Company. In the early 1960's, the planning and development of the Kaanapali Resort area

were initiated by Pioneer Mill's parent company, American Factors. American Factors (AmFac), developed the cane lands located in Kaanapali into the Royal Kaanapali golf course and the first hotel along the coastline, the Sheraton Maui Hotel, opened on Kaanapali Beach in 1963. Following the development of the Kaanapali Beach Hotel and the Whalers Shopping Village, in 1971, the Maui Surf Hotel opened at what is known today as the Westin Maui Resort & Spa's Ocean Tower (Fischer 2013). Owned by Interisland Resorts of Honolulu and Connecticut General Life Insurance Co., designed by Sam Chang Architect & Associates, and constructed by Pacific Construction Co., Ltd. and R.M. Takeyama, the Maui Surf Hotel consisted of a 12-story building shaped like a "very elongated 's'" which housed 354 rooms, a ballroom, and bar on 12 acres of oceanfront property (Quayle 1971).

In 1987, the Maui Surf Hotel was redeveloped as the Westin Maui which included the construction of the 10-story, 209-room Beach Tower, new meeting rooms, convention facilities, restaurants, commercial spaces, a health and fitness spa, and a 25,000 sq. ft. swimming pool area; as well as, the renovation of the existing Maui Surf Hotel building (Fischer 2013).

With the primary emphasis on tourism and the promotion of Lahaina and Kaanapali as a destination resort and vacation area, in addition to economic pressure from low sugar prices, AmFac was forced to phase out regional sugar cultivation and milling operations. The last sugar harvest for the Pioneer Mill Company occurred in 1999, with the mill itself closing in 2003 and thereby ending the chapter on the Sugar Era of West Maui (Kubota 2004).

In reviewing available archaeological research information, there was limited study of the Westin Maui Resort & Spa site itself due to the developed nature of the site. However, prior archaeological studies of neighboring areas, such as the Kaanapali Alii condominium located directly south of the Westin Maui Resort & Spa, as well as Maui Marriott Ocean Club and Hyatt Regency Maui sites located further south, and the Sheraton Maui Resort & Spa located north of the project site, have undergone archaeological study within the last 20 years.

Due to the prior limited study of the project site, as well as proposed improvements, an archaeological inventory survey was conducted for the

project within areas of proposed ground disturbance. A summary of the study, as well as its findings, are provided in the next section.

b. Potential Impacts and Proposed Mitigation Measures

The overall project area of potential effect (APE) was defined at the entire 11.987-acre project site. While there are a variety of improvements proposed, the archaeological inventory survey focused on areas where ground altering activities were anticipated. No archaeological testing was done in existing improved areas proposed for interior and non-structural improvements. Areas proposed for interior and/or non-structural improvements within existing improved areas were not selected for archaeological testing as no ground disturbance was anticipated. It is noted, however, that as the Westin Maui Resort & Spa is currently open and operating. Some areas proposed for improvements (removal of existing restroom and mechanical building and ballroom expansion area) were not included in the subsurface testing due to safety and operational concerns. Pedestrian surveys of these areas were conducted and results included in the AIS. Refer to **Appendix "B"**.

Archaeological testing was conducted within the existing, paved north and south parking lot areas at the Westin Maui Resort & Spa. The first phase of testing involved the use of Ground Penetrating Radar (GPR) to provide the archaeological researchers with preliminary data information for potential areas of existing underground utility improvements, recent disturbance associated with the hotel development, as well as the probability of encountering intact cultural disturbances. Following the results of the GPR testing and review of the data, mechanical subsurface testing was conducted.

A total of 18 backhoe testing (BT) trenches were included in the AIS study. Two (2) of the test trenches, BT-16 and BT-17, were dug in areas adjacent to the proposed ballroom expansion area. The remaining trenches were dug in the south parking area. Trenches were excavated in areas determined by the GPR results to contain homogeneous deposits which were more likely to represent undisturbed/naturally deposited sediments, and, therefore, having a higher probability of containing traditional Hawaiian cultural deposits. Trenches were approximately 0.8 meter (m) wide and 5 m long and ranged in depth, depending on the materials found in the trench.

Researchers excavated the trench until bedrock or water was discovered or if there was a safety concern relative to the depth of the trench.

An approximate 20 to 30 cm thick cinder layer was encountered in four (4) out of 15 trenches (BT-l, -3, -12, and -16) at a depth of 30 to 65 cmbs. Based on the presence and compaction of this buried layer, it is thought that this cinder layer, as well as the fill sediments below may be associated with the early construction of the Maui Surf Hotel. It is also likely that fill layers above the depth of the cinder layer are related to the redevelopment of the grounds for the Westin Maui Resort & Spa and more specifically associated with raising the elevation of parking lot area above the current elevation of the Kaanapali Parkway. It also is notable that the original ground surface was encountered at between 80 to 100 cmbs and for the most part, within the area adjacent to the Ballroom Expansion as well as the eastern section of the Proposed Parking Structure Area, consistent with the USDA soil description and typical profile associated with Ewa Silty Clay 0 to 3 percent Slopes (EeA) (Foote et al. 1972:30). The sediment of the western portion of the Proposed Parking Structure Area, however, appears to be a transitional area where the EeA soil and sediments intermix with the Jaucus Sand deposits (JaC) as evident in BT-2 and BT-6 where there is a burnt layer of kiawe roots likely representing a larger burn episode, as well as, evidence of a buried A Horizon in the northern section of BT-5.

The results of the current study, and more specifically the subsurface testing program, clearly illustrates the history of developments as well as a probable timeline for associated ground disturbing activities. This archaeological investigation did not identify any *in situ* historically significant cultural materials in a sub-surface context and resulting in no significant historic properties identified.

The AIS concluded that although the current study did not discover *in situ* historically significant sites or features, previous work on lands adjacent to the project area have encountered culturally sensitive human burials in a previously disturbed context. As such, it was recommended that an archaeological monitoring plan be prepared for the project and SHPD concurred with the recommendation. An archaeological monitoring plan will be prepared and submitted to the State Historic Preservation District (SHPD) for review and approval. Refer to **Appendix "B"** and **Appendix "B-1"**.

Should any significant archaeological resource be uncovered during work at the site, SHPD will be contacted immediately and all applicable inadvertent discovery procedures will be followed.

9. Cultural Impact Assessment

a. Historical Context

The Lahaina District was a favored place to live by chiefs and commoners alike, because of its natural resources and favorable weather. The valleys of Kahoma, Kanaha, Kauaula, and Olowalu among others were filled with *loi* wherever there was water to sustain the flood-style irrigation of wetland *loi*. In other areas dryland taro, sugar cane, sweet potato, coconut, banana, and breadfruit were grown. Lahaina is well known for its cultivation of the breadfruit tree (*ulu*). The original name for the Lahaina area was Lele and the famous saying of the area was "Ka Malu Ulu o Lele", the shade of the breadfruit trees at Lele (Handy, 1991). Also, in the time of Piilani, the area was called Honoapiilani, meaning "the bays belonging to Piilani" (Sterling, 1998).

The name Lahaina is a relatively recent name for the land and stems from the time of the chief Hua. During Hua's reign, when his kahuna Luahoomoe was condemned to death, he cursed the lands of Hua, which resulted in a drought and famine that spread the lands. The name Lahaina means *La* (sun) and *Haina* (cruel or merciless).

Lahaina was an agriculturally productive area utilizing the ten (10) perennial watercourses of Kahoma, Kanaha, and Kauaula with miles upon miles of aquaducts spanning the lowlands, watering a quilt-work pattern of wet and dryland taro, sweet potato, bananas, breadfruit, and other crops. Handy relates that the majority of Lahaina was watered by two (2) streams, Kahoma and Kanaha (Handy, 1991).

After consolidating his rule over the islands, Kamehameha returned to Lahaina to set up his seat of government for the Kingdom of Hawaii. Mokuula was the home of royalty until the capital was transferred to Honolulu under King Kamehameha III.

Also, with the reign of Kamehameha and an increase in foreign ships Lahaina became a port of call for the sandalwood trade and whaling era. The Lahaina whaling industry ended in 1860 with the onset of petroleum

and kerosene fuel, and finally the development of San Francisco as a full-service port (Proposal for the Historical Restoration and Preservation of Lahaina, 1961).

With the decline of the whaling industry, which brought a new populace to Lahaina, the sugar industry began to evolve. The sugar industry was developed in the mid-1800's and over the next few years, further developed with the consolidation of multiple smaller mills into what is known today as Pioneer Mill Company, Ltd. (Pioneer Mill). As with other sugar plantation communities, the late 1800's and early 1900's experienced the rapid expansion and growth of Pioneer Mill. A 1919 map by W.E. Wall further shows that about 15,000 acres of land were under sugar cane cultivation by Pioneer Mill (Rosendahl, 1989). Sugar cane cultivation extended into areas that reach Ukumehame to Honokowai.

In addition to sugar, pineapple was established as a viable commercial crop in the West Maui region. Baldwin Packers opened a cannery in Lahaina to process the crop in 1919. This was in the location of the existing Lahaina Cannery Mall. Pineapple was generally cultivated in areas that stretched from Honokowai and north to Honokohau.

Cultural Assessment Interviews

Cultural interviews were conducted with persons familiar with the area to gain an understanding of traditional cultural practices in the vicinity and potential impacts as a result of the proposed Project.

The following is a summary of those interviews conducted with persons familiar with the area. See **Appendix "C"**.

Lori Sablas

Lori Sablas was born in Lahaina, Maui in 1943. She is the daughter of Bartolome Mandrisa Sablas and Elizabeth Keau Sablas. Her father was Filipino and born in the Philippines. Her mother's maiden name was Kamaka. She was native Hawaiian and from Kahakuloa, Maui. Lori has four (4) sisters and two (2) brothers. Lori has lived on Maui for sixty-six (66) years and lived in California for three (3) years, where she worked at Stanford Research Institute. As a child, she lived in the Kahana plantation camp before moving to Lahaina town. She currently resides in Kihei and is a member of the Lahaina Restoration Foundation, Native Hawaiian

Hospitality Association, Maui Hawaiian Agencies and Organizations, and Hawaii Pacific Parks Association. Lori spent forty-five (45) years working in Kaanapali, twelve (12) years at the Sheraton Maui Resort & Spa, ten (10) years for the Kaanapali Beach Resorts Association (KBRA), and twenty-three (23) years at the Kaanapali Beach Hotel. Lori has an intimate knowledge of both the Kaanapali region and native Hawaiian culture.

Lori's familiarity of the project area comes from growing up in the Lahaina area and from her long career and involvement in the Kaanapali Resort area. Lori particularly recalled going to Kaanapali Beach, near Black Rock, with her father to lay lobster traps when she was around five (5) to ten (10) years old, when Kaanapali was undeveloped. She noted how interesting it has been to learn so much about the history and evolution and transformation of Kaanapali from being vacant land to the first master planned resort area on Maui.

When asked about cultural practices in the vicinity of the Westin Maui Resort & Spa property, Lori said she was not aware of any native Hawaiian practices around the area. She thought, however, that in the early 1700s, there was a battle fought near the project site, where two half-brothers fought over who would rule Maui and that the early 1900s, the area was used as the Koko-o-na-moku Race Track, where locals would gather to watch and bet on horse races. She also noted that before all the resort development, the area was covered with mostly kiawe trees and used for cattle grazing.

With regards to cultural concerns with the renovations at the Westin Maui Resort & Spa, Lori said that contractors should be careful during construction, especially with the construction of the parking structure, which will involve pile driving. She mentioned that early Hawaiians may have buried their deceased at Pu`u Keka`a, also known as Black Rock. During the initial development of the Sheraton Maui Resort & Spa, bones may have been shifted and scattered along the coastline between the Westin Maui Resort & Spa and the Hyatt Regency. She recommended archaeological monitoring and believed that it is of utmost importance to be respectful and mindful of any findings in the area. Lori also expressed concern in connection to beach access. Kaanapali Beach is one of Maui's nicest, most popular beaches. If the project proceeds, she recommended that free, beach access parking be dedicated so that locals, as well as tourists, can have easier access to the beach.

Lori expressed her general support for the project. Her biggest support is for the new parking structure, which will add much needed parking stalls for guests and employees. She was also excited about the employment opportunities (construction, etc.) that may result from this project. Lori said that for Maui in general, she would like to see the restoration of already developed areas, the enhancement of what's there, and the proposed improvements at the Westin are in-keeping with these principles.

Sueo "Sammy" Kadotani

Sam Kadotani was born in Kaanapali, Maui in 1923. He is the son of Kuichi and Haru Kadotani. His parents were Japanese immigrants. His father worked as a tug boat operator at Kaanapali Landing. His mother's maiden name was Matsuoka. She was a stay-at-home mother. Sam is the youngest of ten (10) children. He has two (2) brothers and seven (7) sisters. Sam is married to Hatsumi, and they have two (2) sons, Raymond and Owen. Sam has lived in the West Maui area for his whole life, except for in 1946, when he was drafted and served a year in the signal corps at Fort Shafter in Oahu. As a child, Sam lived in Kaanapali at the top of Kekaa Drive before moving to the original Puamana camp near the present day Lahaina Shores Beach Resort. After graduating from Lahainaluna High School in 1941, he worked for Pioneer Mill as a timekeeper, then as a manager for Pioneer Hospital. When the Pioneer Hospital closed, Sam was hired to manage the newly formed Maui Medical Group. Finally, he ran Kaiser Permanente's Lahaina Clinic for thirteen (13) years before retiring. Sam still lives in Lahaina town and is a member of the Boy Scouts of America, Lahaina Restoration Foundation, Lahainaluna High School Foundation, and Lahaina Hongwanji Mission. He also sits on the Board of Trustees for the Holy Innocents' Kahi Maluhia Columbarium.

Sam's familiarity of the project area comes from growing up in Kaanapali and living practically his whole life in the Lahaina area. When he was a child, the Kaanapali Beach Resort area was undeveloped and predominantly covered with kiawe trees. Sam remembers collecting kiawe beans from the area to feed to his family's pigs. He and his siblings would also go to Kaanapali Beach with buckets of food scraps. They would bury the buckets in the sand with the hopes of catching sand crabs for dinner. Sam also recalled removing Japanese graves along the shoreline of Kaanapali Beach in 1960, before any of the resorts had been built. The bones were collected and given to Pioneer Mill for cremation.

When asked about his interest in the Westin Maui Resort & Spa or the surrounding areas, Sam emphasized the importance of maintaining and exhibiting Hawaii's culture. He fondly remembers attending many shows, hula performances and Hawaiian concerts, at the Maui Surf Hotel (original hotel at the Westin Maui Resort & Spa property) and the Kaanapali Beach Hotel.

Sam's support for the project comes primarily from an economic standpoint. To him, renovation of the hotels is vital to maintaining Hawaii's tourism industry, which is a major driver of the economy. On a personal note, Sam mentioned that the livelihood of both of his sons, Raymond and Owen, has relied on tourism. Raymond owns Take Home Maui, a company that sells pineapples and other fruits and Hawaiian gift baskets. Owen has worked as a chef at many restaurants in Kaanapali. Therefore, Sam expressed his support for any project that could help stimulate the tourism industry and tourist spending on Maui.

When asked about any cultural practices in the vicinity of the Westin Maui Resort & Spa property, Sam said he was not aware of any native Hawaiian practices in the area. As noted earlier, the resort area was covered in kiawe trees before the development of the Kaanapali Beach resorts.

With regards to cultural concerns with the renovations at the Westin Maui Resort & Spa, Sam said that contractors should be careful during construction. As mentioned previously, bones have been found along Kaanapali Beach. Sam recommends that respect and care be given to any remains that may be found during the renovations. He also recommends that the features of the resort that make it unique to Hawaii be kept intact.

Sam expressed his general support for the project. He's excited about the impacts that renovations and development in the Kaanapali area will have for the tourism industry.

b. <u>Potential Impacts and Proposed Mitigation Measures</u>

Based on interviews of persons familiar with the Kaanapali Resort area and the Westin Maui Resort & Spa site specifically, coupled with the use of the site for hotel and resort uses since the 1970's, there are no anticipated cultural impacts with the proposed project. Interviewees did not identify any current cultural practices occurring at the site nor did they recall past

practices. As noted previously and in the comments received during the cultural interviews, should any historic or cultural remains be discovered during the project construction, the Applicant will contact and coordinate with SHPD on the protocols and procedures for handling of said materials.

10. Scenic and Open Space Resources

a. Existing Conditions

The subject property is located makai of Honoapiilani Highway with the West Maui Mountains visible to the east and the islands of Molokai and Lanai visible to the west. The Westin Maui Resort & Spa also abuts Kaanapali Beach.

b. Potential Impacts and Proposed Mitigation Measures

The proposed master plan improvements will be visually consistent with the design elements which comprise the resort property. The majority of the proposed improvements will occur within the existing buildings and will not have an adverse impact upon scenic or open space resources. The new one story back of house structure and the new 3-½ and 4-½ level parking garage will be constructed in the existing parking area, which lies mauka of the hotel building and will not be visible from the shoreline. The first level of the parking garage will be four (4) feet below grade. Additional landscaping will be installed around the garage and between the structure and Kaanapali Parkway, and existing hibiscus shrubs along Kaanapali Parkway and monkey pod trees along the subject property's border with Kaanapali Alii, will provide visual screens for the new parking structure. Therefore, adverse impacts to coastal scenic and open space resources are not anticipated as a result of the proposed project.

11. Beach Access

a. Existing Conditions

Public beach access is provided to the north of the subject property between the Westin Maui Resort & Spa and Whalers Village. The public easement contains public parking stalls for beach use. The Westin Maui Resort & Spa currently provides 30 public parking stalls for beach use. Refer to **Figure 3**. Additionally, there are 21 public parking stalls in the adjacent Whalers Village parking area.

Visitors to the Westin Maui Resort & Spa may also access the beach through the lobby and pool areas of the resort.

b. Potential Impacts and Proposed Mitigation Measures

The proposed master plan improvements for the Westin Maui Resort & Spa will not impact existing provisions for beach access and will not increase the demand for beach access. The Applicant recognizes that Kaanapali Beach is a popular attraction among residents and visitors. There are 30 existing designated public beach parking stalls provided by the Applicant free of charge in the northern parking area, adjacent to the Whaler's Village shopping complex. As mentioned previously, the proposed project will be contained within the subject property and will not impact the public beach access north of the resort. Access through the lobby and pool area to the beach will not be affected.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Land Use and Community Character

a. Existing Conditions

The vast majority of lands in West Maui are either State designated "Conservation" or "Agricultural". Generally, "Conservation" lands occupy the higher elevations, while the "Agricultural" district spans the middle ground. Major exceptions to this trend are the Honolua Stream and Pohakupule Gulch areas, where the "Conservation" district extends down to sea level.

"Urban" designated lands, then, are left to occupy the lower elevations along the coast. Kapalua and Kaanapali contain Community Plan designations reflective of their resort nature. The communities of Kahana and Napili contain a mixture of resort, residential, and business uses.

Lahaina, meanwhile, encompasses a diverse mix of land uses, including residential, business, light and heavy industrial, recreational, and agricultural uses. The town of Lahaina is the commercial center of West Maui. The town contains several shopping centers and retail business areas, and serves as a hub for the region's residential housing. To the east (mauka) of the Pioneer Mill smokestack in Lahaina, there exists a multitude of single-family homes for island residents.

West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by its many white-sand beaches and scenic landscapes. Visitor accommodations are located in Lahaina and the resort communities of Kaanapali, Kahana, Napili, and Kapalua. The State of Hawaii's Kapalua-West Maui Airport at Mahinahina links the region to Oahu and other neighbor islands.

Diversified agriculture and pineapple fields occupy much of the land in the West Maui region. Maui Land & Pineapple Company's fields span along the slopes of the West Maui Mountains north of Lahaina.

b. Potential Impacts and Proposed Mitigation Measures

The proposed improvements are located within an existing resort property and are, therefore, not anticipated to impact neighboring land uses or the character of the community.

2. Population

a. Existing Conditions

The population of the County of Maui has exhibited relatively strong growth over the past decade. According to the U.S. Census, the resident population of the County of Maui in 2000 was estimated to be 128,094 and was estimated to be 154,834 in 2010. This represents a 20.9 percent increase over the past decade (U.S. Census Bureau, 2010). By 2020, the population of the County of Maui is projected to reach 174,450 and 199,550 by 2030 (County of Maui, Department of Planning, 2006).

The subject property is located along the western coast of Maui, within the West Maui Community Plan region. The County's population has grown, including the resident population of the West Maui region. The estimated population of Lahaina District in 2000 was approximately 18,000 and approximately 22,200 in 2010 (U.S. Census Bureau, 2010), comprising 14 percent of the island's population. The resident population for this region in 2010 increased by 23 percent since 2000. By 2020, the population for the region is projected to reach approximately 25,100 and 29,000 by 2030 (County of Maui, Department of Planning, 2006).

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is limited to the existing resort property. Inasmuch as the resort primarily serves hotel guests and visitors, the proposed project is not anticipated to impact population in the region.

3. Economy and Labor Force

a. Existing Conditions

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which is one of the State's major resort destination areas. Major hotels in this region include the Westin Maui Resort & Spa, Hyatt Regency Maui, Maui Marriott Resort and Ocean Club, the Sheraton Maui, Westin Kaanapali Ocean Resort, Honua Kai, the Residences at Kapalua Bay, and the Ritz-Carlton Kapalua.

West Maui's visitor orientation is reflected in the unique character and history of Lahaina Town, which serves as a center for retail outlets, as well as tourism activities. The 137,000 sq. ft. Lahaina Gateway Shopping Center located to the south of the Project area on the mauka side of Honoapiilani Highway and Keawe Street, currently represents the largest retail shopping center in Lahaina. The 120,000 sq. ft. Lahaina Cannery Mall is also located south of the Project area.

The closure of the Pioneer Mill in 1999 marked the end of sugar cane cultivation in West Maui. In December 2009, Maui Land & Pineapple Company ceased larger scale pineapple cultivation. The cessation of these two (2) major plantation crops ended large scale plantation-style agriculture in the West Maui region. The largest agriculture operation in West Maui today is the 300-acre Kaanapali Coffee Farm.

As of October 2013, Maui County's non-seasonally adjusted unemployment rate stood at 5.0 percent, a reduction of 0.7 percent from October 2012. Similarly, Maui Island's non-seasonally adjusted unemployment rate for October 2013 stood at 4.8 percent, a reduction of 0.7 percent from October 2012 (DLIR, 2013).

b. Potential Impacts and Proposed Mitigation Measures

The Applicant is reviewing construction schedule scenarios for the proposed project. The selection of the construction schedule involves balancing diverse and sometimes competing considerations such as hotel operations, staffing, mobilization of construction resources and the safety and comfort of hotel guests. The feasibility of completing construction without closing the hotel, and minimizing adverse economic impacts from project construction is being assessed by the Applicant. The Applicant will coordinate with hotel employees, the Hawaii-International Longshore and Warehouse Union Local 142 (ILWU), vendors and other parties who may be adversely impacted by the construction duration of the proposed project.

On a short-term basis, the project will generate construction and construction-related employment. Over the long term, the resort generates State and County tax revenues and provides employment for local residents. No significant negative impacts on labor conditions are anticipated as a result of the proposed action.

C. PUBLIC SERVICES

1. Solid Waste Disposal

a. Existing Conditions

Single-family residential automated solid waste collection service is provided by the County of Maui on a twice-a-week basis. Residential solid waste collected by County crews is disposed at the County's 55-acre Central Maui Landfill, located four (4) miles southeast of the Kahului Airport. In addition to County-collected residential refuse, the Central Maui Landfill also accepts residential and commercial waste from private collection companies. Refuse for the existing Westin Maui Resort & Spa is provided by a private collection company.

A recycling and refuse convenience center located at Olowalu serves West Maui residents and accommodates household refuse and green waste, as well as used oil and recyclable materials. No commercial waste is accepted at this facility. A private waste disposal service has been contracted by the County to transport waste from this facility to the Central Maui Landfill.

To minimize waste that goes to the Central Maui Landfill, the Westin Maui Resort & Spa implemented waste diversion programs. Recycling programs include separating plastic water bottles and newspapers in guest rooms, emailing billing statements to guests, use of iPads for guest to view maps, access resort fee cards and other resort opportunities, and electronic delivery of guest comment cards. The spa uses eco-friendly plastic cups as well as Duro brand paper bags (a brand committed to protect the earth through recycling) and recycles 100 percent of Kraft and bleached paper waste. Food and beverage operations eliminated use of plastic bags and styrofoam products, and uses renewable/compostable straws. For other areas, recycle bins are placed next to large printers and copy machines. See **Appendix "D"**.

b. Potential Impacts and Proposed Mitigation Measures

Construction-related waste will be disposed of in accordance with policy and practice directives established by the Solid Waste Division to ensure that there are no adverse impacts to the County's Central Maui Landfill. Throughout construction and following project completion, solid waste will continue to be handled by a private refuse collection company. In the long term, the proposed project is not anticipated to impact the solid waste capacity of the Central Maui Landfill.

2. Medical Facilities

a. Existing Conditions

The only major medical facility on the island is Maui Memorial Medical Center, located approximately 25 miles from Lahaina, midway between Wailuku and Kahului. The 231-bed facility provides general, acute, and emergency care services. Emergency ambulance services are located at the Lahaina Comprehensive Health Center at the Lahaina Civic Center Complex and in Napili at the Napili Fire Station.

In addition, medical services are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, Kaiser Permanente's Lahaina Clinic, and other private medical and dental offices.

b. Potential Impacts and Proposed Mitigation Measures

The proposed action is not anticipated to affect the service capabilities or demands of emergency medical or general care operations.

3. Police and Fire Protection

a. Existing Conditions

The subject property is within the Maui Police Department's Lahaina District service area. The Department's Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately four (4) miles southwest of the Project area. The Lahaina Patrol includes 54 full-time personnel, including management-level officers and field officers. Additional personnel consist of public safety aides and administrative support staff.

Fire prevention, suppression and protection services for the Lahaina District are provided by the Department of Fire and Public Safety's Lahaina Fire Station, in the Lahaina Civic Center and the Napili Fire Station, located north of the Project area in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by approximately 30 full-time personnel. The Napili Fire Station consists of an engine company including 15 full-time firefighting personnel. All firefighting personnel are first-responders trained to provide emergency medical care.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not anticipated to increase the demand for police or fire protection.

4. Schools

a. Existing Conditions

The West Maui area is served by four (4) public schools operated by the State of Hawaii, Department of Education (DOE): Lahainaluna High School, Lahaina Intermediate School, Princess Nahienaena Elementary School and King Kamehameha III Elementary School. The region is also served by privately operated pre-elementary and elementary schools, such as Sacred Hearts Elementary School and Maui Preparatory Academy.

University of Hawaii-Maui College (UH-Maui), which is located in Kahului, is a part of the University of Hawaii system. In addition, there is a UH-Maui Lahaina Education Center that opened in Fall 2007. UH-Maui is the primary higher education institution serving Maui.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not a direct population generator. As such, the proposed action is not anticipated to impact educational facilities in the region.

5. Recreational Facilities

a. Existing Conditions

West Maui has numerous recreational facilities offering diverse opportunities for the region's residents. These facilities include several County and State parks and beach parks. Approximately one-third of the County parks are situated along the shoreline and offer excellent swimming, diving, and snorkeling areas. In addition, Kaanapali and Kapalua Resorts operate world-class golf courses available for public use.

Recreational facilities in Lahaina town include the Lahaina Aquatic Center, the West Maui Youth Center, the Lahaina Recreation Center, and the Lahaina Civic Center. The Lahaina Aquatic Center contains an Olympic-size swimming pool, a children's wading pool, a paved parking lot, and office and storage space, as well as shower, restroom, and changing room facilities. The 15-acre addition to the Lahaina Recreation Center includes fields, parking, and washroom facilities. The West Maui Youth Center has a building for youth activities, as well as paved parking, an outdoor playground, and a basketball court. The Lahaina Recreation Center has baseball fields and other playfields for soccer and football, as well as restrooms and paved parking facilities. The Lahaina Civic Center includes a gymnasium, amphitheater, and tennis courts complex, as well as restrooms and paved parking facilities.

The clear ocean waters and well-developed reef systems along the Lahaina and Kaanapali coastlines offer many recreational opportunities for residents and visitors. Fishing, by shorecasting and netting, is practiced in the waters near the outlet of Kauaula Stream and Makila Point. Edible seaweed collecting, octopus diving, and spearfishing occur on the adjacent reef flat

fronting Kaanapali. During periods of wave activity, the West Maui coastline is a good location for surfing.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not anticipated to impact recreational facilities in the region. As previously noted, the Applicant has 30 designated public beach parking stalls in its northern most parking lot. Parking provided by the Applicant is free of charge.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

Access to the Lahaina region is provided by Honoapiilani Highway from Central (Wailuku/Kahului) and South (Kihei/Wailea) Maui. The following is a summary of the major roadways in the vicinity of the project site.

Honoapiilani Highway

This principal arterial roadway provides north-south regional mobility and access to communities in the region. For most of its length, Honoapiilani Highway is a two-lane, two-way arterial roadway with median left-turn lanes provided at major intersections. From Lahaina town (at Lahainaluna Road) to the Honokowai Stream bridge (at the Lahaina WWTP), Honoapiilani Highway functions as a four-lane arterial roadway and is owned by the State of Hawaii.

Kaanapali Parkway

This two-way, four-lane, divided, private roadway serves as the primary access to the various resort properties of the Kaanapali Resort. The project site is located along Kaanapali Parkway.

Nohea Kai Drive

This two-lane, two-way private roadway extends from Kaanapali Parkway to the Hyatt Regency Maui and provides access to various Kaanapali Resort hotels. The Royal Kaanapali Golf Course borders Nohea Kai Drive to the

east and the Maui Marriott and the Hyatt Regency Maui border Nohea Kai Drive to the west.

Kekaa Drive

This north-south two-lane, two-way private roadway provides access to the northwestern portion of the Kaanapali Resort from Kaanapali Parkway. Various resort condominium complexes are served off of Kekaa Drive.

Westin Maui Main Driveway

This is a two-way, two-lane, private roadway that provides access to the subject property's lobby, self-parking, and valet parking lots.

Westin Maui Back of House Access

This two-way, two-lane, private road provides access to the subject property's back of house operations, public beach access parking, and reserved parking for medical offices located at Whaler's Village.

Traffic counts were taken in late November 2012 at the following intersections: Honoapiilani Highway and Kekaa Drive, Honoapiilani Highway and Kaanapali Parkway, Kaanapali Parkway and Nohea Kai Drive, Kaanapali Parkway and the Westin Maui main driveway, and the Kaanapali Parkway and the Westin Maui back of house driveway. Adjustments to the traffic counts were made based on the occupancy of the hotel during the traffic counts as well as the average hotel occupancy rate for the year. See **Appendix "D"**, Traffic Impact Analysis Report (TIAR).

A Level of Service (LOS) analysis of the existing conditions at the study traffic intersections indicated that during the AM and PM peak hours of traffic, all of the study intersections, except the Honoapiilani Highway and Kaanapali Parkway intersection, operate at a LOS C or better. The existing Honoapiilani Highway and Kaanapali Parkway intersection is signalized, however, the TIAR found that due to the high volumes of traffic traveling to and from the various Kaanapali resorts, there are three (3) movements which operate at LOS E or F. The intersection movements include the eastbound left-turn and through lane during both AM and PM peak hour, the northbound left-turn and southbound left-turn during the PM peak hour and the westbound left-turn/through/right-turn during the PM peak hour. Overall, the TIAR concluded that with existing conditions the Honoapiilani

Highway and Kaanapali Parkway intersection operates at a LOS C during the AM peak hour and LOS D during the PM peak hour.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project entails renovation work at an existing resort property and creates no additional guestrooms. In the short term, there will be an increase in the number of vehicle trips to the project site during the construction phase, though the relative increase in vehicle trips on Honoapiilani Highway will be minimal.

In the long term, while the proposed master plan improvements will serve to enhance the attractiveness of the Westin Maui Resort & Spa, those improvements will not in themselves generate additional vehicle trips. The improvements will not result in additional hotel rooms or destinations which will either generate or attract additional vehicle trips. As a result, no significant impacts on the area roadway system are anticipated.

The TIAR concluded that with the implementation of the State Department of Transportation's Lahaina Bypass Road, Honoapiilani Highway will be relieved of some of the northbound and southbound traffic volumes which would in turn, improve the LOS at the Honoapiilani Highway and Kaanapali Parkway intersection. Without the Lahaina Bypass Road, based on existing conditions, improvements to the Honoapiilani Highway and Kaanapali Parkway intersection to modify the eastbound approach to include two (2) dedicated left-turn lanes, a shared through/right-turn lane and a dedicated right-turn lane would be needed to achieve LOS E or better at the intersection.

Due to the nature of the proposed improvements to the Westin Maui Resort & Spa, the TIAR recommended that no additional mitigation be proposed. Refer to **Appendix "D"**.

2. Water System

a. Existing Conditions

The West Maui region is served by the County's Department of Water Supply domestic water system. The County water system services the coastal areas from Launiupoko to Kaanapali and from Honokowai to Napili. The County's system includes both surface and groundwater sources.

The sources of water for Lahaina are five (5) deepwells located above Alaeloa and referred to as Napili Wells 1, 2, and 3, and Honokohau Wells A and B, and four (4) wells above Lahaina town, referred to as Kahana 1 and 2 and Waipuka 1 and 2. These wells are supplemented by water treatment plants above Honokowai and Lahainaluna High School that draw surface water from the Honolua Ditch and Kanaha Valley. Several miles of 12- and 16-inch lines and two (2) in-line booster stations convey water from these sources to consumers in Lahaina. Storage is provided by a 1.5 million gallon (MG) storage tank above Wahikuli and a 1.0 MG tank on Lahainaluna Road.

Potable water service in the Kaanapali Resort area is provided by the privately owned and operated Hawaii Water Service (HWS) (formerly Kaanapali Water Service). Service to the existing Westin Maui Resort & Spa is provided by HWS via three (3) water meters. Two (2) of the meters (4-inch and 6-inch) are utilized for potable water service and the third meter (8-inch) is for fire protection. Currently, the resort has an average daily water demand of approximately 273,180 gallons per day (gpd).

b. <u>Potential Impacts and Proposed Mitigation Measures</u>

Based on the proposed improvements, the PER noted that the average daily water demand would be approximately 275,750 gpd, an approximately one percent (1%) increase of the existing water use at the Westin Maui Resort & Spa. HWS has sufficient capacity to meet this increased water demand.

Water conservation measures have been implemented at the Westin Maui Resort & Spa over the last two (2) years, including the installation of condenser water pump VFDs, leak repairs to the pool weir, low flow shower head replacement in all guestrooms, installed new laundry equipment to conserve water, and programs for hotel guests to forego daily towel replacement. Refer to **Appendix "E"**. The implementation of water conservation measures has reduced potable water consumption by approximately 60,000 gallons per day.

It is anticipated that the continued water demand for the Westin Maui Resort & Spa will not adversely impact the water source or HWS's distribution system.

3. Wastewater System

a. Existing Conditions

The County Department of Environmental Management's Wastewater Reclamation Division provides sanitary sewer service for the West Maui region.

Wastewater from the Kaanapali and Lahaina areas is treated at the County's Lahaina Wastewater Reclamation Facility (LWRF) located approximately three (3) miles south of the Project site on the east (mauka) side of Honoapiilani Highway. The LWRF's total treatment capacity is 9.0 million gallons per day (mgd). The average daily flow is approximately 4.1 mgd.

A portion of the treated effluent is used to irrigate the Kaanapali Golf Courses. The remaining treated effluent is disposed into four (4) injection wells located within the facility. Under the conditions of its U.S. Environmental Protection Agency (EPA) permit, the County is allowed to dispose a maximum of 6.7 mgd of treated effluent into the injection wells.

There are three (3) existing service connections at the Westin Maui Resort & Spa to the County of Maui wastewater system. There is a 10-inch sewer line connecting to the existing 15-inch County sewer line within Kaanapali Parkway, and 8-inch and 6-inch sewer laterals connecting to the existing 10-inch County sewer line located in the back of house driveway between the Westin Maui Resort & Spa and Whaler's Village. The 10-inch County line connects to the 15-inch County sewer line within Kaanapali Parkway. Existing wastewater produced at the Westin Maui Resort & Spa is approximately 342,340 gpd.

b. Potential Impacts and Proposed Mitigation Measures

The existing sewer collection and treatment system is anticipated to continue to be able to accommodate the subject property. The PER concluded that following the proposed improvements, wastewater flow is estimated to be 352,490 gpd or an approximate increase of three percent (3%) from the existing use. Although there is existing wastewater treatment capacity available at the LWRF, service is not confirmed until building permit issuance. Refer to **Appendix "A"**.

Additionally, in discussions with the County Department of Environmental Management (DEM), it was determined that the location of the proposed parking garage will cover an area with existing sewer infrastructure which services the Westin Maui Resort & Spa. As such, DEM will require the relocation of an approximately 140-linear feet portion of the existing sewer line. It is noted that there is an existing easement dedicated to the County of Maui for infrastructure utilities and the relocated sewer line will be within a new easement. Refer to Section 6, Preliminary Development Plans Figure 2-2, of this SMA application.

It is noted that The Westin Maui Resort & Spa will install irrigation infrastructure to enable utilization of R-1 water when service and source become available.

No adverse impacts to wastewater systems are anticipated as a result of the proposed action.

4. Drainage

a. Existing Conditions

Runoff from the Westin Maui is currently collected by a system of catch basins, drywells, storm drain manholes, onsite drainlines, drain inlets, and underground pipes located throughout the subject property. Generally, runoff generated from areas makai of the resort buildings flows towards the shoreline. Runoff from the makai portion of the project site flows into an onsite network of drain inlets, drain pipes, and drywells. A portion of the flow is retained and percolated within the drywells, while the rest of the runoff sheet flows into the Pacific Ocean. Runoff generated from areas mauka of the existing buildings flows towards Kaanapali Parkway and is collected by an onsite, underground collection system. The runoff is then conveyed to an off-site collection pond at the southeast corner of the subject property. The collection pond also collects runoff from the Kaanapali Alii, adjacent to the project site to the south, and overflows into three (3) culverts beneath Nohea Kai Drive. The culverts lead to the water feature on the 18th fairway of the Kaanapali Kai Golf Course which acts as a retention basin.

Refer to **Appendix "A"**.

b. Potential Impacts and Proposed Mitigation Measures

There will be a minimal increase in runoff due to this development, (0.2 cfs for the 10-year, 1-hour storm) as a majority of the proposed improvements will occur on areas which are already improved. Therefore, no significant impact is anticipated to adjacent and downstream properties. The proposed onsite storm drainage system will consist of a combination of drain inlets, storm drain manholes, underground piping, and underground detention/retention. Filter inserts will be installed into all existing and proposed drain inlets. In addition, a site-specific Water Quality Management Plan, which will incorporate Best Management Practices (BMPs), will be included in the design plans for the project, as required by the County of Maui. The BMPs will include plans for both the construction and operation phases of the proposed action.

Refer to **Appendix "A"**.

5. Electrical, Telephone, and Cable Television (CATV) Services

a. Existing Conditions

Electrical, telephone, and CATV service to the West Maui region is provided by Maui Electric Company, Ltd. (MECO), Hawaiian Telcom, and Oceanic Time Warner Cable, respectively.

b. Potential Impacts and Proposed Mitigation Measures

Electrical service is already provided at the subject property by Maui Electric Company. The electrical consultant will discuss the electrical requirements associated with the proposed renovations with Maui Electric staff prior to the start of construction. The proposed project is not anticipated to significantly impact electrical services in the area. Existing telephone and cable television services are also not anticipated to be significantly impacted as a result of the proposed action.

Additionally, the Westin Maui has implemented energy conservation measures at the resort, including the replacement of outdoor lights to LED bulbs, installation of new energy efficient air handlers, and installation of room sensors for meeting rooms to control lighting and air conditioning.

E. CUMULATIVE AND SECONDARY IMPACTS

Pursuant to the Hawaii Administrative Rules, Chapter 200, Section 11-200-2, entitled Environmental Impact Statement Rules, a cumulative impact means:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

A key element in understanding the requirement for assessing cumulative impacts, therefore, is the need to recognize what constitutes "reasonably foreseeable actions".

Cumulative impacts are defined as the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.

The proposed action is not part of a larger action, nor would it occur within the context of such actions. The proposed project is limited to the developed Westin Maui Resort & Spa. It is noted that there are two (2) known construction projects within the Kaanapali Resort area which may proceed within the same time frame as the Westin Maui master plan improvements. The Hyatt Regency Maui (Hyatt Maui), located further south of the Westin Maui Resort & Spa, received approvals in 2008 to construct approximately 130 new units as well as parking improvements, a new fitness facility, convenience store, a lobby/registration building as well as outdoor function space. The Hyatt Maui project completed an Environmental Impact Statement (EIS) to review project impacts and received a SMA Use Permit for the project. With the mitigation measures included in the EIS and SMA permit, it is assumed that the Hyatt Maui project will address its potential impacts. At the current time, the Hyatt Maui project initiated construction on the project. The Royal Lahaina Resort (Royal Lahaina) revitalization project received a SMA Use Permit and SSV approval for the renovation of the resort in 2007. In December 2012, Royal Lahaina received a two (2) year SMA time extension to complete construction of the project. To date, the Royal Lahaina has completed a portion of its demolition actions which were approved in the SMA permit and intends to pursue construction of the new improvements. Similar to the Hyatt Maui project, it is assumed that with the implementation of the SMA permit conditions for the Royal Lahaina, potential impacts related to that project will be mitigated.

Secondary impacts are those which have the potential to occur later in time or farther in distance, but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of the project. The proposed project is limited to improvements for the Westin Maui Resort & Spa and focuses on revitalization of an existing resort property. The project does not include additional hotel units but focuses on upgrading the hotel property features to remain an attractive destination for visitors and provide features which are desirable by Westin Maui Resort & Spa guests. Based on these features, the proposed action is not anticipated to result in significant adverse secondary impacts.

III. RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS

III. RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205A, Hawaii Revised Statutes (HRS), all lands in the State have been divided and placed into one (1) of four (4) land use districts by the State Land Use Commission. These land use districts have been designated "Urban", "Rural", "Agricultural", and "Conservation". The Project site is located within the State "Urban" district. The proposed action is compatible with, and permissible within, the State "Urban" land use district. See **Figure 11**.

B. CHAPTER 226, HAWAII STATE PLAN

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The proposed action is consistent with the following goal of the Hawaii State Plan.

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations.

1. Objectives and Policies of the Hawaii State Plan

The proposed project is consistent with the following objectives and policies of the Hawaii State Plan:

Chapter 226-5, HRS, Objectives and Policies for Population.

226-5(b)(2), HRS: *Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.*

226-5(b)(3), HRS: *Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.*

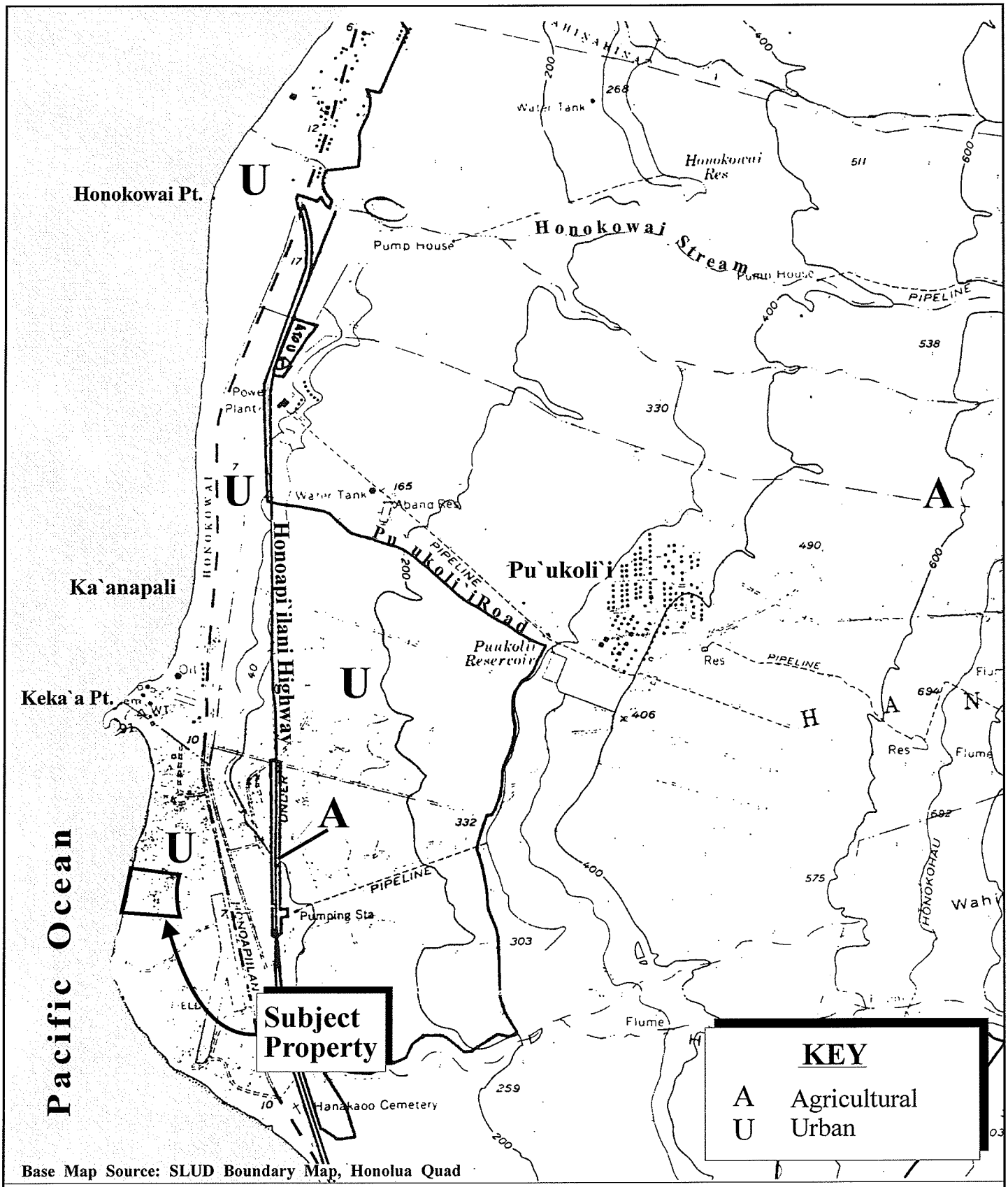


Figure 11 Proposed Master Plan Improvements for the Westin Maui Resort & Spa

State Land Use District Classifications

0 1000 Feet
500 2000

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

Starwood/Westin MP/SLUD

Chapter 226-8, HRS, Objective and Policies for the Economy – visitor industry.

226-8(a), HRS: *Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.*

226-8(b)(2), HRS: *Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.*

226-8(b)(3), HRS: *Improve the quality of existing visitor destination areas.*

226-8(b)(5), HRS: *Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.*

226-8(b)(6), HRS: *Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.*

2. **Priority Guidelines of the Hawaii State Plan**

The proposed action coincides with the following priority guidelines of the Hawaii State Plan.

Chapter 226-103, HRS, Economic Priority Guidelines.

226-103(a)(8), HRS: *Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:*

(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.

(B) A clean industry that would have minimal adverse effects on Hawaii's environment.

(C) An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment.

(D) An industry that would provide reasonable income and steady employment.

226-103(b)(1), HRS: *Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawaii's residents and visitors.*

226-103(b)(2), HRS: *Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.*

226-103(b)(3), HRS: *Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.*

226-103(b)(5), HRS: *Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.*

C. NEW DAY IN HAWAII PLAN

Governor Neil Abercrombie proposed the "New Day In Hawaii" plan (New Day Plan) to assist the State of Hawaii in meeting three goals: (1) to invest in education and rebuild our economy, (2) to sustain our Hawaii for future generations, and (3) to restore public confidence. Within the New Day Plan, there were various policies and objectives to support the outlined goals. In reviewing the proposed action, the following policy and objective of the New Day Plan within the Economy section would be met:

Increase Self-Reliance and Protect Our Resources

- Advance sustainable tourism and development.

D. MAUI COUNTY GENERAL PLAN

As indicated by the Maui County Charter, the purpose of the General Plan shall be to:

> *... indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify*

objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density; land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.

Chapter 2.80B of the Maui County Code (MCC), relating to the General Plan and Community Plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan. The Countywide Policy Plan was adopted as Ordinance No. 3732 on March 24, 2010, while the Maui Island Plan, which delineates areas for future urban and rural growth as part of a Directed Growth Strategy, was adopted as Ordinance No. 4004 on December 21, 2012.

The following sections identify pertinent objectives, policies, implementing actions and related provisions set forth in the Countywide Policy Plan and the Maui Island Plan. It is recognized that both documents are comprehensive in nature and address a number of functional planning areas which apply to all programs, plans, and projects. However, for purposes of addressing General Plan compliance requirements, policy considerations which are deemed most relevant in terms of compatibility and consistency are addressed in this report section.

1. Countywide Policy Plan

With regard to the Countywide Policy Plan, Section 2.80B.030 of the MCC states the following:

The countywide policy plan shall provide broad policies and objectives which portray the desired direction of the County's future. The countywide policy plan shall include:

1. *A vision for the County;*
2. *A Statement of core themes or principles for the county; and*
3. *A list of countywide objectives and policies for population, land use, the environment, the economy, and housing.*

Core principles set forth in the Countywide Policy Plan are listed as follows:

1. *Excellence in the stewardship of the natural environment and cultural resources;*
2. *Compassion for and understanding of others;*

3. *Respect for diversity;*

4. *Engagement and empowerment of Maui County residents;*

5. *Honor for all cultural traditions and histories;*

6. *Consideration of the contributions of past generations as well as the needs of future generations;*

7. *Commitment to self-sufficiency;*

8. *Wisdom and balance in decision making;*

9. *Thoughtful, island-appropriate innovation; and*

10. *Nurturance of the health and well-being of our families and our communities.*

Congruent with these core principles, the Countywide Policy Plan identifies goals, objectives, policies and implementing actions for pertinent functional planning categories, which are identified as follows:

1. *Natural environment*

2. *Local cultures and traditions*

3. *Education*

4. *Social and healthcare services*

5. *Housing opportunities for residents*

6. *Local economy*

7. *Parks and public facilities*

8. *Transportation options*

9. *Physical infrastructure*

10. *Sustainable land use and* growth management

11. *Good governance*

With respect to the master plan improvements for the Westin Maui Resort & Spa, the following goals, objectives, policies and implementing actions are illustrative of the Project's compliance with the Countywide Policy Plan:

STRENGTHEN THE LOCAL ECONOMY

Goal:

Maui County's economy will be diverse, sustainable, and supportive of community values.

Objective:

Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.

Objective:

Support a visitor industry that respects the resident culture and the environment.

Policies:

- *Encourage and educate the visitor industry to be sensitive to island lifestyles and cultural values.*
- *Encourage a spirit of welcome for residents at visitor facilities, such as by offering kamaaina incentives and discount programs.*
- *Support the renovation and enhancement of existing visitor facilities.*
- *Foster an understanding of local cultures, customs, and etiquette, and emphasize the importance of the Aloha Spirit as a common good for all.*
- *Support the diversification, development, evolution, and integration of the visitor industry in a way that is compatible with the traditional, social, economic, spiritual, and environmental values of island residents.*
- *Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry.*

The proposed master plan improvements at the Westin Maui Resort & Spa are consistent with the themes and principles of the Countywide Policy Plan.

2. Maui Island Plan

The Maui Island Plan (MIP) is applicable to the island of Maui only, providing more specific policy-based strategies for population, land use, transportation, public and community facilities, water and sewage systems, visitor destinations, urban design, and other matters related to future growth.

As provided by Chapter 2.80B, the MIP shall include the following components:

1. *An island-wide land use strategy, including a managed and directed growth plan*
2. *A water element assessing supply, demand and quality parameters*
3. *A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration*
4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*
5. *Milestone indicators designed to measure implementation progress of the MIP*

It is noted the Ordinance No. 4004 does not address the component relating to the implementation program. Chapter 2.80B of the Maui County Code, relating to the General Plan, was amended via Ordinance No. 3979, October 5, 2012, to provide that the implementation program component be adopted no later than one (1) year following the effective date of Ordinance No. 4004. In December 2013, the Council approved a time extension for approval of the implementation chapter to March 31, 2014. In March 2014, the Council approved a time extension to May 29, 2014 for adoption of the implementation program.

The MIP addresses a number of planning categories with detailed policy analysis and recommendations which are framed in terms of goals, objectives, policies and implementing actions. These planning categories address the following areas:

1. *Population*
2. *Heritage Resources*
3. *Natural Hazards*
4. *Economic Development*
5. *Housing*
6. *Infrastructure and Public Facilities*
7. *Land Use*

Additionally, an essential element of the MIP is its directed growth plan which provides a management framework for future growth in a manner that is fiscally, environmentally, and culturally prudent. Among the directed growth management tools developed through the MIP process are maps delineating urban growth boundaries (UGB), small town boundaries (SRB) and rural growth boundaries (RGB). The respective boundaries identify areas appropriate for future growth and their corresponding intent with respect to development character.

The Westin Maui Resort & Spa is located within the UGB. In this regard, it is consistent with the directed growth strategy defined via growth maps adopted in the MIP.

In addition, the proposed master plan improvements at the Westin Maui Resort & Spa have been reviewed with respect to pertinent goals, objectives, policies and implementing actions of the MIP. A summary of these policy statements are provided below:

Economic Development

Goal:

4.2 *A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.*

Objective:

4.2.1 *Increase the economic contribution of the visitor industry to the island's environmental well-being for the island's residents' quality of life.*

Policies:

4.2.1.c *Focus economic growth in the visitor industry through enhanced visitor experiences and an emphasis on attracting higher-spending.*

4.2.1.d *Provide a rich visitor experience, while protecting the island's natural beauty, culture, lifestyles, and aloha spirit.*

4.2.1.f *Recognize the important economic contributions that the visitor industry makes and support a healthy and vibrant visitor industry.*

Land Use

Objective:

7.3.4 Strengthen planning and management for the visitor industry to protect resident quality of life and enhance the visitor experience.

Policy:

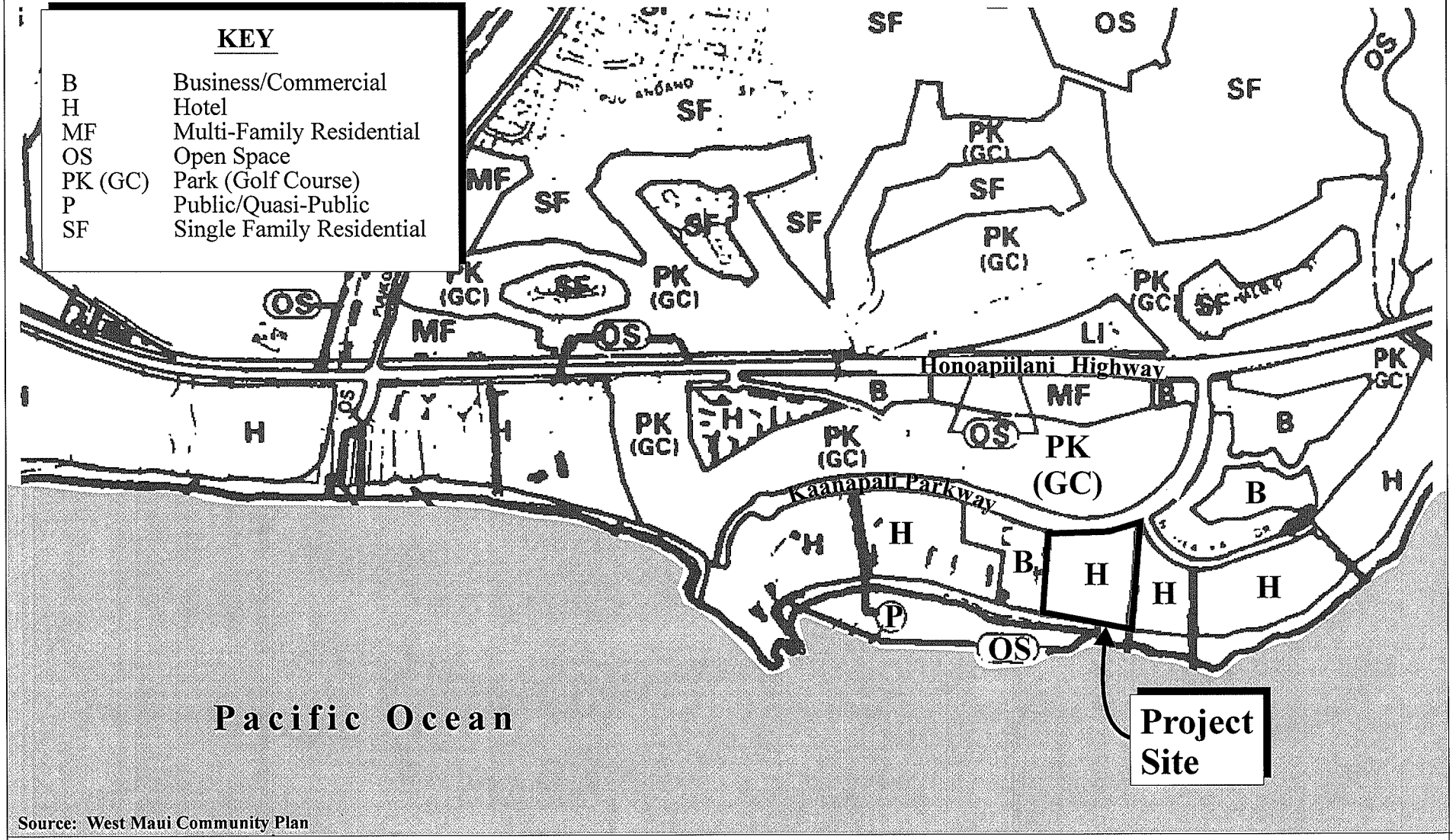
7.3.4.d *Limit large-scale resort development to the four existing resort destination areas of Wailea, Makena, Kapalua and Kaanapali. "Large Scale Resort" is defined as complexes that include multiple accommodation facilities, activity businesses, retail complexes, and other amenities.*

In view of the foregoing, the proposed master plan improvements at the Westin Maui Resort & Spa are consistent with the themes and principles of the Maui Island Plan.

E. WEST MAUI COMMUNITY PLAN

The project site is located in the West Maui Community Plan region, one (1) of the nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns, and characteristics of development in the region.

Land use guidelines are established by the West Maui Community Plan land use map. The land use map for the West Maui Community Plan designates the project area for "Hotel" and "Open Space" use. See **Figure 12**. It is noted that the open space portion is located in the area adjacent to the ocean.



Source: West Maui Community Plan

Figure 12 Proposed Master Plan Improvements for the Westin Maui Resort & Spa

West Maui Community Plan
Land Use Designation

NOT TO SCALE

Prepared for: Westin Maui LLC

MUNEKIYO & HIRAGA, INC.

The proposed action is in keeping with the following West Maui Community Plan goals, objectives, policies, and implementing actions:

LAND USE

Goal

An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the region's open space areas and natural environmental resources.

ENVIRONMENT

Goal

A clean and attractive physical, natural, and marine environment in which man-made developments on or alterations to the natural and marine environment are based on sound environmental and ecological practices, and important scenic and open space resources are preserved and protected for public use and enjoyment.

Objective and Policy

14. Protect the shoreline and beaches by preserving waterfront land as open space wherever possible. This protection shall be based on a study and analysis of the rate of shoreline retreat plus a coastal hazard buffer zone. Where new major waterfront structures or developments are to be approved, preservation should be assured for 50-100 years by employing a shoreline setback based on the rate established by the appropriate study.

ECONOMIC ACTIVITY

Goal

A diversified economy that provides a range of stable employment opportunities for residents, allows for desired commercial services for the community, and supports the existing visitor and agricultural industries, all in a manner that will enhance both the community's quality of life and the environment.

Objectives and Policies

1. *Promote a diversified economic base which offers long term employment to West Maui residents, and maintains overall stability in economic activity in the areas of:*

    a. *Visitor accommodations*
    b. *Visitor-related service/commercial services*

4. *Maintain a stable and viable visitor industry.*

    a. *Limit visitor facilities to the existing planned resorts of Kaanapali and Kapalua as designated on the land use map and coordinate future growth with development of adequate infrastructure capacity and housing for employees.*
    b. *Encourage the renovation and improvement of existing visitor facilities without a substantial increase in the room count. Promote activities and industries that compliment and support the use of existing visitor industry facilities, such as sporting events, eco-tourism and conferences.*

URBAN DESIGN

Goal

An attractive and functionally integrated urban environment that enhances neighborhood character, promotes quality design at the resort destinations of Kaanapali and Kapalua, defines a unified landscape planting and beautification theme along major public roads and highways, watercourses, and at major public facilities, and recognizes the historic importance and traditions of the region.

Objectives and Policies for the West Maui Region in General

2. *Maintain a high level of design quality for West Maui resort destination areas.*

F. COUNTY ZONING

The subject property is designated as "H-2, Hotel" by Maui County Zoning. The Westin Maui Resort & Spa is an existing hotel. Section 19.04.040 of the Maui County Code defines a hotel as "a transient vacation rental, other than a bed and breakfast home containing lodging or dwelling units." The proposed master plan improvements to the Westin Maui Resort & Spa are permitted by Maui County Zoning. Buildings in the "H-2, Hotel" district shall not exceed 12 stories.

G. COASTAL ZONE MANAGEMENT

The Hawaii Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaii's coastal zone. The Westin Maui Resort & Spa property abuts the shoreline and lies within the County of Maui's Special Management Area (SMA). As such, a SMA Use permit for coastal zone management is required for the project. Therefore, the proposed project has been assessed relative to the coastal zone management considerations, as set forth in Chapter 205A, HRS.

1. Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

a. Improve coordination and funding of coastal recreational planning and management; and

b. Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

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

ii. Requiring replacement of coastal resources having significant recreational value, including but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

iii. Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

iv. Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

v. Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational

value consistent with public safety standards and conservation of natural resources;

vi. *Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*

vii. *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*

viii. *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of Section 46-6.*

Response: The Westin Maui property abuts the shoreline. The proposed project involves improvements to the existing Westin Maui Resort & Spa, including but not limited to guestroom and public corridor renovations, restaurant improvements (deck and roof structures) to encompass the removal and replacement of approximately 999 sq. ft. of existing deck within the shoreline setback area with breakaway decking and demolition of the existing pool bathrooms and storage spaces, repair work at the existing water features and pools, repair and maintenance work at the back of house spaces, construction of a new 3-½ and 4-½ level parking structure with landscaping facility along Kaanapali Parkway, the conversion and expansion of the existing ballroom on the second level to a 12,000 sq. ft. ballroom and meeting rooms on the first level extended to 9,500 sq. ft. and interior pre-function areas on the first and second level of 3,700 sq. ft., 4,240 sq. ft. spa expansion, new one-story back of house structure and curb cuts to the bus turnaround area. The improvements will occur within the existing improved hotel buildings, existing parking area, or on lands previously improved with pools, water features, patios, outdoor restaurants, and other hotel related improvements. It is noted that there is an existing 150-foot shoreline setback area provided at the Westin Maui Resort & Spa. The proposed project includes the removal of a portion of existing decking and installation of breakaway deck and roof structures within the setback area to provide for additional seating area where the restroom and storage facility will be demolished, as well as to provide shade for the existing deck areas of the Tropica and Relish Restaurants and the removal of a man-made mound. It is noted that the roof structures will be open air structures which will not impede beach processes. The proposed project is not anticipated to affect existing coastal recreational resources. Access to the shoreline areas is provided by the existing

public beach boardwalk on the west boundary of the subject property and will not be affected by the proposed project.

2. **Historic Resources**

Objective:

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

Policies:

a. *Identify and analyze significant archeological resources;*

b. *Maximize information retention through preservation of remains and artifacts or salvage operations; and*

c. *Support state goals for protection, restoration, interpretation, and display of historic resources.*

Response: The project site is an existing improved resort/hotel property located in an area of existing resort development. The proposed action will be confined to the existing improved areas of the Westin Maui Resort & Spa and existing paved parking lot. As such, ground altering activity associated with the proposed project will be constrained to alteration of previously improved areas. An Archaeological Inventory Survey (AIS) was prepared for the proposed project. As previously noted, the AIS did not discover any *in situ* historic or cultural materials during the archaeological testing of the site. As recommended by the AIS and concurred by SHPD, an archaeological monitoring plan will be prepared and submitted to SHPD for review and approval. The monitoring plan will be adhered to during ground altering activities for the project. Therefore, adverse impacts to historic resources are not anticipated.

3. **Scenic and Open Space Resources**

Objective:

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

Policies:

a. *Identify valued scenic resources in the coastal zone management area;*

b. *Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*

c. *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*

d. *Encourage those developments which are not coastal dependent to locate in inland areas.*

Response: The majority of the proposed improvements will occur within the existing buildings and will not have an adverse impact upon scenic or open space resources. The new 3-½ level and 4-½ level parking garage will be constructed in the existing paved parking area, which lies mauka of the hotel buildings. The first level on the garage will be four (4) feet below grade. Additional landscaping around the garage and between the structure and Kaanapali Parkway and existing hibiscus shrubs along Kaanapali Parkway and monkey pod trees along the subject property's southern border will provide visual screens for the new parking structure and it will not affect views to or from the shoreline. The proposed back of house structure is on the northeast corner of the property along Kaanapali Parkway and is not adjacent to the shoreline. Adverse impacts to coastal scenic and open space resources are not anticipated as a result of the proposed project.

4. **Coastal Ecosystems**

Objective:

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

Policies:

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

b. *Improve the technical basis for natural resource management;*

c. *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*

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

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

Response: The proposed project is not expected to affect coastal ecosystems. Best Management Practices (BMPs) will be implemented during construction to ensure that runoff from construction areas does not discharge into marine waters. During construction, silt and dust screens will be erected around the perimeter of the project site and water wagons and/or water sprinklers will be utilized to further control dust.

5. Economic Uses

Objective:

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

Policies:

a. *Concentrate coastal dependent development in appropriate areas;*

b. *Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*

c. *Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*

   i. *Use of presently designated locations is not feasible;*

   ii. *Adverse environmental effects are minimized; and*

   iii. *The development is important to the State's economy.*

Response: In the short term, the proposed project will have a positive impact on the local economy through construction employment and the purchasing of construction materials and supplies. The project is in accordance with the West

Maui Community Plan and will enhance the resort's ability to sustain its economic performance without the need for more land beyond the property boundaries.

The Applicant is reviewing construction schedule scenarios for the proposed project. The selection of the construction schedule involves balancing diverse and sometimes competing considerations such as hotel operations, staffing, mobilization of construction resources and the safety and comfort of hotel guests. The feasibility of completing construction without closing the hotel, and minimizing adverse economic impacts from project construction is being assessed by the Applicant. The Applicant will coordinate with hotel employees, the ILWU, vendors and other parties who may be adversely impacted by the construction duration of the proposed project.

6. Coastal Hazards

Objective:

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

Policies:

a. *Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*

b. *Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;*

c. *Ensure that developments comply with requirements of the Federal Flood Insurance Program; and*

d. *Prevent coastal flooding from inland projects.*

Response: The majority of the subject property falls within Zone X, areas of minimal flooding. A small section of the western portion of the subject property lies in Zone VE. Refer to **Figure 10**. However, the improvements will take place solely within the areas designated as Zone X. The subject property is also located within the tsunami evacuation zone. However, the proposed action will not increase exposure to coastal hazards.

7. Managing Development

Objective:

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

Policies:

a. *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*

b. *Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and*

c. *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

Response: In accordance with the Rules of Practice and Procedures for the Maui Planning Commission and the Special Management Area Rules for the Maui Planning Commission, a SMA Use Permit application, Shoreline Setback Variance (SSV), and Environmental Assessment will be filed with the County Planning Department and the SMA and SSV applications will undergo public hearing and decision by the Maui Planning Commission. Opportunity for public review and consideration of the proposed action is provided through the EA and SMA/SSV permitting processes. In addition, all aspects of the development will be conducted in accordance with applicable Federal, State, and County standards.

8. Public Participation

Objective:

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

Policies:

a. *Promote public involvement in coastal zone management processes;*

b. *Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and*

c. *Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

Response: Opportunities for public awareness and participation in the permitting process for the project are facilitated through the notification, review and comment processes of the EA requirements of Chapter 343, HRS, as well as the SMA Use Permit and SSV processes. It is noted that the Westin Maui met with the adjacent Kaanapali Alii condominium (Alii) association board in April, July and October 2013 to provide an overview on the project improvements and receive comments on the proposed project. Comments from the Alii Association have been incorporated in the revised project plans to include landscaping for visual screening and light and noise mitigation, including landscape screening around the parking garage and trellis and lighting on the top level. Ongoing communication throughout the permitting process is anticipated between the Applicant and the Kaanapali Alii. Additionally, the Westin Maui also presented conceptual project plans to the Kaanapali Operations Association (KOA) Design Review Committee in May 2013 and December 2013. See correspondence with KOA, **Appendix "F"**. Comments from the KOA committee were incorporated into the preliminary project plans. The proposed project is not contrary to the objectives of public awareness, education, and participation.

9. **Beach Protection**

Objective:

Protect beaches for public use and recreation.

Policies:

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

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

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

Response: The proposed action will occur within the existing developed areas of the Westin Maui Resort & Spa property. Further, it is noted that the proposed deck within the shoreline setback area will be adjacent to existing improved areas

and a portion of existing hard decking will be removed and replaced with breakaway deck and will occur in areas which were previously permitted and improved within the setback area. Refer to **Figure 5**. Additionally, the proposed shade coverings will be open air structures which will not impede beach processes in the area. Also, it is noted that the proposed improvements will be constructed at a distance of approximately 69 feet from the certified shoreline, at its closest point, within the 150-foot shoreline setback area.

Since 2006, Kaanapali Operations Association, Inc. (KOA) has been pursuing a plan to address beach erosion events at Kaanapali Beach and established a partnership with the government. As government agencies have indicated preference for beach restoration and enhancement to address beach erosion, KOA has engaged Sea Engineering, Inc. and identified a suitable sand source for a beach restoration and enhancement project involving 75,000 cubic yards of sand. The proposed project will widen the beach from Hanakaoo Beach Park to Hanakaoo Point, and enhance the beach from Hanakaoo Point to Black Rock. In 2014, the State Legislature approved funding for the beach nourishment project.

In 2014 KOA signed a Memorandum of Understanding (MOA) with the State of Hawaii, Department of Land and Natural Resources for the joint funding of a program that will involve planning, permitting, and design to implement a beach restoration and enhancement project. KOA is assessing its resort hotel and condominium members, including the Westin Maui LLC, towards its share of the joint funding, up to $3.8 million as a contribution towards the project.

10. Marine Resources

Objective:

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

Policies:

a. *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*

b. *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*

c. *Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*

d. *Promote research, study, and understanding of ocean processes, marine life,/and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*

e. *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

Response: The proposed improvements are not anticipated to adversely impact ocean resources. Best Management Practices (BMPs) will be incorporated during construction to support the policies of effective management to protect marine and coastal resources. Further, as previously noted, there are demolition and construction activities proposed within the 150-foot shoreline setback area which would include the demolition of an existing restroom/storage building and one (1) retail kiosk building and the removal of a man-made mound that screens the existing restroom/storage building. The proposed construction activities include installation of new breakaway deck material (approximately 3,015 sq. ft.) to replace the demolished restroom and storage facility (adjacent to the Tropica and Relish Restaurants) and additional areas within the shoreline setback area, a shade covering (approximately 1,514 sq. ft., near Relish Restaurant) for said area, and removal of approximately 999 sq. ft. of existing hard deck to be replaced with breakaway decking. Additionally, a shade covering is proposed over an existing restaurant deck area and will be an open air structure (approximately 2,570 sq. ft. near Tropica Restaurant) which will not impede beach processes in the area. Lastly, it is noted that the proposed improvements will be constructed at a distance of approximately 69 feet from the Certified Shoreline, at its closest point, within the 150-foot shoreline setback area.

As previously noted, in 2014, KOA signed a MOA with the Department of Land and Natural Resources for joint funding to implement a beach restoration and enhancement project at Kaanapali Beach. The MOA is before the Board of Land and Natural Resources for approval.

In addition to the foregoing objectives and policies, HRS Section 205A-30.5 Prohibitions, provides specifications for the limitation of lighting in coastal shoreline areas in relation to the granting of SMA permits:

No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:

(1) Directly illuminates the shoreline and ocean waters; or

(2) Is directed to travel across property boundaries toward the shoreline and ocean waters.

(b) Subsection (a) shall not apply to special management area use permits for structures with:

(2) Artificial lighting provided by a government agency or its authorized users for government operations, security, public safety, or navigational needs; provided that a government agency or its authorized users shall make reasonable efforts to properly position or shield lights to minimize adverse impacts.

Response: All outdoor lighting for the proposed project will be shielded and down cast. Exterior lighting will be limited to the improvements at the restaurant, pool and new parking structure. However, lighting at the new restaurant will be shielded. The new parking structure is located mauka of the resort building and will not be visible from the shoreline. As such, the proposed project will not result in light traveling across property boundaries toward the shoreline. All outdoor lighting will comply with the County of Maui's outdoor lighting ordinance.

H. MAUI PLANNING COMMISSION SPECIAL MANAGEMENT AREA RULES AND REGULATIONS

The Rules and Regulations of the Maui Planning Commission, Chapter 202 were established in order to implement Hawaii Revised Statues, Chapter 205A relating to Coastal Zone Management and Special Management Areas. In addition to establishing procedures for processing of Special Management Area applications and procurement of related permits, the rules assist the Commission in giving consideration to state policy regarding coastal zones.

This section addresses the project's relationship to applicable coastal zone management considerations as set forth in the Maui Planning Commission Rules and Regulations, Chapter 202, "Special Management Area Permit Procedures," which are provided for considering the significance of potential environmental and ecological effects of a proposed action. The criteria have been reviewed and analyzed with respect to the proposed master plan improvements for the Westin Maui Resort & Spa as follows.

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

The improvements will occur within the existing hotel buildings or on lands previously improved with pools, water features, patios, outdoor restaurant facilities and other related hotel improvements. The outdoor improvements will be limited to previously improved lands. As previously noted, although no historic materials were discovered during the archaeological testing, an archaeological monitoring plan will be prepared and submitted to the SHPD for review and approval. The approved plan will be adhered to during ground altering work for the project. Therefore, ground altering work is not anticipated to result in any adverse impacts to any natural or cultural resources.

2. **Significantly curtails the range of beneficial uses of the environment.**

The proposed project will not curtail the range of beneficial uses of the environment. Applicable dust control, noise control, and drainage control measures will be implemented during the construction period to minimize any construction-related impacts. The proposed action will improve portions of the subject property that are already developed.

3. **Conflicts with the county's or the state's long-term environmental policies or goals.**

The proposed project does not conflict with the State's Environmental Policy and Guidelines such as those set forth by Chapter 344, HRS. The proposed action is consistent with the underlying land use designations of the property.

4. **Substantially affects the economic or social welfare and activities of the community, county, or state.**

On a short-term basis, the proposed project will provide construction and construction-related employment opportunities, thereby having a beneficial impact on the local economy during the construction period. Once completed, the improved resort will better enable the Westin Maui Resort & Spa to attract and serve visitors and guests. In this regard, the proposed project will benefit the local economy.

5. **Involves substantial secondary impacts, such as population changes and increased effects on public facilities, streets, drainage, sewage, and water systems, and pedestrian walkways.**

The proposed project is limited to the existing resort property. Inasmuch as the resort primarily serves hotel guests and visitors, the proposed project is not a population generator, nor will it significantly increase the demand for public services. Associated drainage and utility improvements will be made as necessary to ensure that adjacent and downstream locations are not adversely affected. In effect, the proposed project is not anticipated to induce any adverse secondary impacts.

6. **In itself has no significant adverse impacts but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The proposed project represents improvements to previously developed areas of the resort property. Therefore, the proposed action is not anticipated to contribute to any significant adverse, long-term effects on the environment, nor will it involve a commitment for larger actions.

7. **Substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat.**

The project site has been previously developed and as such, contains no rare, threatened, or endangered species or critical habitat for such species.

8. **Is contrary to the state plan, county's general plan, appropriate community plans, zoning and subdivision ordinances.**

The proposed project is consistent with the underlying State Land Use designation, County Zoning, and West Maui Community Plan land use designation for the project site.

9. **Detrimentally affects air or water quality or ambient noise levels.**

Construction activities will generate short-term air quality and noise impacts. Dust control measures such as dust screens will be implemented to minimize wind-blown particulates. Noise impacts generated by construction equipment will be minimized with the use of equipment mufflers or other noise-attenuating equipment and proper vehicle maintenance. Further, applicable provisions of the Hawaii Administrative Rules (HAR) of the State Department of Health, Title 11, Chapter 46, Community Noise Control, will be adhered to. These rules require a noise permit if the noise levels generated by construction activities are expected to exceed

the allowable levels set forth by Chapter 46. After the conclusion of construction, the improvements are not anticipated to produce any air quality or noise impacts.

With respect to water quality, the project is not expected to affect coastal ecosystems, as discussed previously. Best Management Practices (BMPs) will be implemented during construction to ensure that runoff from the construction sites will not discharge into the near shore marine environment. Therefore, the proposed action will not result in adverse impacts to the ocean.

10. **Affects an environmentally sensitive area, such as flood plains, shoreline, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh waters, or coastal waters.**

The proposed improvements are located entirely within Flood Zone X. This designation denotes an area of low flood risk and minimal flooding with no development restrictions. The subject property is located within the tsunami evacuation zone. The Westin Maui Resort & Spa has established emergency and civil defense procedures to provide the necessary guidance to organize and direct operations at the resort in the event of an emergency or civil defense action, such as a tsunami.

11. **Substantially alters natural land forms and existing public views to and along the shoreline.**

The interior improvements to the spa, public corridors, and ballrooms will not alter any natural land form, nor will it impact the existing public views to and along the shoreline. The demolition of structures and removal and replacement of a portion of existing deck, roof and new deck installations will occur on previously developed portions of the property and will, therefore, not impact the existing views to and along the shoreline. The new one-story back of house structure and 3-½ level and 4-½ level parking garage with landscaping facility is located mauka of the resort building and will not be visible from the shoreline. The first level of the garage will be four (4) feet below grade. In addition, the view of the parking structure will be buffered by existing and new landscape areas around the garage along Kaanapali Parkway and the south boundary of the structure.

12. **Is contrary to the objectives and policies of chapter 205A, HRS.**

A review of the objectives and policies of Chapter 205A, HRS is provided in Section F, which precedes this section and addresses the project's relationship to the Hawaii Coastal Zone Management considerations. Based on this analysis, the proposed project will appropriately and adequately mitigate impacts to SMA-

relevant areas of concern. Accordingly, there are no significant environmental or ecological impacts anticipated to occur as a result of the proposed action.

I. SHORELINE ZONE CONSIDERATIONS

As previously noted, the applicant has filed a Shoreline Setback Variance (SSV) request due to the nature of the proposed shoreline demolition activities and proposed replacement activities within the 150-foot shoreline setback area. Refer to Chapter I, Proposed Action. Work within the shoreline setback area is governed by Chapter 203, Shoreline Rules for the Maui Planning Commission.

The shoreline rules regulate the use and activities of land within the shoreline environment in order to protect the health, safety, and welfare of the public by providing minimum protection from known coastal natural hazards; and to ensure that the public use and enjoyment of the shoreline resources are preserved and protected for future generations in accordance with the Hawaii Coastal Zone Management Law, HRS Chapter 205A.

1. Shoreline Setback Determination

According to the Maui Shoreline Atlas, prepared by the University of Hawaii Coastal Geology Group, the project corresponds to the area between transects 84 and 94 of Kaanapali. This study shows that the beach at the project site has been relatively stable, experiencing no net erosion (ranging from -0.1 to -0.2 foot, i.e. accretion) at transects 89 to 92; and minimal erosion (ranging from 0.7 to 0.1 foot) transects 84 to 88, 93, and 94.

Since the average lot depth of the subject property is over 600 feet, the shoreline setback for the Westin Maui Resort & Spa is determined to be 150 feet from the shoreline.

2. Shoreline Processes

As previously noted, the shoreline erosion rate for the beach fronting the project site has been relatively stable, experiencing minimal net erosion or accretion at all transect locations. The beach is dynamic and can experience swings in beach positions.

The study area of the Kaanapali Resort (from Hanakoo Beach Park in the south to Kekaa Point in the north) has experienced moderate erosion since 1912, with an average Annual Erosion Hazard Rate (AEHR) of -0.6 foot/year. The coastline is comprised of seasonally dynamic large continuous white sand beach exposed both

to Kona storm activity and seasonal swell events. The northern portion (transects 74-124) has an annual erosion rate reflective of the entire area (-0.6 foot/year). (UH Coastal Geology Group, 2010).

3. Proposed Improvements

Work within the 150-foot shoreline setback area includes the following:

Demolition activities:

- Demolition of an existing restroom/mechanical room/storage building. The building is approximately 1,750 sq. ft., of which approximately 1,020 sq. ft. is within the Shoreline Setback Area.

- Demolition of a free standing kiosk building, approximately 551 sq. ft. in size.

- Removal of man-made earth mound on the northwest portion of the property.

- Removal of approximately 999 sq. ft. of existing deck.

Replacement Activities and New Structures:

- Installation of breakaway deck material and landscaping to replace the area from the demolished restroom/mechanical room/storage building and free standing kiosk and removed existing deck. Area of coverage is approximately 5,122 sq. ft. Additionally, a new roof covering approximately 4,120 sq. ft. in size will be installed adjacent to the Relish Restaurant. Approximately 1,514 sq. ft. of the roof is within the Shoreline Setback Area. Said roof covering will be attached to the existing hotel building. Refer to Section 6, Preliminary Conceptual Development Plans, of this application document.

- Installation of a free standing roof covering approximately 2,570 sq. ft. in size over existing paved area within the Shoreline Setback Area at the Tropica Restaurant. Roof covering will include folding glass doors on three (3) sides of the structure to provide for additional protection from wind, when needed. Roof covering will provide shading for a lanai area currently used for restaurant seating.

- Installation of 3,015 sq. ft. of breakaway decking adjacent to the Tropica and Relish Restaurants.

- Installation of approximately 999 sq. ft. of breakaway decking to replace existing hard deck within the Shoreline Setback Area.

- Use of existing thatched umbrellas

The aforementioned improvements within the shoreline area, for the most part involve demolition, deck removal, and exterior improvements to existing structures. These improvements could fall under the following sections which would require review and approval of the Planning Director:

* * *

(7) Qualified demolition

* * *

(9) A structure or activity that has been determined by the director to be a minor structure or minor activity within the shoreline setback area which does not adversely affect beach processes, does not artificially fix the shoreline, and does not interfere with public access or public views to and along the shoreline and which meets the purpose of this chapter, HRS chapter 205A, as amended, and chapter 19.62, Maui County Code, relating to coastal high hazard districts.

4. <u>Criteria for Approval of Variance</u>

Criteria for approval of a variance can be found in Section 12-203-15 of the shoreline rules. A shoreline variance may be granted for a structure or activity otherwise prohibited by this chapter, if the Commission finds, based on the record presented, that the proposed structure or activity is necessary for or ancillary to private facilities or improvements which will not adversely affect beach processes or artificially fix the shoreline; provided that the applicant can show hardship. A shoreline setback variance *"...may be granted a variance upon grounds of hardship if: (1) The applicant would be deprived of reasonable use of the land if required to fully comply with the shoreline setback rules; (2) The applicant's proposal is due to unique circumstances and does not draw into question the reasonableness of the shoreline setback rules; and (3) The proposal is the practicable alternative which best conforms to the purpose of the shoreline setback rules."*

Prior to granting a hardship variance, the Commission must determine that the applicant's proposal is a reasonable use of the land. Because of the dynamic nature of the shoreline environment, inappropriate development may pose a risk to individuals or the public health and safety. For this reason, the Commission's

determination of reasonableness of the use of land should properly consider factors, such as shoreline conditions, erosion, surf and flood conditions and the geography of the lot.

5. Variance Justification

a. Demolition Activities

As previously noted, demolition activities within the shoreline setback area is outlined as a permitted action within the shoreline setback area. The demolition of the two (2) structures, removal of a portion of existing hard deck, and removal of the earth mound within the shoreline setback area of the Westin Maui Resort & Spa meets the purpose of the shoreline rules to: (1) limit man-made features in the shoreline area to features compatible with the shoreline area; and (2) protect, preserve and, where desirable, restore the quality of scenic and open space resources. It is noted that there is an existing improved beach walk fronting the makai portion of the Westin Maui Resort & Spa site which will remain open during construction to allow the public continued access along the shoreline.

During demolition and construction work, Best Management Practices (BMPs) will be employed to mitigate the effects of construction-related activities within the shoreline setback area. Among the BMPs which may be employed are the installation and maintenance of dust/silt fences during construction, sediment traps, stabilized construction entrances and other measures to minimize offsite tracking of sediment by construction vehicles and equipment.

b. Replacement Activity and New Construction

The proposed installation of breakaway deck material to replace the existing demolished buildings would be located approximately 69 feet away from the certified shoreline. Further, the decking material would be installed at grades similar to the ground floor of existing improved areas near the Relish Restaurant that are adjacent to the improved areas and, as such, is not anticipated to artificially fix the shoreline. A portion of the existing hard deck within the Shoreline Setback Area is proposed for removal and replacement with breakaway decking and is compatible with the shoreline area. Additionally, the proposed roof covering (4,120 sq. ft.) over this area (adjacent to the Relish Restaurant) would be attached to the existing

building itself and thus would not affect beach processes. The Relish Restaurant roof is approximately 4,120 sq. ft. with a 1,514 sq. ft. portion within the Shoreline Setback Area. Refer to Section 6, Preliminary Conceptual Plans, of this EA. As previously noted, the shoreline erosion rates for the beach fronting the Westin Maui Resort & Spa has been relatively stable, with annual erosion rates at 0.7 foot, or less, per year.

The proposed roof structure over the existing deck area at the Tropica Restaurant is approximately 2,570 sq. ft. in size and is located within the shoreline setback area. As previously noted, this existing deck area is used for restaurant seating at the Westin Maui Resort & Spa. However, during inclement weather, the seating area cannot be utilized because it is not protected from the elements. The proposed roof structure at the Tropica Restaurant is planned as an open air structure which would have folding doors to provide additional protection from the weather. In the event of high coastal wave action, the Westin Maui Resort & Spa would ensure that the folding doors for the structure would remain open and thus, would not impede the coastal processes. It is noted that at its closest point, the proposed roof structure would be approximately 69 feet away from the Certified Shoreline.

Restaurant improvements also include 3,015 sq. ft. of proposed breakaway deck area adjacent to the Tropica and Relish Restaurants. A portion of the decking area would replace the two (2) structures proposed for demolition in the Shoreline Setback Area as well as existing water features which will also be removed, and approximately 999 sq. ft. of existing hard deck would be removed and replaced with decking that is compatible with beach processes.

For the replacement and new construction activities proposed, the following justification is provided:

(1) The applicant would be deprived of reasonable use of the land if required to fully comply with the shoreline setback rules.

Response: The proposed area of demolition and mound removal activities is adjacent to existing improved areas at the Westin Maui Resort & Spa. Following demolition of the structures, the Westin would like to continue to utilize those areas for the existing food and beverage operations occurring at the site. The loss of the food

service area would mean that the Westin Maui Resort & Spa would have less area to service their guests which would cause a hardship.

Further, without the installation of the roof structure at the Tropica Restaurant and new roof over these existing and proposed deck areas adjacent to the Relish and Tropica Restaurants, the Westin Maui Resort & Spa may also be limited in their food service areas during inclement weather which would also cause a hardship for the hotel and guests.

These improvements allow the Westin Maui Resort & Spa to be competitive and meet customer demands and expectations and enhance the guest experience.

The removal of a portion of the existing hard deck and replacement with breakaway decking is compatible with the shoreline area.

(2) **The applicant's proposal is due to unique circumstances and does not draw into question on the reasonableness of the shoreline setback rules; and**

Response: The Westin Maui Resort & Spa received SMA approval for the construction of the north tower building, as well as other improvements in 1985. The Westin Maui Resort & Spa has not undergone a major renovation since it opened in 1988. A master plan review process was undertaken to determine the scope of the improvements for the resort to provide for upgraded amenities and facilities to keep the Westin Maui Resort & Spa competitive in the visitor accommodations market. Further, the existing site is nearly built out, further limiting the extent of the improvements that could be provided. The existing hotel layout and location of the existing restaurant/spa limits the areas for improvements. The proposed request for improvements and activities within the shoreline setback area does not draw into question the reasonableness of the shoreline rules.

(3) **The proposal is the practicable alternative which best conforms to the purpose of the shoreline setback rules.**

Response: The proposed deck removal, replacement, and new construction activities represent a practicable alternative which best

conforms with the purpose of the shoreline setback rules. The proposed activities will allow the Westin Maui Resort & Spa to better utilize their existing facilities to provide a high quality experience for their visitors and guests and will thereby support the visitor industry of Maui.

On February 15, 2000 the Planning Department granted a Shoreline Setback approval and Special Management Area Minor Permit approval for the Westin Maui's deck improvements at the Sound of the Falls (now Tropica) Restaurant located within the 150-foot shoreline setback area and mauka of the existing beach walkway. (SM2 2000/0010)(SSA 2000/0002). See **Appendix "G"**.

Additionally, in 2009, the Westin Maui Resort & Spa received an EA Exemption, SMA Exemption approval Shoreline Setback approval (EAE 2009/0009, SM5 2009/0081 and SSA 2008/0041) from the Department of Planning for the replacement of the decking around the pool and other adjacent areas, including the now Tropica Restaurant seating area. See **Appendix "H"**.

The proposed improvements includes the removal of a portion of existing deck, demolition of existing water feature, restroom and storage building within the shoreline setback area. As previously noted, approximately 2,300 sq. ft. of existing structures will be removed (approximately 1,571 sq. ft. is located in the shoreline setback area). There will be additional removal of hardened area (deck area) in the shoreline setback area as approximately 999 sq. ft. of existing hard deck will be removed and replaced with breakaway decking. See **Table 1**. The installation of 3,015 sq. ft. of new breakaway deck areas and 999 sq. ft. of replacement decking, 2,570 sq. ft. roof structure at Tropica Restaurant, and approximately 4,120 sq. ft. (of which 1,514 sq. ft. would be located in the shoreline setback area) roof structure adjacent to the Relish Restaurant will replace portions of the demolished elements. Refer to **Figure 5**, **Figure 6**, and **Figure 7**. The improvements are a reasonable use of land and does not adversely affect beach processes nor artificially fix the shoreline fronting the property and as previously noted, the shoreline erosion rate for the beach fronting the site has been relatively stable.

Table 1. Proposed Activities in Shoreline Setback Area

Improvement	New In Shoreline Setback Area	Removed From Shoreline Setback Area	Gain/Loss
Tropica Restaurant Roof Structure	2,570 sq. ft.		2,570 sq. ft.
Demolition of Kiosk		551 sq. ft.	[551] sq. ft.
Demolition of Storage Building		1,020 sq. ft.	[1,020] sq. ft.
Removal of Existing Hard Deck and replacement with breakaway deck	999 sq. ft.	999 sq. ft.	[999] sq. ft.
Total Net Gain/[Loss] of hardscape in Shoreline Setback Area			**0**

Note:
1. The installation of 3,015 sq. ft. of new breakaway decking conforms with the purpose of the shoreline setback rules.
2. 1,514 sq. ft. of shade covering extends the existing roof of the Relish Restaurant.

Refer to **Figure 5**.

As previously noted, since 2006, KOA has been pursuing a plan to address beach erosion events at Kaanapali Beach and established a partnership with the Department of Land and Natural Resources. As government agencies have indicated preference for beach restoration and enhancement to address beach erosion, KOA has engaged Sea Engineering, Inc. and identified a suitable sand source for a beach restoration and enhancement project involving 75,000 cubic yards of sand. The project proposes to widen the beach from Hanakaoo Beach Park to Hanakaoo Point, and enhance the beach from Hanakaoo Point to Black Rock.

The applicant is participating in funding the $3.8 million beach restoration project as part of the public-private partnership.

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed action will result in unavoidable construction-related impacts which include noise-generating activities during construction. In addition, dust generated during construction and particulates from exhaust emissions of construction equipment and vehicles may contribute to short-term air quality impacts. However, all construction-related impacts will be short-term and mitigated through the implementation of appropriate Best Management Practices (BMPs). Therefore, no significant, long-term, adverse impacts are anticipated as a result of the proposed action.

V. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

V. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed master plan improvements for the Westin Maui Resort & Spa will involve a commitment of land, fuel, labor, material, and fiscal resources. However, this commitment of resources is consistent with land use policies and plans for hotel uses. The West Maui Community Plan encourages the renovation and improvement of existing visitor facilities. The proposed action is in accordance with that objective. There are no other significant irreversible and irretrievable commitments of resources associated with the proposed action.

Impacts related to the uses of these resources are not considered significant when weighed against the expected positive socio-economic benefits derived from the project. The commitment of resources required for the development of the project include building materials and labor, both of which are non-renewable and irretrievable. In addition, the proposed project is not anticipated to require an expanded commitment of government services or facilities. In general, the proposed action is not anticipated to place significant additional requirements upon public services and infrastructure.

VI. SIGNIFICANCE CRITERIA ASSESSMENT

VI. SIGNIFICANCE CRITERIA ASSESSMENT

The proposed Project includes the use of shoreline area. As such, an Environmental Assessment (EA) has been prepared pursuant to Chapter 343, HRS and Chapter 200 of Title 11, Hawaii Administrative Rules (HAR) of the State Department of Health (DOH), Environmental Impact Statement Rules.

The "Significance Criteria", Section 12 of the HAR, Title 11, Chapter 200, Environmental Impact Statement Rules, were reviewed and analyzed to determine whether the proposed Project will have significant impacts to the environment. The following analysis is provided.

1. **The proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources.**

   An archaeological inventory survey (AIS) was completed for the proposed project. Refer to **Appendix "B"**. During the archaeological testing for the site, no historic or cultural materials were found. However, in light of the discovery of human burials in the surrounding areas in a previously disturbed context, an archaeological monitoring plan was recommended and SHPD concurred with that assessment. The Applicant will have an archaeological monitoring plan prepared and submitted to SHPD for review and approval. Any ground altering work for the proposed project will adhere to the approved monitoring plan.

   The project area is the existing Westin Maui Resort & Spa. The project area has been previously developed. Therefore, loss or destruction of any natural or cultural resources are not anticipated as a result of this project.

2. **The proposed action would not curtail the range of beneficial use of the environment.**

   There are no adverse impacts to climate, topography, or soils anticipated as a result of the proposed project. There are also no known rare, threatened, or endangered species of flora, fauna, or critical habitats for such species within the project area.

   The project area is located outside lands designated for conservation purposes and within the State's "Urban" district, Maui County's "H-2, Hotel" district, and West Maui Community Plan's "Hotel" and "Open Space" district. This project is in accordance with these land use designations. The proposed project is not anticipated to curtail the beneficial uses of the environment.

3. **The proposed action does not conflict with the state's long-term, environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.**

The State's Environmental Policy and Guidelines are set forth in Chapter 344, HRS. The proposed action is consistent with the underlying land use designations of the subject property. Best Management Practices (BMPs) will be implemented during project construction. Drainage systems included as part of the project are designed to protect downstream properties and coastal resources from stormwater runoff.

Additionally, as previously noted, the Applicant is part of a public-private partnership (through KOA) to restore and nourish Kaanapali Beach.

The proposed action is not contrary to the policies and guidelines set forth in Chapter 344, HRS.

4. **The proposed action does not substantially affect the economic welfare, social welfare, and cultural practices of the community or State.**

As previously noted, the AIS did not uncover any historic or cultural materials during the archaeological testing of the site. As recommended by the AIS and concurred by SHPD, an archaeological monitoring plan will be prepared and submitted to SHPD for review and approval. Ground altering work for the proposed project will follow the approved monitoring plan.

A Cultural Impact Assessment (CIA) was carried out for the proposed project. No cultural practices were identified which occur in or around the project area. The proposed project is not anticipated to adversely impact current cultural practices of the community.

On a short-term basis, the proposed project will provide construction and construction-related employment opportunities, thereby having a beneficial impact on the local economy during the construction period. Once completed, the improved resort will better enable the Westin Maui Resort & Spa to attract and serve visitors and guests. In this regard, the proposed project will benefit the local economy.

5. **The proposed action does not substantially affect public health.**

No adverse impact to public health or welfare is anticipated as a result of the proposed project. Appropriate mitigation measures will be implemented to address anticipated temporary noise and air quality impacts in the area, resulting from project construction.

6. **The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities.**

A secondary impact is generally defined as an impact which is caused by a specific action and which takes place later in time or further removed in distance but is still reasonably foreseeable. The proposed project is limited to the existing resort property. Inasmuch as the resort primarily serves hotel guests and visitors, the proposed project is not a population generator, nor will it significantly increase the demand for public services. Associated drainage and utility improvements will be made as necessary to ensure that adjacent and downstream locations are not adversely affected. In effect, the proposed project is not anticipated to induce any adverse secondary impacts.

7. **The proposed action does not involve a substantial degradation of environmental quality.**

During the construction phase, there will be short-term air quality and noise impacts. Dust control measures such as dust screens will be implemented to minimize wind-blown particulates. Noise impacts generated by construction equipment will be minimized with the use of equipment mufflers or other noise-attenuating equipment and proper vehicle maintenance. In the long term, there will be no significant adverse impacts to air quality and ambient noise levels. The proposed action will not significantly alter the open space and scenic character of the region.

With respect to water quality, the project is not expected to affect coastal ecosystems. BMPs will be implemented during construction to ensure that runoff from the construction sites do not discharge into the near shore marine environment.

The proposed action is not anticipated to involve a substantial degradation of environmental quality.

8. **The proposed action is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The proposed action represents improvements to previously developed areas of the Westin Maui Resort & Spa property. Therefore, the proposed action is not anticipated to contribute to any significant adverse, long-term effects on the environment, nor will it involve a commitment for larger actions.

9. **The proposed action does not substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat.**

The project site contains no rare, threatened, or endangered species or critical habitat for such species.

10. **The proposed action does not detrimentally affect air or water quality or ambient noise levels.**

Construction activities will have an impact on air and noise quality; these impacts will be minimal and temporary. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts will be mitigated by limiting construction activities to daylight work hours. Implementation of drainage improvements designed in accordance with the Drainage Standards of the County of Maui to address storm water runoff from the project area will include permanent BMPs to protect water quality and coastal resources in the area. As previously noted, there are two (2) existing underground diesel storage tanks at the Westin Maui Resort & Spa. No improvements to the tanks are proposed as part of this project. During project construction, protocols will be implemented to ensure that the underground storage tanks are protected.

In the long term, with appropriate mitigative measures in place, the proposed action is not anticipated to have a significant impact on air and water quality or ambient noise levels.

11. **The proposed action does not affect and is not likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geological hazardous land, estuary, fresh water, or coastal waters.**

The Westin Maui property abuts the shoreline and is located within the tsunami evacuation zone. A small portion of the property also lies within a flood plain.

While a small portion of the subject property lies within Flood Zone VE, the proposed improvements are located entirely within Flood Zone X. Flood Zone VE corresponds to areas within the 100-year coastal floodplain that have additional hazards associated with storm waves. Flood Zone X corresponds to areas that are outside the 500-year coastal floodplain and thus have minimal flooding.

The Westin Maui has established emergency and civil defense procedures to provide the necessary guidance to organize and direct operations at the resort in the event of an emergency civil defense action, such as a tsunami.

During construction, BMPs will be implemented for erosion and sedimentation control to mitigate any potential impacts to coastal and marine environments. The proposed project will also provide the appropriate drainage systems and permanent BMPs to protect coastal waters and nearby properties.

In view of the foregoing, the proposed action is not anticipated to affect any environmentally sensitive areas.

12. **The proposed Project does not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.**

The interior improvements to the spa, public corridors, and ballrooms will not substantially affect scenic viewplanes. The deck installation, roof structures at Tropica and Relish Restaurants, and ballroom/meeting room expansion work will occur on previously developed portions of the property. The improvements to the spa and public corridors will occur within the existing resort buildings and will, therefore, not impact the existing views to and along the shoreline. The new one-story back of house structure and 3-½ level and 4-½ level parking garage with landscaping facility will be within the height limits set forth by County Zoning. The back of house facility and garage will be located mauka of the resort building and will not be visible from the shoreline. In addition, the view of the parking structure will be buffered by existing and new landscaped areas around the garage, along Kaanapali Parkway and the south boundary of the structure.

13. **The proposed action does not require substantial energy consumption.**

The proposed action will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction. Lighting in the new parking structure and equipment for the restaurant expansion will contribute to an increased power demand from this project. However, this increase will be minimal and is not expected to result in substantial consumption of energy resources.

The Westin Maui Resort & Spa has implemented sustainability programs to conserve resources such as energy. The conservation measures include CLF bulbs in guestrooms, an energy policy program to turn off lights in unoccupied rooms, public area, and back of house lighting (LED and fluorescent), new air handlers, new transformer, occupancy sensors for mezzanine level meeting rooms, and outdoor lighting replacement (LED lighting). Refer to **Appendix "E"**.

Based on the foregoing findings, it is anticipated that the proposed action will result in a Finding of No Significant Impact (FONSI) determination.

VII. ALTERNATIVES TO THE PROPOSED ACTION

VII. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The proposed Westin Maui Resort & Spa master plan improvements represent the preferred alternative. With the proposed improvements, the Westin Maui will provide a facelift for the existing hotel accommodation and amenities, which has not undergone a major renovation since it opened in 1988. Further, the proposed improvements will provide the Westin Maui Resort & Spa with the opportunity to upgrade its facilities to meet the needs and expectations of its clients and remain competitive in the visitor accommodations market. This alternative presents a viable and effective opportunity for the Applicant to reinvest in an existing hotel property.

B. NO ACTION

The no action alternative would retain the property in its current state. This alternative is not considered viable due to the need to provide for parking stalls relative to County of Maui requirements on site and that Applicant's current lease for off-site parking will expire in the near future, as well as the need to upgrade the hotel amenities to remain competitive in the visitor accommodations market. As such, the No Action alternative was dismissed.

C. POSTPONED ACTION

Similar to the no action alternative, the postponed action alternative would delay the implementation of the proposed improvements. Based on the age of the existing hotel structures, as well as the need to upgrade hotel amenities to meet client expectations, the postponed action alternative was dismissed as it would likely cause increases in costs for the project. Further, it is noted that funding has been secured for the construction of the project and delay of the project could result in loss of the funding.

D. DESIGN ALTERNATIVES

In the review of the parking garage alternatives, the Applicant undertook a parking study with its architect to review possible alternatives for location of the improvement. Among the alternatives studied included the location of the parking garage within the north parking area, a parking garage which straddled both the north and south parking areas, the location of the parking garage within the south parking area, and a final alternative of locating a

parking facility off-site from the Westin Maui Resort & Spa. A summary of the findings for each alternative is provided below:

North Parking Area: The parking study analyzed the possibility of installing a parking garage in the north parking area (adjacent to the Whaler's Village shopping complex). However, due to the small size of the parking area, the parking garage would need to be compact and would increase the height of the structure beyond five (5) stories in order to meet the parking needs for the Westin Maui. Mitigation of the visual impacts of a high parking garage may be difficult to achieve and the cost impacts for a taller garage were also considered. Additionally, this option would place the Westin Maui over its allowable lot coverage for the property as permitted by zoning. A variance will be required in order to permit the additional lot coverage. After review, this alternative was dismissed.

North/South Parking Area: This alternative included the potential for a parking structure which straddled the north and south parking areas. This proposal also included a bridge over the existing entry driveway to connect the two (2) structures. The structures were proposed to be oriented along Kaanapali Parkway, in a north-south direction to provide for efficiencies in the parking garage layout. Additionally, this option would require a variance to allow for additional lot coverage. Due to concerns on the visual impacts of this alternative along Kaanapali Parkway, the uncertainty of the variance approval as well as the preliminary cost estimates, this alternative was dismissed.

South Parking Area: This is the current proposed location for the parking garage which will be lowered by four (4) feet below grade for a 3-½ and 4-½ level structure. Within this alternative, alternative configurations for the parking garage were also studied, including orientation of the parking garage in a north/south direction, alternative locations within the south parking area, as well as shortening the length of the parking garage and increasing the height of the structure. In reviewing and selecting the final proposed location of the parking garage, several factors, including location of existing underground utilities, visual impacts, and parking requirements, were taken into consideration. Refer to **Appendix "I"**.

Off-Site Parking Area: A majority of the existing Westin Maui Resort & Spa site is developed and, as such, an option for an off-site parking location was examined. However, there is a limited amount of undeveloped property within the Kaanapali Resort area and the Maui County Code currently requires that required parking stalls be provided within 400 feet of the property where the parking is needed. The Applicant reviewed the option to purchase additional property, however, it was determined that the one (1) parcel which could be purchased could not be utilized for parking with its current land entitlements. Thus, in order for the off-site parking area to be used for parking for the convenience of guests and employees, the applicant would have to negotiate and complete the purchase of

land and additional permitting or land entitlements would be required. Due to the timing of the additional permitting for this site in conjunction with the planned Westin Maui Resort & Spa project, this alternative was dismissed.

VIII. LIST OF PERMITS AND APPROVALS

VIII. LIST OF PERMITS AND APPROVALS

It is anticipated that the project will need the following permits and approvals:

State

1. Department of Health Noise Permit, as applicable
2. NPDES Permit, as applicable

County of Maui

1. Construction Permits
2. Grading Permits
3. Building Permits
4. Special Management Area (SMA) Use Permit
5. Shoreline Setback Variance
6. Environmental Assessment – Finding of No Significant Impact

IX. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

IX. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were consulted during preparation of the Draft Environmental Assessment (EA). Agency comments and responses to substantive comments are included herein.

1. Larry Yamamoto, State Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
P.O. Box 50004
Honolulu, Hawaii 96850-0001

2. Ranae Ganske-Cerizo, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
77 Hookele Street, Suite 202
Kahului, Hawaii 96732

3. George Young, Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Regulatory Branch, Building 230
Fort Shafter, Hawaii 96858-5440

4. Loyal A. Mehrhoff, Field Supervisor
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122
Box 50088
Honolulu, Hawaii 96813

5. Kathryn Matayoshi, Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804

6. Heidi Meeker, Planning Division
Office of Business Services
Department of Education
c/o Kalani High School
4680 Kalanianaole Highway, #T-B1A
Honolulu, Hawaii 96821

7. Jobie Masagatani, Chair
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

8. Loretta J. Fuddy, Director
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814

9. Alec Wong, P.E., Chief
Clean Water Branch
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814

10. Patti Kitkowski, District Environmental
Health Program Chief
State of Hawaii
Department of Health
Maui Sanitation Branch
54 South High Street, Room 300
Wailuku, Hawaii 96793

11. Laura McIntyre, AICP, Office Manager
Environmental Planning Office
Department of Health
919 Ala Moana Blvd., Suite 312
Honolulu, Hawaii 96814

12. Lene Ichinotsubo
Environmental Management Division
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 212
Honolulu, Hawaii 96814

13. William J. Aila, Jr., Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

14. Puaalaokalani Aiu, Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

15. Jenny Pickett, Maui Archaeologist
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
130 Mahalani Street
Wailuku, Hawaii 96793

16. Glenn Okimoto, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813
Cc: Ferdinand Cajigal

17. Gary Gill, Acting Director
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawaii 96813

18. Dr. Kamana`opono Crabbe, Chief Executive Officer
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

19. Anna Foust, Officer Management Officer
Maui Civil Defense Agency
200 South High Street
Wailuku, Hawaii 96793

20. Jeffrey A. Murray, Fire Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaii 96732

21. Jo-Ann Ridao, Director
County of Maui
Department of Housing and Human Concerns
One Main Plaza
2200 Main Street, Suite 546
Wailuku, Hawaii 96793

22. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Halia Nakoa Street, Unit 2
Wailuku, Hawaii 96793

23. William Spence, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

24. Gary Yabuta, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

25. David Goode, Director
County of Maui
Department of Public Works
200 South High Street
Wailuku, Hawaii 96793

26. Kyle Ginoza, Director
County of Maui
Department of Environmental Management
One Main Plaza
2200 Main Street, Suite 100
Wailuku, Hawaii 96793

27. Jo Anne Johnson Winer, Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawaii 96793

28. David Taylor, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

29. Dan Takahata, Manager – Engineering
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96733

30. Hawaiian Telcom
60 South Church Street
Wailuku, Hawaii 96793

APR 18 2013

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

In Reply Refer To:
2013-SL-0221

APR 16 2013

Karlynn Fukuda
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Subject: Species List for Proposed Master Plan Improvements of the Westin Maui Resort and Spa, Lahaina, Maui

Dear Ms. Fukuda:

The U.S. Fish and Wildlife Service (Service) received your correspondence on March 28, 2013, requesting comment on the proposed master plan improvements to the Westin Maui located at 2365 Kaanapali Parkway, Lahaina, Maui. The property has been identified as Tax Map Key (2) 4-4-008:019 and encompasses approximately 12 acres. With the implementation of the proposed master plan, the Westin Maui will revitalize its existing facility as well as provide improvements which will upgrade the property to meet current and future needs for guests of the resort. The proposed demolition of the existing pool restrooms and storage areas will occur within the 150-foot shoreline setback area for the property. The demolished areas will be replaced with a paved deck area, which will provide additional seating area for the existing Ono Bar and Tropica Restaurants adjacent to the existing restroom and storage building. New vertical construction within the shoreline setback area will be limited to the installation of shade structures over the paved dining areas. The demolition and construction activities within the shoreline setback area will trigger compliance with the requirements of Hawaii Revised Statutes Chapter 343.

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program, one species protected by the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*) could be impacted by the proposed project. To assist you with minimization and avoidance of impacts to this species, the Service offers the following recommendations:

- The threatened green sea turtle (*Chelonia mydas*) may utilize the beach in the proposed action area for nesting and basking. To maintain viable turtle habitat in the proposed action area, no ocean or beach-directed lighting, no staging of equipment on the beach, and no driving of equipment on the beach are recommended.

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Green sea turtles are susceptible to artificial lighting that can disorient turtles away from the ocean. Green sea turtles come ashore to nest on beaches from May through September, peaking in June and July. Optimal nesting habitat is a dark beach free of barriers that restrict their movement. Nesting turtles may be deterred from approaching or laying successful nests on lighted or disturbed beaches. If they do come ashore, they may become disoriented by artificial lighting, leading to exhaustion and placement of a nest in an inappropriate location (such as at or below the high tide line where nests are unlikely to be successful). Hatchlings that emerge from nests may be disoriented by artificial lighting. In addition, turtle nests and hatchlings are susceptible to human disturbance and predation by feral mammals such as small Indian mongoose (*Herpestes auropunctatus*), cats (*Felis catus*), feral dogs (*Canis familiaris*). Adult sea turtles may also come ashore to bask during the day and may be disturbed by pedestrian use. Although we are not aware of any documented green sea turtle nests in the vicinity of the project site, all beach-front property has the potential to provide nesting and basking habitat for the species. Lighting recommendations are listed below.

To minimize and avoid artificial lighting impacts to sea turtles, a comprehensive lighting plan should be developed and incorporated into the draft Environmental Assessment. If lights cannot be eliminated due to safety or security concerns, then they should be positioned low to the ground, be motion-triggered, and be shielded and/or full cut-off. Effective light shields should be completely opaque, sufficiently large, and positioned so that the bulb is only visible from directly below and so that light from the shielded source cannot be seen from the beach. Construction activities should occur during daylight hours only.

No designated critical habitat occurs within the vicinity of the proposed action area. You should contact us prior to project implementation relative to avoidance and minimization measures for listed ESA species. You may need to consult with us or obtain an Incidental Take Permit if these measures are insufficient. Please contact Dr. Tim Langer (808-792-9462) with questions or for further guidance.

Sincerely,

Acting For Loyal Mehrhoff
Field Supervisor

cc: Lasha-Lynn H. Salbosa, Division of Forestry and Wildlife

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Loyal Mehrhoff, Field Supervisor
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Kaanapali, Maui, TMK: (2)4-4-008:019, (2013-SL-0221)

Dear Mr. Mehrhoff:

Thank you for your Department's letter dated April 16, 2013 providing early consultation comments on the proposed Westin Maui Resort & Spa (Westin Maui) Master Plan Improvements. On behalf of the Westin Maui we provide the following responses to your comments.

We note your comments relative to the threatened green sea turtle which may utilize the beach area fronting the Westin Maui for nesting and basking as well as the recommendations that no ocean or beach directed lighting be utilized, no staging of equipment on the beach and no driving of equipment on the beach be done for the proposed project. We concur with the USFWS comments and note that for the proposed project, no ocean or beach directed lighting is proposed and that no staging of equipment on the beach or driving of equipment on the beach will occur as part of the construction activities for the project. There is an existing improved beach walk area located between the project site and the beach. At its closest point, the proposed improvements are located approximately 69 feet away from the shoreline. The project improvements may include exterior lighting for safety and security purposes, however all proposed lighting will be fully shielded and have light directed downward, in compliance with the County of Maui outdoor lighting ordinance. We thank you for your confirmation that no critical habitat occurs within the vicinity of the project area.

MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
PH: (808)244-2015 FAX: (808)244-8729
OAHU
735 Bishop St., Suite 238 Honolulu, Hawaii 96813 | PH: (808)983-1233
WWW.MHPLANNING.COM

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Thank you for your participation in the EA process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to you for review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma
Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Jim Neely and Carlos Rivera, Starwood Hotels & Resorts Worldwide
Larry Cunha, WCIT Architecture
K:\DATA\Starwood\Westin MP\ECL Responses\USFWS.ltr.docx

APR 08 2013

NEIL ABERCROMBIE
GOVERNOR
STATE OF HAWAII

JOBIE M. K. MASAGATANI
CHAIRMAN
HAWAIIAN HOMES COMMISSION

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAII 96805

April 4, 2013

Ms. Karlynn Fukuda Executive Vice President
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Ms. Suyama:

Subject: Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, Hawai'i (TMK (2)4-4-008:09)

Thank you for the opportunity to comment on the Early Consultation Request. The Department of Hawaiian Home Lands has no comment to offer at this time.

Should you have any questions, please contact the Planning Office at (808) 620-9480.

Aloha,

Darrell C. Yagodich
Planning Program Manager

5

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Darrell C. Yagodich, Planning Program Manager
Department of Hawaiian Home Lands
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96805

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Mr. Yagodich:

Thank you for your letter dated April 4, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we note that the State Department of Hawaiian Home Lands reviewed the information and does not have comments at this time.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
K:\DATA\Starwood\Westin MP\ECL Responses\DHHL.ltr.docx

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MAY 28 2013

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD/CWB

05076PJF.13

May 24, 2013

Ms. Karlynn Fukuda
Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: Comments on the Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa Lahaina, Island of Maui, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated March 27, 2013, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54, and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Anti-degradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the CWB Individual

NPDES Form through the e-Permitting Portal and the hard copy certification statement with $1,000 filing fee. Please open the e-Permitting Portal website at: https://eha-cloud.doh.hawaii.gov/epermit/View/home.aspx. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the "CWB Individual NPDES Form." Follow the instructions to complete and submit this form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 438-9258) regarding their permitting requirements.

   Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Non-compliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

If you have any questions, please visit our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

Darryl Lum for AW

ALEC WONG, P.E., CHIEF
Clean Water Branch

JF:np

c: DOH-EPO #13-075 [via e-mail only]

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
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GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Alec Wong, P.E., Chief
Clean Water Branch
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2)4-4-008:019, Reference EMD/CWB 05076PJF.13

Dear Mr. Wong:

Thank you for your letter dated May 4, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements Project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we provide the following responses in the order of the County Department of Health (DOH), Clean Water Branch comments.

1. CRITERIA FOR STATE WATERS

a. The Project will follow the Hawaii Administrative Rules Section 11-54-1.1 (Antidegradation Policy) requiring the maintenance and protection of receiving State Waters, as applicable.
b. The Project will follow the Hawaii Administrative Rules Section 11-54-3 (State Receiving Waters Classification) and designated uses, as applicable.
c. The Project will follow the Hawaii Administrative Rules Section 11-54-4 through 11-54-8 (Water Quality Criteria), as applicable.

2. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

An application for an NPDES permit will be submitted as may be applicable for the project.

MAUI
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3. CLEAN WATER ACT AND NAVIGABLE WATERS OF THE UNITED STATES

The Army Corp of Engineers, Regulatory Branch was included in the early consultation request for the project. Continued coordination with the Corps will be sought upon receipt of their comments.

4. STATES WATER QUALITY STANDARDS

The Project will follow the Hawaii Administrative Rules Section 11-54 (Water Quality Standards) and Hawaii Administrative Rules Chapter 11-55 (permitting), as applicable.

The standard comments posted on the website referenced in DOH's letter will be reviewed for the Project, as applicable.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Glenn Kuwaye. Wilson Okamoto Corporation
K:\DATA\Starwood\Westin MP\ECL Responses\DOH CWB.ltr.docx

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GOVERNOR OF HAWAII

APR 10 2013

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, HAWAII 96793

April 9, 2013

Ms. Karlynn Fukuda
Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

Subject: Early Consultation request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina Maui TMK: (2) 4-4-008:019

Thank you for the opportunity to review this project. We have the following comments to offer:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage maybe required for this project. The Clean Water Branch should be contacted at 808 586-4309.

2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work. The Indoor & Radiological Health Branch should be contacted at 808 586-4700.

It is strongly recommended that the Standard Comments found at the Department's website: http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html be reviewed, and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808 984-8230 or E-mail me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

Patti Kitkowski
District Environmental Health Program Chief

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Ms. Patti Kitkowski
District Environmental Health Program Chief
Maui District Health Office
Department of Health
State of Hawaii
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Ms. Kitkowski:

Thank you for your letter dated April 9, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan improvements project in Lahaina, Maui. We note that the State Department of Health (DOH), Maui District Health Office has reviewed the information and provided comments. On behalf of Westin Maui Resort & Spa, we provide the following responses in the order of DOH's comments.

NPDES PERMIT

1. The Clean Water Branch will be contacted regarding a National Pollutant Discharge Elimination System (NPDES) permit coverage, as may be required.

NOISE

2. A noise permit application will be submitted to the Indoor and Radiological Health Branch, as may be required.

The project will review the Standard Comments that are posted on DOH's website, and will incorporate it into the project, as may be applicable.

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Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Larry Cunha, WCIT Architecture
Glenn Kuwaye, Wilson Okamoto Corporation
K:\DATA\Starwood\Westin MP\ECL Responses\DOH Maui.ltr.docx

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GOVERNOR OF HAWAII

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

April 4, 2013

Ms. Karlynn Fukuda
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Fukuda:

This correspondence is in response to your request for comments to the Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning & Ventilating
- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements
- Chapter 11-503 Fees for Asbestos Removal & Certification
- Chapter 11-504 Asbestos Abatement Certification Program

Should you have any questions, please contact me at (808) 586-4701.

Sincerely,

Jeffrey M. Eckerd
Program Manager
Indoor and Radiological Health Branch

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MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Jeffrey M. Eckerd, Program Manager
Indoor and Radiological Health Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Mr. Eckerd:

Thank you for your letter dated April 4, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we provide the following response to the comments from the State Department of Health (DOH), Indoor and Radiological Health Branch.

The proposed project activities will be in accordance with the Administrative Rules of DOH pertaining to Chapter 111-39 (Air Conditioning and Ventilating), Chapter 11-46 (Community Noise Control), Chapter 11-501 (Asbestos Requirements), and Chapter 11-504 (Asbestos Abatement Certification Program).

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Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
K:\DATA\Starwood\Westin MP\ECL Responses\DOH IRHB.ltr.docx

APR 0 2 2013

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GOVERNOR OF HAWAII

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

13-075
Westin Maui

March 28, 2013

Ms. Karlynn Fukuda
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008: 019

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter dated March 27, 2013. Thank you for allowing us to review and comment on the subject letter. The letter was routed to the Clean Water and Indoor & Radiological Health Branches in the Department of Health. They will provide specific comments to you if necessary. EPO recommends that you review the Standard Comments (www.hawaii.gov/health/epo under the land use tab). You are required to adhere to all Standard Comments specifically applicable to this application.

EPO suggests that you examine the many sources available on strategies to support the sustainable design of communities, including the:
U.S. Environmental Protection Agency's sustainability programs: www.epa.gov/sustainability
U.S. Green Building Council's LEED program: www.new.usgbc.org/leed

The DOH encourages everyone to apply these sustainability strategies and principles early in the planning and review of projects. We also request that for future projects you consider conducting a Health Impact Assessment (HIA). More information is available at www.cdc.gov/healthyplaces/hia.htm. We request you share all of this information with others to increase community awareness on sustainable, innovative, inspirational, and healthy community design.

We request a written response confirming receipt of this letter and any other letters you receive from DOH in regards to this submission. You may mail your response to 919 Ala Moana Blvd., Ste. 312, Honolulu, Hawaii 96814. However, we would prefer an email submission to epo@doh.hawaii.gov. We anticipate that our letter(s) and your response(s) will be included in the final document. If you have any questions, please contact me at (808) 586-4337.

Mahalo,

Laura Leialoha Phillips McIntyre, AICP
Manager, Environmental Planning Office

17

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Laura Leialoha Phillips McIntyre, AICP, Manager
Environmental Planning Office
Department of Health
State of Hawaii
919 Ala Moana Blvd. Suite 312
Honolulu, Hawaii 96814

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Ms. McIntyre:

Thank you for your letter dated March 28, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan improvements project in Lahaina, Maui. We note that the Department of Health, Environmental Planning Office has reviewed the information and provided comments.

The information in the websites provided in your letter will be reviewed and applied to this project, as may be appropriate.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment

Very truly yours,

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Larry Cunha, WCIT Architecture

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LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
ENVIRONMENTAL MANAGEMENT DIVISION
SOLID AND HAZARDOUS WASTE BRANCH
919 ALA MOANA BOULEVARD, #212
HONOLULU, HAWAII 96814

In reply, please refer to:
EMD/SHWB

April 29, 2013

S0464LO

Ms. Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Fukuda:

SUBJECT: Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui (TMK: 2-4-4-008:019)

Thank you for giving us the opportunity to review and provide comments on the subject document. It has been reviewed by the Office of Solid Waste Management, Solid Waste Section, Hazardous Waste Section, and Underground Storage Tank Section of the Solid and Hazardous Waste Branch.

The Underground Storage Tank Section offers the following comments:

Our record shows two 10,000-gallon diesel underground storage tanks (USTs) installed in 1986 and are currently in use at the subject location. A confirmed release has not been reported to our office.

In the event contamination is discovered in the area of these USTs, you are required to notify our office within 24 hours of discovery of release and begin release response activities.

We have developed a guidance manual entitled, "Technical Guidance Manual for Underground Storage Tank Closure and Release Response" (dated March 2000) to assist responsible parties and their consultants and contractors in complying with the state UST release response activities.

Copies of the technical manual and the state regulations are found on the Department of Health (DOH) website at:
http://hawaii.gov/health/environmental/waste/environmental/waste/index.html.

For further information about the UST Program, please contact Ms. Roxanne Kwan at (808) 586-4226.

The Office of Solid Waste Management offers the following comments:

Demolition and new construction activities are anticipated based on the potential scope of the project. Therefore, we offer the following comments:

1. The generator of the waste must determine if any demolition building components contain hazardous waste. Please refer to Attachment 1.

2. Any non-hazardous lead-based paint waste must be disposed of at DOH-permitted disposal facilities such as the DeCoite C&D Landfill or Central Maui Landfill, and not recycled. Please refer to Attachment 2.

3. Please inquire as to possible arrangements with DOH-permitted recovery facilities such as Pohakulepo Recycling, LLC, dba Hawaiian Cement for the potential disposition of unpainted, uncontaminated concrete (no asbestos, lead-based paint or other types of contamination accepted) from either demolition or new construction. Please be aware that these businesses may choose to accept unpainted, uncontaminated concrete from their own jobs only. Concrete or other wastes that fail the TCLP test for hazardous waste must be managed as hazardous waste.

4. Non-hazardous concrete with lead-based paint must, prior to demolition, be separated from concrete intended for recycling and sent to DOH-permitted disposal facilities. If the project requires abatement of lead-based paint or asbestos activities, then the applicant needs to contact Mr. Robert Lopes of the Indoor and Radiological Health Branch at (808) 586-4700 as to when such activities will actually occur.

5. If on-site reuse of concrete is intended, then the uncontaminated concrete must also meet the state's definition of "inert fill material" defined as:

> **Section 342H-1, HRS Definition**
> *"Inert fill material" means earth, soil, rocks, rock-like material such as cured asphalt, brick, and clean concrete less than eight inches in diameter, except as specified by a licensed soils engineer with no exposed steel reinforcing rod. The fill material shall not contain vegetation or organic material, or other solid waste.*

The fill material shall be clean and uncontaminated. We typically utilize the Environmental Action Levels (EALs) for residential usage as well as the most stringent water quality standards for unrestricted use as a basis of determining whether fill is contaminated or not. The EALs may be found at http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/environmental-hazard-evaluation-and-environmental-action-levels.

6. We assume that any wood waste from existing structures is of the treated variety. Such wood waste must be disposed of at DOH-permitted disposal facilities, not recycled. Currently there are no DOH-permitted facilities on Maui that accept treated lumber for recycling.

7. Please send any ferrous scrap to permitted scrap metal facilities such as Schnitzer Steel Hawaii Corp., dba Hammerhead Metals Recycling.

8. Please send any non-ferrous scrap to DOH-permitted facilities such as any of the various Reynolds Recycling, Inc. locations on Maui.

Please be reminded that the applicant's submittal was reviewed with respect to solid waste management and disposal issues only. We do recommend that the applicant obtain approval from other agencies (such as OSHA) that may be involved in the oversight and implementation of various aspects of their proposed action.

If you have any questions or comments, please contact Mr. John Valera of our Office of Solid Waste Management at (808) 586-4226.

Sincerely,

STEVEN Y.K. CHANG, P.E., CHIEF
Solid and Hazardous Waste Branch

Enclosures

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
SOLID AND HAZARDOUS WASTE BRANCH
OFFICE OF SOLID WASTE MANAGEMENT

DISPOSAL OF LEAD-BASED PAINT WASTE

Eff. January 1, 2003

This guidance document clarifies existing federal, state and local requirements for the management and disposal of lead-based paint waste, and their impacts on the activities of contractors and other generators of lead-based paint debris. LBP waste is generated from either the abatement, rehabilitation, renovation, remodeling or demolition of non-residential buildings and residential dwellings constructed prior to 1978.

Based on current Federal policy statements and State regulations (see Addendum):

1. **Generators of non-residential LBP waste shall conduct a *hazardous waste determination* according to HAR Chapter 11-261.** The TCLP (Toxicity Characteristic Leaching Procedure) is the test method for determining whether a "solid waste" exhibits the toxicity characteristics of "hazardous waste." Contact the Hazardous Waste Program (808) 586-4226 for a copy of the procedures.

2. **Generators of residential demolition LBP waste shall also conduct a *hazardous waste determination* according to HAR Chapter 11-261.**

3. **Those who generate LBP waste as a result of abatement, rehabilitation, renovation and remodeling in homes and other residences are exempt from *hazardous waste laws*.** However, generators shall follow state and local requirements for proper disposal of non-hazardous LBP waste.

4. **Non-hazardous LBP waste (including "residential LBP waste" defined in a Federal Register "Proposed Rule"[1]) is a subset of construction & demolition (C&D) waste that requires special handling. Non-hazardous LBP waste is also referred to as a special waste.** "Special wastes" means any solid waste that, *because of its source or physical, chemical, or biological characteristics*, require special consideration for its proper processing or disposal, or both. This term includes, but is not limited to, asbestos, lead acid batteries, municipal waste combustion ash, sewage sludge that is non-hazardous, medical wastes, tires, white goods, and derelict vehicles.[2]

LBP Waste Disposal

Dispose of non-hazardous LBP waste at permitted municipal solid waste landfills or

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[1] Federal Register, October 23, 2001, Vol. 66, No. 205, pp. 53566-53573
[2] Section 11-58.1-03, Hawai'i Administrative Rules

permitted C&D waste landfills, such as PVT and Waimanalo Gulch (Oahu); Central Maui, Ma'alaea, Molokai, Hana, and Lanai (Maui County); Pu'uanahulu and Hilo (Hawai'i); and Kekaha (Kauai).

Landfills in Hawai'i are also subject to further waste acceptance restrictions imposed by county governments. For example, since 1994 the City & County of Honolulu restricted *municipal solid waste landfills* from accepting loads containing C&D waste greater than 10% in volume.

Disposal of "residential LBP waste" defined in the Federal Register[3] (CHART 1):

STEP 1 Qualified or knowledgeable personnel select an LBP identification method (e.g., prior knowledge) and determine if waste contains LBP.

STEP 2 Dispose with regular household rubbish (homeowners conducting do-it-yourself activities ONLY), OR

Send to permitted landfill: complete a Waste Profile that will provide the landfill with written notification of incoming LBP waste.

RESIDENTIAL ABATEMENT PROJECTS: also containerize, solidify and label LBP wastes that are paint chips, dust, and/or sludges:

1. Use durable containers such as steel paint cans.
2. Solidification may be by methods such as cement (for dust and chips) or absorbent material (for sludges).
3. Labeling needs to say "Lead Based Paint Waste".

STEP 3 Declare to the landfill operator that the incoming load contains LBP waste.

Disposal of residential demolition LBP waste, and non-residential LBP waste (CHART 2):

STEP 1 Qualified or knowledgeable personnel select the proper LBP identification method, and determine if waste contains LBP.

STEP 2 Make a hazardous waste determination by applying knowledge and by testing. The Hazardous Waste Program (808) 586-4226 has a copy of the procedures.

STEP 3 Dispose properly based on the outcome of the hazardous waste determination (Section 11-262-11, HAR):

1. If the TCLP result for lead is equal to 5 ppm or greater, the LBP waste is a hazardous waste that must be disposed at a hazardous waste landfill. Landfills in Hawai'i do not accept hazardous wastes.

[3] Federal Register, October 23, 2001, Vol. 66, No. 205, pp. 53566-53573

2. If the TCLP result is less than 5 ppm, the LBP waste is a solid waste and may be disposed at Hawai'i landfills that accept construction and demolition wastes. Complete a Waste Profile that will provide the landfill with written notification of incoming LBP waste.

   NON-HAZARDOUS, NON-RESIDENTIAL ABATEMENT LBP WASTES: containerize, solidify and label LBP wastes that are paint chips, dust, and/or sludges:

   (1) Use durable containers such as steel paint cans.
   (2) Solidification may be by methods such as cement (for dust and chips) or absorbent material (for sludges).
   (3) Labeling needs to say "Lead Based Paint Waste".

STEP 4 ALL NON-HAZARDOUS LBP WASTES: Declare to the landfill operator that the incoming load contains LBP waste.

LBP waste shall not be recycled. The U.S. EPA believes that LBP waste that is shredded or chopped into mulch, ground cover, or topsoil or for site leveling, fill or roadbed material may cause health risks through ingestion of LBP, dust, or contaminated soil. Further EPA studies have shown that lead is relatively immobile in subsurface soils under non-highly acidic conditions, but may increase in mobility through soil layers to groundwater if soil conditions are more acidic.

Pre-Demolition or Renovation BMPS

To identify and prepare architectural components containing LBP for disposal, the DOH strongly recommends generators and contractors to implement the following practices, prior to demolition or renovation:

- **Identify building components that contain LBP for selective removal** during the demolition or renovation stage. NOTE: components that are selectively removed are subject to a hazardous waste determination, unless the structure is residential, and work is related to renovation or LBP abatement.

- **Abate surfaces.** Abate building components to meet the HUD lead limit of 1.0 mg/cm^2 or 0.5% by weight. **Treated lumber with LBP, even if abated, may not be recycled into mulch, ground cover, topsoil, fill or roadbed material.**

  LBP concrete that is completely abated to where it is no longer considered LBP waste may be recycled.

- **Test representative samples of the waste to determine if their total lead content falls below the lead limit.** A guidance document for measuring lead in paint is available from the DOH Lead Program (808) 586-5800, or the Solid Waste Section (808) 586-4226.

DOH also provides education on LBP sampling as part of the EPA lead accreditation program, which is administered by the DOH Lead Program. The main objective of the accreditation program is to train persons who will be responsible for conducting lead paint abatement activities.

For a current list of permitted landfills contact the Solid Waste Section (808) 586-4226.

Reference

USHUD. 1997. *Chapter 7: Lead-Based Paint Inspection, Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, 1997 Revision*: U.S. Department of Housing and Urban Development, Office of Lead Hazard Control, 1997.

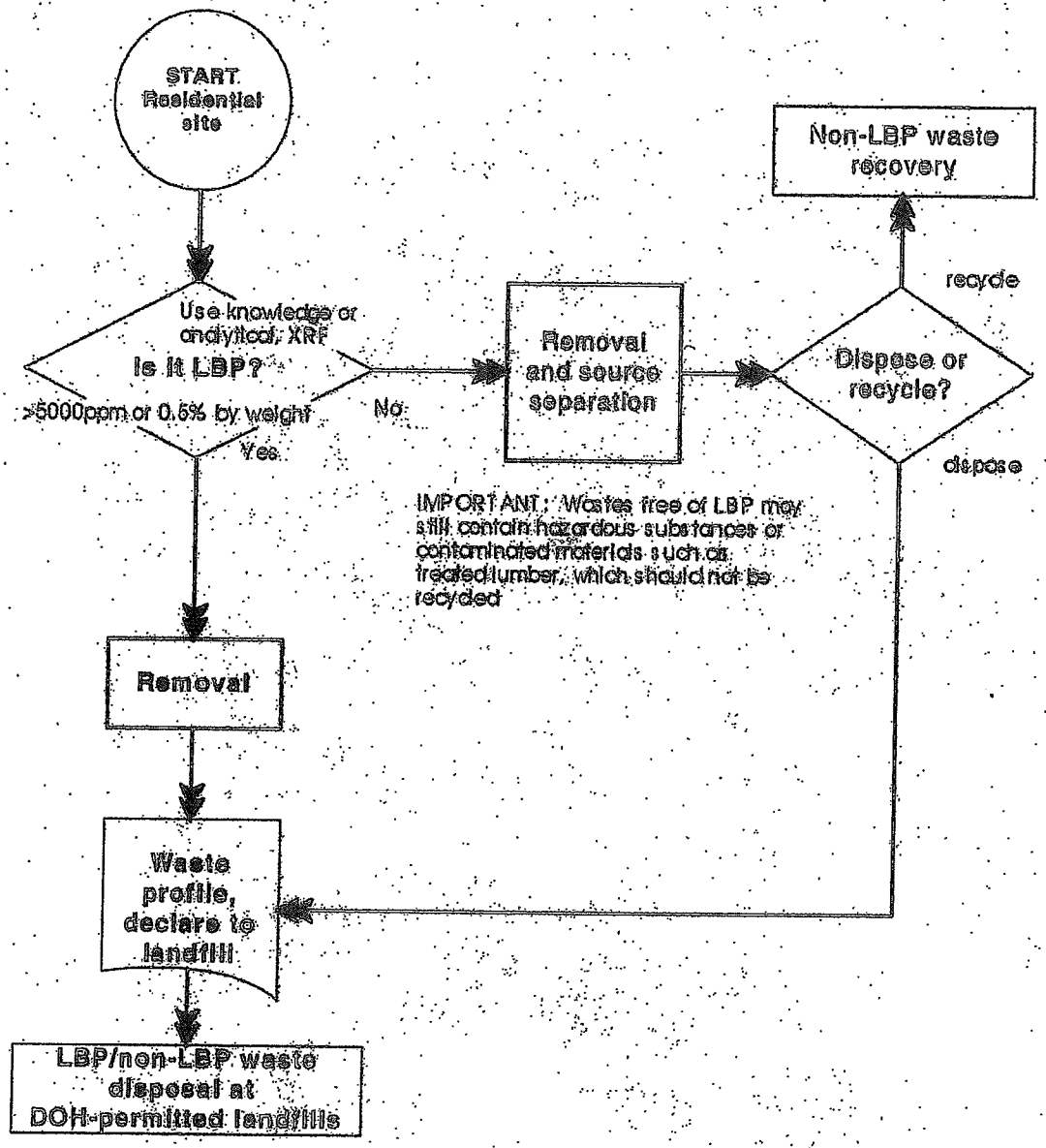
APPROVED / DISAPPROVED

Loretta J. Fuddy, A.C.S.W., M.P.H.
Acting Director of Health
Department of Health

DEC 23 2002

Date

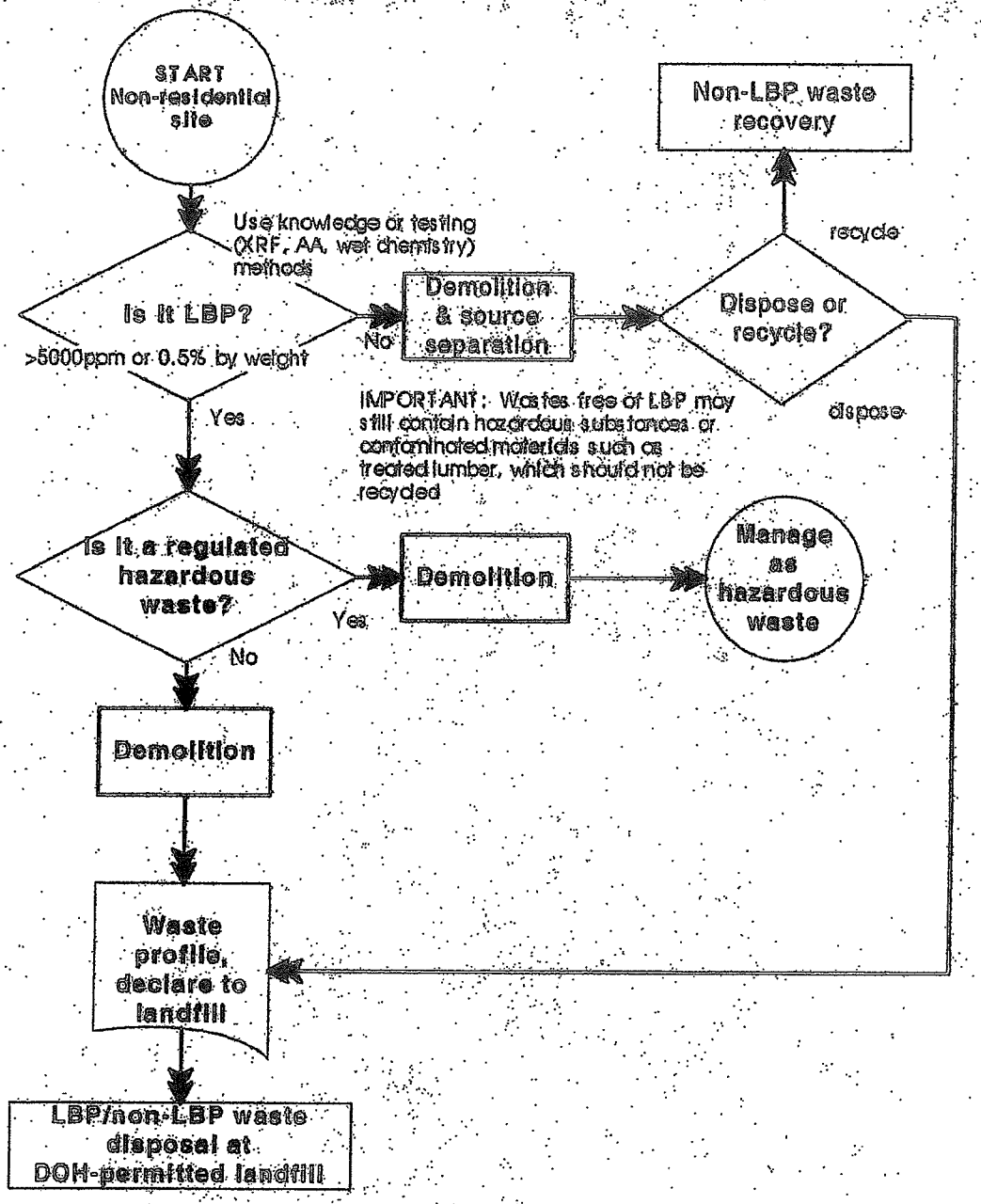
Chart 1
Disposal of Residential Lead-Based Paint (LBP) Waste



NOTES:

1. Residential sources include single family homes, apartment buildings, row houses, military barracks, and college dormitories.
2. Recommended handling of residential LBP chips, dust and sludge: solidify, containerize and label prior to disposal.
3. Waste notification to the landfill is required.
4. Non-LBP wastes containing hazardous substances (e.g., treated lumber) shall be disposed and not recycled.

Chart 2
Disposal of Residential Demolition and Non-residential Lead-Based Paint Waste



NOTES:

1. Non-residential LBP wastes are subject to hazardous waste determination.
2. Non-LBP wastes containing hazardous substances (e.g., treated lumber) shall be disposed and not recycled.

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
SOLID AND HAZARDOUS WASTE BRANCH
OFFICE OF SOLID WASTE MANAGEMENT

DISPOSAL OF LEAD-BASED PAINT WASTE
ADDENDUM

Applicable Federal Laws and Actions

- According to Section 403 of the Toxic Substances Control Act (TSCA), as amended, the Environmental Protection Agency (EPA) defines lead-based paint (LBP) as paint with lead levels equal to or exceeding 1.0 milligram per square centimeter (mg/cm^2) or 0.5% by weight.

- The U.S. Department of Housing & Urban Development (HUD) has similarly defined lead-based paint as any paint, varnish, shellac or other coating that contains lead equal to or greater than 1.0 mg/cm^2 as measured by x-ray fluorescence (XRF) or laboratory analysis, or 0.5 percent by weight (5,000 µg/g, 5,000 ppm, or 5,000 mg/kg) as measured by laboratory analysis.[4]

- In 1978, the Consumer Product Safety Commission (CPSC) banned the sale of residential paint containing greater than 0.06% lead (a trace amount). The CPSC also prohibited the use of such paint in residences and other areas where consumers have direct contact with painted surfaces.

- An EPA policy entitled Update on Lead-based Paint dated August 2000 states that **residential** LBP waste is not subject to Resource Conservation & Recovery Act (RCRA) Subtitle C (Federal hazardous waste) regulations. "Contractors can manage **residential** lead-based paint waste as household waste." **Residential** sources of LBP waste include but are not limited to single-family homes, apartment buildings, row houses, military barracks and college dormitories.

- The EPA defined "residential lead-based paint waste" in a Federal Register "Proposed Rule", October 23, 2001 (Vol. 66, No. 205). Residential lead-based paint waste is waste generated as a result of lead-based paint activities (including abatement, rehabilitation, renovation and remodeling) in homes and other residences. The term includes but is not limited to lead-based paint debris, chips, dust, and sludges. The term does not include LBP wastes from demolition activities.

- The EPA interprets residential LBP waste to be household waste under 40 CFR 261.4(b)(1).

---

[4] Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (U.S. Department of Housing and Urban Development, 1997 Revision)

Applicable State of Hawai'i Laws

- Hazardous waste regulations, known on the federal level as RCRA Subtitle C[5] are enforced within the State of Hawai'i under Hawai'i Revised Statutes (HRS) 342J and Hawai'i Administrative Rules (HAR) Title 11, Chapters 261 through 280. Chapter 11-261, HAR defines "household waste" as "any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas)." *This definition is identical to the Federal definition (40 CFR 261.4(b)(1)).*

- Solid waste regulations, are enforced within the State of Hawai'i under HRS 342H and HAR Title 11, Chapter 58.1 (11-58.1), and provide broader authority to the Department of Health (DOH) than federal regulations, known as RCRA Subtitle D[6].

[5] Resource Conservation and Recovery Act (40 CFR Parts 261 to 280)

[6] Resource Conservation and Recovery Act (40 CFR Parts 258)

HAWAII DEPARTMENT OF HEALTH
CONSTRUCTION AND DEMOLITION (C&D) WASTE DISPOSAL GENERAL GUIDANCE

This C&D waste disposal guidance supersedes the previous letter dated May 24, 1996. Although the waste composition varies from project to project, C&D wastes generally consist of concrete, wood, metal, glass, plastic, asphalt, tile, drywall, roofing and insulation material. These wastes are often bulked as one waste stream when sent for disposal. With advance planning, most of these wastes can be reused on the job site and/or salvaged for recycling opportunities.

Another type of C&D waste stream sometimes generated from a construction project is excavated soil.

If the C&D waste is designated for disposal to a landfill or to any other off-site location, the contractor must make a hazardous waste determination in accordance with the Hawaii Administrative Rules (HAR) §11-262-11. Making a hazardous waste determination is a step-by-step process, and should start with determining whether the waste is excluded, then if listed, and finally if characteristic. Determining whether a waste is hazardous under RCRA (Resource Conservation and Recovery Act) can be done through one of the following methods:

1. **Testing** – Testing the waste according to the methods set forth in subpart C of HAR 11-261; and/or

2. **Knowledge** – See attached if applying knowledge

Collecting a representative sample of the bulk C&D waste or excavated soil waste is crucial to characterizing environmental samples. If a sample is not representative, there are legal and environmental consequences. Each generator would be responsible for its own sampling plan. We advise contractors to work with experienced environmental companies and labs for guidance and implementation.

Note - Construction wastes with lead-based paint may be exempt from HAR §11-262-11 provided wastes:

1) *were from a residential structure; and*
2) *from renovation, remodeling or abatement work; and*
3) *contain no other listed constituents – refer to HAR §§11-261-20 and 11-261-30.*

Knowledge Determination

How can knowledge be applied to determine if a waste is a characteristic waste?
In some cases, a generator can use his/her knowledge of a waste to make a determination as to whether the waste is a characteristic hazardous waste. In order to use knowledge to characterize the waste, the generator must consider the raw materials that constitute the waste or the **process(es)** that result in the waste being generated.

In considering the materials that make up the waste, the generator needs to examine the specific chemical and physical characteristics of the waste material. Information such as Material Safety Data Sheets (MSDSs) can be a helpful resource. However, while MSDSs can provide useful information regarding ignitability (flash point), corrosivity (pH), and reactivity, they tend to be less useful when it comes to identifying the toxic characteristics of waste. MSDSs are not required to list all of the ingredients in a certain material, but only those that make up greater than 1% of the total constituents of that material. This means that a waste may contain a toxic constituent exceeding the regulatory limit (making it a hazardous waste), but this constituent may not necessarily be included on the MSDS. Generators should also be aware that MSDSs are representative of raw materials; the MSDS may not accurately represent a waste material that is generated by the use of a particular raw material.

In considering the **process** that generates the waste, the generator needs to ask himself/herself: How does the operation/process affect the waste? For example, does the process make the waste ... more concentrated? ... more dilute?... contain free liquids?... become contaminated? ...etc.

One critical factor in using knowledge to characterize waste is that the knowledge must be applied appropriately. In other words, the knowledge that is applied must be valid and verifiable. A generator should not just assume that a waste is non-hazardous without providing some type of supporting, verifiable information to justify that conclusion. Using knowledge of the waste to conduct a hazardous waste determination involves a well thought out process in which the waste materials or the process generating the waste are considered. It should be noted that, more often than not, it is easier to use knowledge of the waste to characterize it as hazardous than it is to characterize it as non-hazardous.

Can I always use knowledge?
No. In many cases knowledge alone is inadequate to properly characterize the waste, specifically in those cases where the waste is cross-contaminated or inherently non-homogeneous. If you are generating a waste and your knowledge of the waste is insufficient to completely and accurately characterize it, you will need to get the waste tested by a lab that is certified to perform the tests that need to be conducted on the waste. Generators that use knowledge of process in waste determinations must be able to demonstrate the basis for their claim.

How frequently must a hazardous waste determination be made?
An initial characterization must be done on each waste stream and a re-characterization must be performed at least every twelve months, or whenever there is a process change. It is recommended that MSDSs and other "knowledge of process" information be specifically reviewed during re-characterizations to ensure that neither the raw materials nor the process associated with the waste have changed.

What type of paperwork/recordkeeping is necessary with hazardous waste determinations?
According to 40 CFR 262.40, a generator must keep records of any test results, waste analysis, or other determinations made in accordance with 40 CFR 262.11 for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal. Generators that use knowledge of process in waste determinations must be able to demonstrate the basis for this claim.

Acknowledgement
State of Connecticut, Department of Environmental Protection (DEP); Knowledge Determination

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 26, 2013

Steven Y. K. Chang, P.E., Chief
State of Hawaii
Department of Health
Solid and Hazardous Waste Branch
919 Ala Moana Boulevard, #212
Honolulu, Hawaii 96814

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Kaanapali, Maui, TMK: (2)4-4-008:019, EMD/SHWB S0464L0

Dear Mr. Chang:

Thank you for your Office's comment letter dated April 29, 2013 providing early consultation comments on the proposed Westin Maui Resort & Spa (Westin Maui) Master Plan Improvements. On behalf of the Westin Maui, we provide the following responses to your comments.

Underground Storage Tank Section

Response: Thank you for your comments related to the existing underground diesel tanks located at the Westin Maui. The tanks undergo annual inspections and certifications by a licensed contractor in Hawaii. Further, there is a leak detector system installed on each tank. To date, there have been no leaks detected for either tank. We would also like to note that there are no improvements proposed for the tanks as part of the subject project. Lastly, the Westin Maui will work with its contractor, once selected, to ensure that any ground altering work within the vicinity of the underground tanks will not impact the integrity of the tanks.

Office of Solid Waste Management

Response: Westin Maui will work with its contractor, to ensure that the buildings proposed for demolition do not include hazardous waste. Should hazardous waste be present in the buildings proposed for demolition, the

MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
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OAHU
735 Bishop St., Suite 238 Honolulu, Hawaii 96813 | PH: (808)983-1233
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Westin Maui and its contractor will ensure that proper protocols and procedures are followed for the demolition of the structures, as well as the disposal of said materials. Any known and any as yet undiscovered asbestos containing material which may be located in existing structures, will be dealt with in accordance with law.

We thank you for the information regarding potential recycling facilities, as well as potential reuse of construction materials. The information has been distributed to the project team for review and consideration as the project proceeds.

Thank you for your participation in the EA process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to you for review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma
Senior Associate

KF:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Jim Neely and Carlos Rivera, Starwood Hotels & Resorts Worldwide
Larry Cunha, WCIT Architecture
K:\DATA\Starwood\Westin MP\ECL Responses\DOH SHWB.ltr.docx

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Wednesday, April 10, 2013

Munekiyo & Hiraga, Inc.
Attention: Ms. Karlynn Fukuda, Executive Vice President
305 High Street, Suite 104 via email: planning@mhplanning.com
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: Proposed Master Plan Improvements for the Westin Maui Resort & Spa

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division and (b) Division of Boating and Ocean Recreation on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 3, 2013

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
X Div. of Boating & Ocean Recreation
X Engineering Division
__ Div. of Forestry & Wildlife
__ Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Maui District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Proposed Master Plan Improvements for the Westin Maui Resort & Spa
LOCATION: Lahaina, Island of Maui; TMK: (2) 4-4-008:019
APPLICANT: The Westin Maui Resort & Spa

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 8, 2013.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed:
Print Name: Carty S. Chang, Chief Engineer
Date: 4/5/13

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/ Russell Y. Tsuji
Ref.: Early Consultation Request for Proposed Master Plan Improvements to the Westin Maui Resort & Spa, Lahaina
Maui.006

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The National Flood Insurance Program (NFIP) does not regulate developments within Zone X.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Mario Siu Li at (808) 768-8098 or Ms. Ardis Shaw-Kim at (808) 768-8296 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.

( ) Ms. Carolyn Cortez at (808) 270-7813 of the County of Maui, Department of Planning.

( ) Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

_____

( ) Other: _____

Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 4/5/13

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 3, 2013

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
X Div. of Boating & Ocean Recreation
X Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Maui District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Proposed Master Plan Improvements for the Westin Maui Resort & Spa
LOCATION: Lahaina, Island of Maui; TMK: (2) 4-4-008:019
APPLICANT: The Westin Maui Resort & Spa

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 8, 2013.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(X) We have no comments.
( ) Comments are attached.

Signed: Edward R Underwood
Print Name: Edward R Underwood
Date: 4/5/13

cc: Central Files

APR 5'13AM 8:35BOR DLU

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 24, 2013

Munekiyo & Hiraga, Inc.
Attention: Ms. Karlynn Fukuda, Executive Vice President
305 High Street, Suite 104 via email: planning@mhplanning.com
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: Proposed Master Plan Improvements for the Westin Maui Resort & Spa

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on April 10, 2013, enclosed are comments from the (a) Division of Aquatic Resources and (b) Commission on Water Resources Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON

WILLIAM D. BALFOUR, JR
SUMNER ERDMAN
LORETTA J. FUDDY, A.C.S.W., M.P.H.
NEAL S. FUJIWARA
JONATHAN STARR
TED YAMAMURA

WILLIAM M. TAM
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

April 19, 2013

RECEIVED
LAND DIVISION
2013 APR 24 PM 2:59
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

TO: Russell Tsuji, Administrator
Land Division

FROM: William M. Tam, Deputy Director
Commission on Water Resource Management

SUBJECT: Westin Maui Resort (Kaanapali) Master Plan Improvements Early Consultation

FILE NO.: N/A
TMK NO.: (2) 4-4-008:019

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://www.hawaii.gov/dlnr/cwrm.

Our comments related to water resources are checked off below.

☒ 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

☐ 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

☐ 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.

☒ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EPA as having high water efficiency can be found at http://www.epa.gov/watersense/.

☒ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://hawaii.gov/dbedt/czm/initiative/lid.php.

☒ 6. We recommend the use of alternative water sources, wherever practicable.

☒ 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/programs/achieving-efficiency/green-business-program

☒ 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://landscapehawaii.org/_library/documents/lich_irrigation_conservation_bmps.pdf

☐ 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:
Additional information and forms are available at http://hawaii.gov/dlnr/cwrm/info_permits.htm.

☐ 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.

☐ 11. A Well Construction Permit(s) is (are) required before any well construction work begins.

☐ 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 14. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☐ 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.

☐ 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.

☐ 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☐ OTHER:

If there are any questions, please contact Charley Ice at 587-0218.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, III
CHAIRPERSON

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HONOLULU, HAWAII 96809

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RESOURCES

April 3, 2013

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
X Div. of Boating & Ocean Recreation
X Engineering Division
__ Div. of Forestry & Wildlife
__ Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Maui District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Proposed Master Plan Improvements for the Westin Maui Resort & Spa
LOCATION: Lahaina, Island of Maui; TMK: (2) 4-4-008:019
APPLICANT: The Westin Maui Resort & Spa

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 8, 2013.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

(X) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Print Name: Erika T. Mishimoto
Date: 4/17/2013

cc: Central Files

DIVISION OF AQUATIC RESOURCES - MAUI
DEPARTMENT OF LAND & NATURAL RESOURCES
130 Mahalani Street
Wailuku, Hawaii 96793
April 17, 2013

To: Lydia Morikawa, Land Division

From: Skippy Hau, Aquatic Biologist

Subject: Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa
(DAR 4705) (Received April 17, 2013)

Jo-Anne Kushima requested an extension for the comment deadline.

The proposed changes will be beyond the 150-foot setback. We have no objections and our usual comments to minimize drainage runoff and sedimentation from the construction areas should apply.

What is the status of the Ka'anapali shoreline beach restoration? We attended a preliminary meeting to discuss sand replenishment for parts of the Ka'anapali Shoreline about two years ago. There will be a need to address sea-level rise and the possibility of accelerated beach erosion in certain locations. Some of the resorts may need to move their beach activity center and other resort or hotel amenities in the future.

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Russell Tsuji, Administrator
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Kaanapali, Maui, TMK: (2)4-4-008:019

Dear Mr. Tsuji:

Thank you for your Department's comments from the Commission on Water Resource Management and the Division of Aquatic Resources dated April 24, 2013 providing early consultation comments on the proposed Westin Maui Resort & Spa (Westin Maui) Master Plan Improvements. On behalf of the Westin Maui, we provide the following responses to your comments.

Commission on Water Resource Management

1. Recommendation for Coordination with County Department of Water Supply

   Response: Thank you for your comment with regards to incorporation of this project into the County's Water Use and Development Plan. Please note that the Kaanapali Resort area, including the Westin Maui, is serviced by Hawaii Water Service, a private utility.

2. Recommendation for Incorporation of Water Efficient Fixtures and Practices

   Response: The Westin Maui currently has several water efficiency measures in place including installation of new laundry equipment to conserve water and repaired leaks to its pool weir. Additionally, any new water fixtures installed for the proposed improvements will be low-flow fixtures.

MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
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3. Recommendation for Best Management Practices (BMPs) for Stormwater Management

Response: The project will incorporate BMPs during project construction to protect the hydrology in the existing area as noted in your comments. A Preliminary Engineering Report (PER) (including a drainage analysis) will be included in the Draft Environmental Assessment (EA).

4. Recommendation for Alternative Water Sources

Response: The project will install irrigation infrastructure for R-1 water use. Currently there is no R-1 water service to the property and it is our understanding that the source is limited at this time. With the installation of the irrigation infrastructure, the Westin Maui will be ready to receive R-1 water service when it becomes available.

5. Participation in the Hawaii Green Business Program

Response: Thank you for your recommendation on the Hawaii Green Business Program. The Westin Maui currently participates in a number of sustainability programs including: Westin Brand Program-Make a Green Choice for guests to opt to forego housekeeping services saving water and energy, in room recycling program as a waste diversion initiative, efficiency laundering equipment to conserve water, donate leftover food to local pig farmers for waste diversion, smart irrigation system, CFL bulbs in guest rooms. We will review the information on the Hawaii Green Business program.

6. Recommendations on Irrigation Conservation BMPs

Response: Thank you for your comment on the irrigation conservation BMPs endorsed by the Landscape Industry Council of Hawaii. Your comment has been forwarded to the project's landscape architect for review and consideration.

Division of Aquatic Resources

We note your comment that the proposed changes will be beyond the 150-foot shoreline setback area and would like to clarify that there is a portion of the proposed project that is proposed within the shoreline setback area. There are two (2) existing structures within the setback area that are proposed to be demolished. Further, we are

planning to replace a portion of the demolished building area with a deck and are proposing roof structures to shade existing portions of deck area (utilized for restaurant seating) as well as the replacement deck area. As noted above, a PER is being prepared for the project and will be included in the Draft EA. Additionally, the Draft EA will include proposed BMPs to minimize drainage runoff and sedimentation during construction.

With regards to your question on the status of the Kaanapali Beach shoreline restoration project, it is our understanding that there was a pending bill in the State Legislature to fund the studies needed to proceed with the Kaanapali Beach nourishment project. We note your comment with regards to sea level rise and the potential need to move shoreline structures inland in the future. The proposed project will require a Special Management Area Use Permit as well as approval for a Shoreline Setback Variance for the work within the shoreline setback area. We note that the proposed replacement deck will be at grade level and the roof structures will either be open air structures which would not impede shoreline processes or will be attached to the existing building in the area. Additionally, at its closest point, the proposed improvements are located approximately 69 feet away from the shoreline.

Thank you for your participation in the EA process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to you for review and comment.

Very truly yours,

Cheryl K. Okuma
Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Jim Neely and Carlos Rivera, Starwood Hotels & Resorts Worldwide
Larry Cunha, WCIT Architecture
Glenn Kuwaye, Wilson Okamoto Corporation
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APR 23 2013

NEIL ABERCROMBIE
GOVERNOR

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD N. FUCHIGAMI
RANDY GRUNE
JADINE URASAKI

IN REPLY REFER TO:
STP 8.1176

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

April 17, 2013

Ms. Karlynn Fukuda
Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

Subject: Westin Maui Resort and Spa Master Plan Improvements
Early Consultation for Environmental Assessment
TMK: (2) 4-4-008:019

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands the applicant proposes to revitalize its existing facility with improvements to include: restaurant renovations involving demolition of the existing pool bathroom and storage spaces, expansion of the spa, repair/maintenance of existing water features and pools, construction of a new multi level (479 stall) parking garage, expansion of the Convention Hall and shade structures over the paved restaurant area.

The draft environmental assessment (DEA) should discuss and evaluate the project's contribution to the cumulative traffic impacts on State highways facilities in the area.

DOT appreciates the opportunity to provide comments. If there are any questions, including the need to meet with DOT staff, please contact Mr. Garrett Smith of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Glenn M. Okimoto, Ph.D, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019, STP 8.1176

Dear Mr. Okimoto:

Thank you for your letter dated April 17, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan improvements project in Lahaina, Maui. We note that the State Department of Transportation has reviewed the information. On behalf of the Westin Maui, we respond to the comments in your letter.

A traffic impact analysis report is being undertaken for this project. This report will be included in the EA which will discuss and evaluate the proposed project's contribution to the cumulative impacts on the State highways facilities in this area.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Matt Nakamoto, Austin Tsutsumi & Associates, Inc.
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PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD13/6699

April 23, 2013

Ms. Karlynn Fukuda
Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Early Consultation Request for Proposed Mast Plan Improvements for the Westin Maui Resort & Spa, Lahaina, and Maui (TMK (2)4-4-008:019)

Dear Ms. Fukuda:

The Office of Hawaiian Affairs (OHA) is in receipt of your March 27, 2013 request for comments on the above-reference proposed project. We apologize for the slight delay in responding and offer the following comments.

We recommend that a Cultural Impact Assessment (CIA), in accordance with Hawaii Revised Statutes (HRS) 343 be conducted for the project area, to identify any potential impacts to Native Hawaiian traditional cultural practices. We also recommend an Archaeological Inventory Survey (AIS) in accordance with Hawaii Revised Statutes (HRS) Chapter 6E-42 and Hawaii Administrative Rules (HAR) Chapter 13-284-5 and Chapter 13-276. Lahaina is a very significant Native Hawaiian cultural wahi pana.

We recommend you contact and consult with Mr. Ke'eaumoku Kapu who has served on the Maui Cultural Resources Commission, Maui/Lana'i Islands Burial Council and OHA's Native Hawaiian Historic Preservation Council for further information. We look forward to receiving your Environmental Assessment when completed.

Thank you for the opportunity to comment. If you have further questions, please contact Jerry B. Norris, Compliance Specialist at (8089) 594-0227 or at jerryn@oha.org.

'O wau iho no,

Kamana'opono M. Crabbe, Ph.D
Ka Pouhana, Chief Executive Officer

KM:jbn

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Kamana`opono M. Crabbe, Ph.D
Chief Executive Officer
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Kaanapali, Maui, TMK: (2)4-4-008:019

Dear Mr. Crabbe:

Thank you for your Office's comment letter dated April 23, 2013 providing early consultation comments on the proposed Westin Maui Resort & Spa (Westin Maui) Master Plan Improvements. On behalf of the Westin Maui, we provide the following responses to your comments.

A Cultural Impact Assessment (CIA) report was prepared for the proposed project and includes interviews with persons familiar with the Kaanapali Resort and project area. Additionally, an Archaeological Inventory Survey (AIS) was prepared for the proposed project. Both the CIA and AIS will be included in the Draft Environmental Assessment (EA) for your review and information. Additionally, we will consult with Mr. Ke`eaumoku Kapu and the OHA Native Hawaiian Historic Preservation Council for additional insight into the project's historical context.

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Thank you for your participation in the EA process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to you for review and comment.

Very truly yours,

Cheryl K. Okuma
Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Jim Neely and Carlos Rivera, Starwood Hotels & Resorts Worldwide
Tanya Lee-Greig, Cultural Surveys Hawaii
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APR 0 8 2013

ALAN M. ARAKAWA
MAYOR

JEFFREY A. MURRAY
CHIEF

ROBERT M. SHIMADA
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY
FIRE PREVENTION BUREAU

313 MANEA PLACE • WAILUKU, HAWAII 96793
(808) 244-9161 • FAX (808) 244-1363

Date : **April 2, 2013**

To : **Munekiyo & Hiraga , Inc.**
Attn: Karlynn Fukuda
305 High Street, Suite 104
Wailuku, HI 96793

Subject : **Early Consultation request for proposed Master Plan Improvements for the Westin Maui Resort & Spa**
Lahaina, Maui , Hawaii
TMK: (2) 4-4-008:019

Dear Karlynn,

Thank you for allowing the Fire Prevention Bureau the opportunity to comment on the above said project. We have the following comments for you at this time:

- Majority of the comments we will be making will be during the building permit process.

- We ask that all fire protection and fire department access' remain clear and available during demolition and construction. If it cannot be maintained, then an alternate plan must be submitted for our review

- Provide existing fire sprinkler layouts and changes to those systems for us to review.

-Provide existing fire hydrant locations and existing fire alarm plans and any changes to those systems.

If there are any questions, please feel free to contact me by mail or at 808-244-9161 ext. 25.

Sincerely,

Kono Davis
Lieutenant; Fire Prevention Bureau
313 Manea Place
Wailuku, HI 96793

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 26, 2013

Lieutenant Kono Davis
Fire Prevention Bureau
Department of Fire and Public Safety
County of Maui
313 Manea Place
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Lieutenant Davis:

Thank you for your letter dated April 2, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we provide the following response in the order of the comments from the County Department of Fire and Public Safety, Fire Prevention Bureau.

1. Access for the Fire Department and for fire protection will remain clear and available during the demolition and construction phases of this project. An alternate plan for fire access will be submitted to the Fire Prevention Bureau should it become apparent that such access cannot be maintained for the project.

2. Plan layouts that show the existing fire sprinklers and changes made to those systems will be submitted to your office for review.

3. The locations of the existing fire hydrants, existing fire alarm plans and any changes will be submitted to your office for review.

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Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
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DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
HOUSING DIVISION
COUNTY OF MAUI

APR 0 8 2013

ALAN M. ARAKAWA
Mayor
JO-ANN T. RIDAO
Director
JAN SHISHIDO
Deputy Director

35 LUNALILO STREET, SUITE 102 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7351 • FAX (808) 270-6284

April 4, 2013

Ms. Karlynn Fukuda
Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: **Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, Hawaii (TMK): (2)4-4-008:019**

The Department has reviewed the request for Early Consultation for the above subject project. Based on our review, we have determined that the subject project is not subject to Chapter 2.96, Maui County Code. At the present time, the Department has no additional comments to offer.

Please call Mr. Veranio Tongson Jr. of our Housing Division at (808) 270-1741 if you have any questions.

Sincerely,

Wayde T. Oshiro

WAYDE T. OSHIRO
Housing Administrator

cc: Director of Housing and Human Concerns

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Wade T. Oshiro, Housing Administrator
Department of Housing and Human Concerns
County of Maui
35 Lunalilo Street, Suite 102
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Mr. Oshiro:

Thank you for your letter dated April 4, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we note that the County Department of Housing and Human Concerns has determined that the proposed project is not subject to Chapter 2.96 of the Maui County Code and has no additional comments at this time.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
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ALAN M. ARAKAWA
Mayor

GLENN T. CORREA
Director

BRIANNE SAVAGE
Deputy Director

(808) 270-7230
FAX (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

April 4, 2013

Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, Hawai'i TMK (2) 4-4-008:019

Thank you for the opportunity to review and comment on the subject project. The Department of Parks & Recreation has no comments at this time, and looks forward to reviewing the Environmental Assessment when it is available.

Please feel free to contact me or Robert Halvorson, Chief of Planning and Development, at 270-7931, should you have any questions.

Sincerely,

GLENN T. CORREA
Director of Parks & Recreation

c: Robert Halvorson, Chief of Planning and Development

GTC:RH:pt

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Glenn T. Correa, Director
Department of Parks and Recreation
County of Maui
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Mr. Correa:

Thank you for your letter dated April 4, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we note that the County Department of Parks and Recreation reviewed the information and does not have comments at this time.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
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Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director

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COUNTY OF MAUI
DEPARTMENT OF PLANNING

April 9, 2013

Ms. Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: EARLY CONSULTATION FOR PROPOSED MASTER PLAN IMPROVEMENTS FOR THE WESTIN MAUI RESORT & SPA, AT KAANAPALI, MAUI, HAWAII; TMK: (2) 4-4-008:019 (RFC 2013/0049)

The Department of Planning (Department) is in receipt of the above-referenced request for early consultation comments for the proposed master plan improvements for the Westin Maui Resort & Spa. The Department understands the proposed action includes the following:

1. The project as proposed in your letter of March 27, 2013, encompasses (in part) the following activities:

   - Restaurant improvements to encompass the demolition of the existing pool bathrooms and storage spaces;
   - Expansion of the spa within the existing building footprint;
   - Repair work at the existing water features and pools;
   - Repair and maintenance to back of house spaces;
   - Construction of a new 4.5 level parking garage with 479 parking stalls;
   - Expansion of the existing Convention Hall space on the first and second levels; and
   - Construction of shade structures over a newly paved deck area for restaurant seating (portion of area with the Shoreline Setback Area).

2. The proposed renovations include work within the 150-feet Shoreline Setback Area, which requires an Environmental Assessment (EA) or Environmental Impact Statement (EIS), pursuant to Chapter 343.

Based on the foregoing, the Department provides the following comments:

1. The land use designations for the project area are as follows:

   a. State Land Use: Urban

   b. West Maui Community Plan: Hotel and Public Quasi/Public and Open Space

   c. County Zoning: H-2 Hotel

   d. Other: Within the Special Management Area (SMA)

   The above land use designations have not been confirmed by the Department's Zoning Administration and Enforcement Division (ZAED). Please submit a Zoning Confirmation form to ZAED for completion so that zoning information can be included in all forthcoming documents;

2. Submit a Shoreline Setback Determination (SSD) application to confirm the shoreline setback for the property along with a Department of Land and Natural Resources (DLNR) Certified Shoreline Survey as soon as possible;

3. The Department concurs that work within the Shoreline Setback Area (both demolition and construction) is a "trigger" that requires compliance with Chapter 343, Hawaii Revised Statutes, and the submission of an EA or EIS;

4. Submit a Shoreline Setback Variance (SSV) application. Discuss in detail the criteria for approval of a variance as outlined in *Section 12-203-15 Shoreline Rules of the Maui Planning Commission* paying particular attention to why a structure or activity should be granted a variance upon the grounds of hardship. Detailed diagrams of exact work in the Shoreline Setback Area are required including proposed paving materials, shade structure design, square footage and use of these areas. A simulated aerial view along with eye level views should be incorporated into the application to determine visual impacts from surrounding locations;

5. Submit a SMA Use Permit (SM1) application;

6. The project will be reviewed by the Maui County Urban Design Review Board (UDRB). Articulation and detail on the 4.5 story parking structure and Convention Hall expansion will be a key component of project design. Mechanical equipment, such as compressors, should be designed into the project structures to be limited from public view. Discuss how the new structure architecture serves as a bridge to the existing buildings;

7. Archaeological and cultural impacts should be discussed in detail. Consultation with the DLNR, the Cultural Resources Commission, and the Maui/Lanai Island Burial Council should be pursued as applicable;

8. A detailed history of the project site should be provided in the Environmental documents;

9. Detailed drainage and run-off impacts to nearshore waters should be discussed in the Environmental and SMA documents;

10. Submit a comprehensive parking analysis looking at requirements of the property as a whole, including guest rooms, restaurant space, convention space, etc.;

11. Discuss the incorporation of sustainable energy practices in the construction of the new buildings, including but not limited to a potential roof solar photovoltaic array over the top floor of the parking garage similar to that built adjacent to the Kihei Community Center. Such an array would provide both shade for parked cars on the upper level, and provide a renewable solar energy source;

12. Discuss dedicated beach parking provided by the existing hotel, and, show current dedicated beach parking on a site plan, with parking stalls highlighted. Also, discuss proposed additional beach parking that is to be provided as a result of the proposed Convention Hall and parking expansion project;

13. As the project proposes an increase in Convention Hall space, traffic and impact studies to the surrounding neighborhoods and streets will be required in the environmental and shoreline management area documents;

14. Address how this proposed project will protect scenic resources and protect public views to the mountains and the ocean. These should be addressed through site sections, photo simulations, and other appropriate modalities to evaluate the impacts of a 4.5 story parking structure on the surrounding environment;

15. The project is located within the West Maui Community Plan area. Address the project's consistency with the applicable goals, objectives, and policies of the West Maui Community Plan; and

16. Address the project's consistency with the Hawaii State Plan, New Day Comprehensive Plan, State Functional Plans, Maui Countywide Policy Plan, and Maui Island Plan.

Thank you for your cooperation. This list is not meant to be all inclusive with requirements for this permit. Should you require further clarification, please contact Staff Planner Kurt Wollenhaupt at kurt.wollenhaupt@mauicounty.gov or by phone at (808) 270-1789.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

xc: John F. Summers, Planning Program Administrator (PDF)
Ann T. Cua, Current Planning Supervisor (PDF)
Kurt F. Wollenhaupt, Staff Planner (PDF)
Maui Planning Commission
Department of Land & Natural Resources (DLNR)
Gregg Lundberg, General Manager, Westin Maui Resort & Spa
Project File
General File

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MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 27, 2013

William R. Spence, Director
County of Maui
Department of Planning
2200 Main High Street, Suite 315
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Kaanapali, Maui, TMK: (2)4-4-008:019, (RFC 2013/0049)

Dear Mr. Spence:

Thank you for your Department's letter dated April 9, 2013 providing early consultation comments on the proposed Westin Maui Resort & Spa Master (Westin Maui) Plan Improvements. As noted in our request for early consultation comments, the project is proposing work within the shoreline setback area for demolition and new activities. Additionally, since the early consultation letter was sent out for review and comments, it has been determined that an existing County of Maui sewer line within the property, will need to be relocated. A Chapter 343, Hawaii Revised Statutes (HRS), Environmental Assessment (EA) as well as a Special Management Area (SMA) Use Permit and Shoreline Setback Variance (SSV) applications are being prepared for the project.

We would like to provide responses to your comments on the project. Responses are provided in the same order as your letter.

1. Existing Land Use Designations

   Response: Thank you for your confirmation of the existing land use designations for TMK (2)4-4-008:019 (Parcel 19).

2. Shoreline Setback Determination application

   Response: Based on previous permitting at the Westin Maui, it is our understanding that the shoreline setback area for Parcel 19 is 150 feet. As this is the maximum shoreline setback area, we are not

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anticipating the submittal of a shoreline setback determination application. A shoreline survey has been completed for Parcel 19 and is being submitted to the Department of Land and Natural Resources (DLNR) for review and approval.

3. Work Within Shoreline Setback Area

Response: Thank you for your comments regarding the Chapter 343 HRS compliance requirements.

4. Submittal of Shoreline Setback Variance Application

Response: Thank you for your comment regarding the requirement of the SSV for the proposed activities within the shoreline setback area. It is noted that on February 15, 2000, the Planning Department granted a Shoreline Setback approval and Special Management Area Minor Permit approval for the Westin Maui's improvements located within the 150 shoreline set back area and mauka of the existing beach walkway. (SM2 2000/0010)(SSA 2000/0002). See **Attachment "1".**

In 2009, the Westin Maui Resort & Spa received and EA Exemption, SMA Exemption approval and Shoreline Setback approval (EAE 2009/009, SM5 2009/0081 and SSA 2008/0041) from the Department of Planning for the replacement of the decking area around the pool and other adjacent areas, including the restaurant seating. See **Attachment "2"**.

The proposed improvements includes the demolition of existing water feature, restroom and storage building and removal of a man-made mound within the shoreline set back area. Approximately 2,300 sq. ft. of existing structures will be removed from the shoreline setback area. There will be a net gain of hardened area of approximately 653 sq. ft. in the shoreline setback area. The installation of a deck area and approximately 4,120 sq. ft. roof structure near the Relish Restaurant will replace a portion of the demolished elements. The existing earth mound screens the restroom/storage facility located on the northwest portion of the property.

It is noted that the Draft EA will serve as the technical supporting document for the SMA and SSV applications. The information on the proposed paving material and shade structure design will be

included in the document for the Department's review. Additionally, justification for the granting of the variance will be provided in the EA document.

5. Submittal of SMA Use Permit Application

Response: A SMA Use Permit application for the proposed project will be submitted to the Planning Department for review and processing.

6. Urban Design Review Board Review

Response: Thank you for the information regarding the Urban Design Review Board review of the project. We will work with the County Planner assigned to address the items noted in your comments as the project proceeds through the permitting process.

7. Archaeological and Cultural Impacts

Response: An Archaeological Inventory Survey (AIS) report and a Cultural Impact Assessment were completed for the proposed project and will be included in the Draft EA. The AIS report will be submitted to the DLNR, State Historic Preservation Division (SHPD) for review and approval. Additionally, based on the recommendations in the AIS, an archaeological monitoring plan will be prepared and submitted to SHPD for review and approval. Should human remains be discovered during project construction, consultation with agencies, in accordance with SHPD requirements, will be undertaken.

8. Project Site History

Response: The Draft EA will contain a history of the project site as noted in your comments. Additionally, the AIS report also includes historical information on the Kaanapali Resort as well as the larger West Maui area.

9. Drainage and Runoff Impacts

Response: A Preliminary Engineering Report (PER), including a drainage study, has been prepared for the project. The PER and an analysis of the potential impacts and mitigation measures for the project area will be included in the Draft EA.

10. Comprehensive Parking Analysis

Response: A comprehensive parking analysis for the existing Westin Maui was approved by the Planning Department in January 2013, in association with an Off-Site Parking request. A parking analysis for the proposed improvements will be prepared and submitted to the Planning Department.

11. Sustainable Energy Practices

Response: The Draft EA will include a section on existing and proposed sustainable energy practices for the Westin Maui. While installation of Photovoltaic panels on the top level of the parking garage are not proposed as part of the master plan improvements, there are other sustainable energy measures which the Westin Maui has currently incorporated into their operations and will be incorporating additional measures in the future.

12. Beach Parking

Response: The Draft EA will include a discussion about the existing beach parking provided by the Westin Maui and the proposed additional stalls.

13. Traffic Impact Assessment

Response: A Traffic Impact Assessment Report (TIAR) was prepared for the proposed project and will be included in the Draft EA. Preliminarily, the TIAR found that no new roadway improvements would be required as the proposed improvements would generally provide for enhancements to the existing facilities at the Westin Maui.

14. Scenic Resources and Views

Response: The Draft EA includes a section regarding scenic and open space views for the Westin Maui, relative to the proposed improvements. We note that as the proposed parking garage is located on the mauka (east) portion of the property, there are no anticipated impacts on views to the shoreline as the existing hotel building is located makai (west) of the proposed parking structure. Photo

analysis and renderings will also be included in the Draft EA document.

15. West Maui Community Plan

Response: The Draft EA includes an analysis of the proposed project relative to the plans, polices and controls for the State Land Use, Hawaii State Plan, County of Maui General Plan (including Maui Island Plan), the West Maui Community Plan and County of Maui zoning.

16. Hawaii State Plan and New Day Plan

Response: Please see our response to the previous comment. Additionally, we will review the New Day Comprehensive Plan for applicability to the proposed project and include the analysis in the Draft EA.

Thank you for your participation in the EA process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be included in the submittal to the Planning Department for the SMA and SSV applications. We look forward to working with you and your staff on this project.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma
Senior Associate

CKO:la
Attachment
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Jim Neely and Carlos Rivera, Starwood Hotels & Resorts Worldwide
Larry Cunha, WCIT Architecture
Glenn Kuyawe, Wilson Okamoto Corporation
Matt Nakamoto, Austin Tsutsumi & Associates, Inc.
Randall Sakumoto, McCorriston Miller Mukai and McKinnon LLP
K:\DATA\Starwood\Westin MP\ECL Responses\DP.ltr.docx

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 15, 2000

Mr. Edward K. Sowers
Westin Maui Hotel
2365 Kaanapali Parkway
Lahaina, Hawaii 96761

Dear Mr. Sowers:

Re: Special Management Area Assessment/Determination, and Shoreline Setback Approval for the Proposed Construction of Americans with Disabilities Act (ADA) Compliant Walkway Improvements and a New Bridge from the Beach Walkway to the Sound of the Falls Restaurant at the Westin Maui Hotel at TMK: 4-4-008:Por. of 19, Kaanapali, Maui, Hawaii (SM2 2000/0010) (SSA 2000/0002)

The Maui Planning Department (Department) is in receipt of your applications, dated February 7, 2000, requesting approval of ADA compliant walkway improvements for the Sound of the Falls Restaurant at the Westin Maui Hotel. The Department notes that the proposed improvements are located within the 150 ft. shoreline setback area and are limited to public walkways from the existing beach walkway and a new bridge over the existing pond to serve as a new entrance to the restaurant. Further, all work is ~~makai~~ mauka of the existing beach walkway.

Pursuant to Chapter 343, Environmental Impact Statements, Hawaii Revised Statutes, the work is limited to "minor alterations in the condition of land, water or vegetation" and "construction and placement of minor structures accessory to existing facilities," and as such, qualifies as an exempt class of action which does not have any cumulative significant impact.

Pursuant to Section 12-5-11(e)(3) of the Shoreline Setback Rules of the Maui Planning Commission, the proposed improvements qualify as "paved walkways for public access" which do not affect beach processes, do not artificially fix the shoreline, and do not interfere with public access or public views to and along the shoreline and are hereby determined to constitute a minor structure.

ATTACHMENT "1"

Further, pursuant to Sections 12-202-12 and 12-202-14 of the Special Management Area Rules of the Maui Planning Commission, a determination has been made relative to the above project that:

1. Said project is a development;

2. Said project has a valuation not in excess of $125,000.00 (Valuation: $100,000.00);

3. Said project has no significant adverse environmental or ecological effect taking into account potential cumulative effects; and

4. Said project is consistent with the objectives, policies, and Special Management Area guidelines set forth in the Hawaii Revised Statutes (HRS), Chapter 205-A, and is consistent with the County General Plan and Zoning.

In consideration of the above determinations, you are hereby granted a Shoreline Setback Approval and Special Management Area Minor Permit Approval, subject to the following conditions:

1. That construction shall be in accordance with plans received on February 7, 2000.

2. That a building permit shall be obtained prior to the initiation of construction (if applicable).

3. That work within the minimum 40 ft. setback area shall be limited to public access walkways and landscape planting and irrigation.

4. That appropriate measures shall be taken to mitigate the short-term and long-term impacts of the project relative to soil erosion from wind, rain, and ambient noise levels.

5. That construction shall be initiated by August 30, 2000, and shall be completed within one (1) year of said initiation.

6. That full compliance with all other applicable governmental requirements shall be rendered.

Thank you for your cooperation. If additional clarification is required, please contact Ms. Colleen Suyama, Staff Planner, of this office at 270-7735.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:CMS:cmb

c: Clayton Yoshida, AICP, Deputy Director of Planning
Aaron Shinmoto, Planning Program Administrator (2)
Colleen Suyama, Staff Planner
Milton Arakawa, Munekiyo, Arakawa & Hiraga, Inc.
Greg Bayless, Bayless Architects, Inc.
LUCA (2)
DLNR, Maui
Office of Planning
00/SM2 Minor Permit File
00/SSA File
00/CZM File
General File
(S:\planning\westinfa)

CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

KATHLEEN ROSS AOKI
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 18, 2009

Mr. Kyle Ginoza
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Ginoza:

SUBJECT: SPECIAL MANAGEMENT AREA (SMA) ASSESSMENT AND SHORELINE SETBACK APPROVAL ASSESSMENT FOR POOL DECK RENOVATION AT THE WESTIN MAUI RESORT & SPA, KA'ANAPALI, ISLAND OF MAUI, HAWAII, TMK: (2) 4-4-008:019 (SMX 2008/0417) (SSA 2008/0041) (SM5 2009/0081) (EAE 2009/0009)

This letter is in response to your Special Management Area Assessment Use Permit Application and Shoreline Setback Assessment Application received on September 18, 2008, for the subject permits.

The proposed actions at the Westin Maui Resort & Spa property, which is located in the Ka`anapali Resort on Maui, is to complete various repairs and maintenance for approximately 50,000 square feet of existing flagstone floor surface in the pool and lanai areas with repairs consisting of new flagstone or other hard surface. In addition, new utility lines will be installed to supply tiki torches in the pool area under portions of the flagstone floor surface prior to repair. The project area is a portion of the resort, which contains the pool and lanai areas, and which is located within the County's Special Management Area (SMA). The coastline in the vicinity of the project area is a sandy beach (Ka`anapali Beach). The Department acknowledges that a portion of the proposed scope of work is located within the Shoreline Setback Area.

In accordance with the *Special Management Area Rules for the Maui Planning Commission* (SMA Rules), Sections 12-202-12 and 12-202-14, the *Shoreline Rules for the Maui Planning Commission, as amended* (Shoreline Rules), Chapter 12-203, a determination has been made relative to the above project that:

1. The project has a valuation greater than $125,000.00; **(Valuation: $3,890,000.00)**

2. Under the SMA Rules, the proposed action is considered "Repair, maintenance or interior alterations to existing structures";

ATTACHMENT "2"

3. The project is not a development, according to Section 205A-22, HRS, and is exempt from the SMA rules, provided the use, activity, or operation does not have a cumulative impact or significant environmental or ecological effect on the Special Management Area;

4. Appropriate Best Management Practices will be practiced during the repairs to safeguard against any construction debris or runoff from entering the ocean and to preserve and protect the natural resources of the coastal zone;

5. The subject property is an improved resort/hotel property located in an area of existing urban development. There are no wetlands on the subject property, nor are there any important habitats or cultural resources. The project area has been substantially altered by its development as a resort; the proposed action represents minor, maintenance-oriented work to the resort. An Archaeological Monitoring Plan for the project was submitted to the State Historic Preservation Division (SHPD) and accepted on September 17, 2008, Log No.: 2008.3848, Dc. No.: 0809PC20 Archaeology;

6. The proposed action will not result in cumulative impacts to the environment, nor will it involve a commitment to larger actions. The proposed action represents improvements to facilities at an existing resort property. The proposed action will not place new demands or have an adverse impact upon existing infrastructure and public services;

7. The proposed action is not contrary to the Hawai'i State Plan, the Maui County General Plan, or the West Maui Community Plan. The subject property is in the State "Urban" district and is designated for "Hotel" use by the West Maui Community Plan and for "H-2, Hotel" use by Maui County zoning. As a result, the proposed action is permitted by existing land use plans, policies, and controls;

8. The project site is located primarily within the limits of Flood Zone C, denoting areas of minimal flooding, with a small portion of the site located in Flood Zone A4, with a base flood elevation of 6 feet. All construction activities will be subject to full compliance with Chapter 19.62 Flood Hazard Areas of the Maui County Code. It is noted that the proposed actions do not involve improvements to habitable structures;

9. A portion of the proposed action is located within the shoreline setback area. The proposed improvements are permitted uses within the shoreline setback area. A State Certified Shoreline Survey dated October 18, 2008 has been submitted as part of the Application. Adverse impacts to environmentally sensitive areas are not anticipated; and

10. The project is consistent with the objectives, policies, and Special Management Area guidelines set forth in the Hawaii Revised Statutes (HRS), Chapter 205-A, and is consistent with the County General Plan and Zoning, and the West Maui Community Plan.

The proposed activities are exempt from Chapter 343 rules for preparation of an environmental assessment, under the authority of Chapter 343, HRS, and Chapter 11-200 Hawaii Administrative Rules (HAR), under Exemption Class 2, Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced.

In light of the above determinations, you are hereby granted an Environmental Assessment Exemption.

In light of the above determinations, you are hereby granted a Special Management Area Exemption (SM5) for the proposed actions.

Furthermore, the Department has determined that a portion of the work will take place in the Shoreline Setback Area.

All proposed structures and activities within the Shoreline Setback Area are subject to the restrictions provided for in the *Shoreline Rules for the Maui Planning Commission*, Section 12-203-12, and are limited to only activities and structures permitted under the Shoreline Rules that do not affect beach processes, do not artificially fix the shoreline, and do not interfere with public access or public views to and along the shoreline, including a structure that has been legally permitted, and is the subject of repairs that are valued by a licensed professional engineer or architect at less than 50 percent of the current replacement cost of the structure and which neither enlarges the structure nor intensifies the use of the structure.

The project valuation is estimated at $3,985,000.00. The equivalent cost to replace the existing pool and appurtenant structures is quoted at around $21,000,000.00. Thus, the repairs are less the 50 percent of the pool construction replacement costs.

In light of the above determinations, you are hereby granted a Shoreline Setback Approval.

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner Jim Buika via email at james.buika@mauicounty.gov or by phone at 270-6271.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

For: JEFFREY S. HUNT, AICP
Planning Director

xc: Aaron H. Shinmoto, PE, Planning Program Administrator
James A. Buika, Staff Planner
Project File
SM5 file
EAE file
SSA file
General File

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SPECIAL MANAGEMENT AREA ASSESSMENT
Westin Maui Resort Pool Repairs and Maintenance
TMK (2) 4-4-008:019
SMX 20080417 SSA 20080041

DESCRIPTION OF PROPOSED ACTION

Describe Proposed Action:

The applicant proposes various repair and maintenance actions at The Westin Maui Resort & Spa property, which is located in the Ka`anapali Resort on Maui. The project area is a portion of the resort, which contains the pool and lana`i areas, and which is located within the County's Special Management Area (SMA). The property is identified as TMK (2) 4-4-008:019.

The project scope meets the criteria for actions exempt from SMA rules as being considered not "development".

The approximately 50,000 square foot, existing flagstone floor surface in the pool and lana`i areas of the resort will be repaired with new flagstone or other hard surface. This action qualifies for the SMA exemption class related to "Repair, maintenance, or interior alterations to existing structures".

In addition, new utility lines will be installed to supply tiki torches in the pool area under portions of the flagstone floor surface prior to repair. It is anticipated that this action will qualify for the SMA exemption class related to "Installation of underground utility lines and appurtenant aboveground fixtures less than four feet in height along existing corridors".

The project valuation is estimated at $3,985,000. The equivalent cost to replace the existing pool is quoted at around $21,000,000. Thus, the repairs are less the 50% of the pool construction costs.

The environmental setting of the property (description of property):

The Westin Maui Resort & Spa is located at 2365 Ka`anapali Parkway and consists of approximately 750 hotel rooms and related resort amenities. The project site is located on the makai portion of the property. The subject property is identified by Tax Map Key Number (2) 4-4-008:019.

(A) Affects natural or cultural resources (i.e., historic site, excavation on vacant land):

There are no known significant environmental resources on the subject property. The subject property is an improved resort/hotel property located in an area of existing urban development. There are no wetlands on the subject property, nor are there any important habitats or cultural resources. The project area has been substantially altered by its development as a resort; the proposed action represents minor, maintenance-oriented work to the resort. **An Archaeological Monitoring Plan for the project was submitted to the State Historic Preservation Division (SHPD) and accepted on September 17, 2008, Log No.: 2008.3848, Dc. No.: 0809PC20 Archaeology.**

(B) Curtails the range of beneficial uses of the environment:

The proposed action involves a portion of an existing resort property and is limited in size and scope. The proposed action will not impact a scenic view corridor, nor does the project area serve as habitat for rare, threatened, or endangered species of plants and wildlife. The proposed action will not impact environmentally sensitive features, such as wetlands or streams, nor will it create long-term adverse effects upon air and water quality or ambient noise conditions. In this regard, the proposed action does not significantly curtail the beneficial uses of the environment.

(C) Conflicts with the county's or the state's long-term environmental policies or goals (i.e. State Plan, County General Plan, and Community Plan):

The proposed renovations at the subject property do not represent a land use that conflicts with the environmental goals and policies of the Hawai`i State Plan, the Maui County General Plan, and the West Maui Community Plan. The community plan designates the property for "Hotel" use, while Maui County zoning designates the site for "H-2, Hotel" district use. The subject property will continue to be used and operated as a visitor-oriented, hotel resort.

(D) Affects the economic or social welfare and activities of the community, county, or state:

In the short term, the proposed action will provide economic benefits through construction and construction-related employment. Over the long term, the proposed action is intended to enhance the visitor experience and maintain the resort's competitiveness in West Maui's visitor market. No substantial economic or social welfare impacts to the community, County, or State are anticipated.

(E) Involves secondary impacts, such as population changes (i.e. increase/decrease) and increased effects on public facilities, streets, drainage, sewage, and water systems, and pedestrian walkways (i.e. increased demands and deficiencies):

As an improvement to an existing hotel resort use, the proposed action will not have a substantial impact upon the population, nor will it result in any increased demand

or have an adverse effect upon existing utilities, infrastructure, or public services. The proposed action will not alter or extend the service area limits for emergency services, such as police and fire protection. No secondary impacts are anticipated to occur as a result of the proposed action.

(F) **By itself has no significant adverse effects but cumulatively has considerable effect upon the environment (i.e. increased traffic and deficiencies in services) or involves a commitment for larger actions (i.e. more public infrastructure, such as, roads, waterlines, sewers, etc.):**

The proposed action will not result in cumulative impacts to the environment, nor will it involve a commitment to larger actions. The proposed action represents improvements to facilities at an existing resort property. The proposed action will not place new demands or have an adverse impact upon existing infrastructure and public services.

(G) **Affects a rare, threatened, or endangered species of animal or plant, or its habitat (i.e. wetlands, natural area reserve, refuge):**

There are no known rare, threatened, or endangered species of plant or animal life on the subject property, nor are there any wetlands, water bodies, or other critical habitats affected by the proposed action. Consequently, the proposed action is not expected to have an adverse impact on wildlife and sensitive environmental habitats.

(H) **Is contrary to the state plan, county's general plan, appropriate community plans, zoning and subdivision ordinances:**

The proposed action is not contrary to the Hawai`i State Plan, the Maui County General Plan, or the West Maui Community Plan. The subject property is in the State "Urban" district and is designated for "Hotel" use by the West Maui Community Plan and for "H-2, Hotel" use by Maui County zoning. As a result, the proposed action is permitted by existing land use plans, policies, and controls.

(I) **Affects air or water quality or ambient noise levels (i.e. construction impacts):**

Limited short-term construction-related noise and air quality impacts are anticipated. Appropriate Best Management Practices will be implemented to ensure that construction-related impacts are minimized. In the long term, the proposed action is not anticipated to result in any significant air or water quality impacts, nor is it expected to adversely impact ambient noise levels.

(J) **Located in and does it affect an environmentally sensitive area, such as flood plain, shoreline, dunes, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh waters, or coastal waters:**

The project site is located primarily within the limits of Flood Zone C, denoting areas

of minimal flooding, with a small portion of the site located in Flood Zone A4, with a base flood elevation of 6 feet. All construction activities will be subject to full compliance with Chapter 19.62 Flood Hazard Areas of the Maui County Code. It is noted that the proposed actions do not involve improvements to habitable structures.

The project site is also located within the shoreline setback area. The proposed improvements are permitted uses within the shoreline setback area. A State Certified Shoreline Survey data October 18, 2008. Adverse impacts to environmentally sensitive areas are not anticipated.

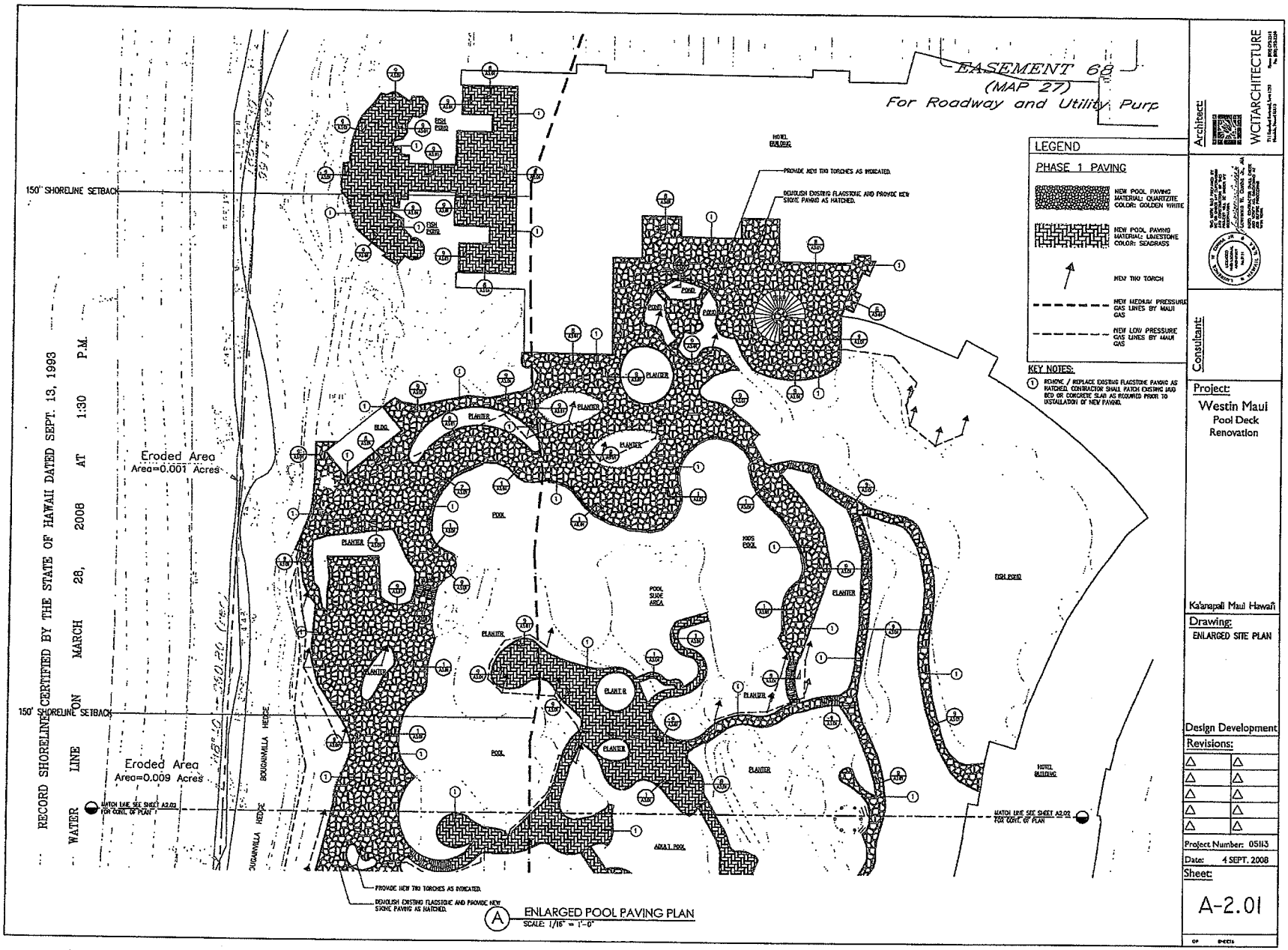
(K) Alters natural land forms (i.e. cut and fill, retaining walls) and existing public views to and along the shoreline:

The proposed improvements will not alter existing natural land forms. The drainage pattern of the site will remain unchanged. As a result, no adverse impacts to drainage conditions are anticipated. Moreover, since the proposed renovations affect existing elements on the resort grounds, they are not expected to significantly alter existing public views to and along the shoreline.

(L) Is contrary to the objectives and policies of chapter 205A, HRS:

The proposed action is not contrary to the objectives and policies of Chapter 205A, Hawai'i Revised Statutes, relating to coastal zone management (CZM). Recreational, historic, scenic, and marine resources will not be adversely impacted by the proposed project. In addition, coastal and beach processes will not be affected. The proposed action will not adversely impact local economic conditions. The proposed action is also not contrary to the CZM objectives of public awareness, education, and participation. Based on the size and scope of the proposed action, criteria for public participation and review are being accomplished through the SMA Assessment application process.

Planner, Jim Buika, 03.11.09 _____



Architect: WCITARCHITECTURE

Consultant:

Project:
Westin Maui
Pool Deck
Renovation

Ka'anapali Maui Hawai'i

Drawing:
ENLARGED SITE PLAN

Design Development

Revisions:

△	△
△	△
△	△
△	△
△	△

Project Number: 0513

Date: 4 SEPT. 2008

Sheet:
A-2.01

APR 0 4 2013

POLICE DEPARTMENT

COUNTY OF MAUI

ALAN M. ARAKAWA
MAYOR

OUR REFERENCE

YOUR REFERENCE

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

April 1, 2013

Ms. Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High St., Ste. 104
Wailuku, HI 96793

RE: Early Consultation Request for Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui
TMK: (2) 4-4-008:019

Dear Ms. Fukuda:

This is in response to your letter dated March 27, 2013, requesting our review and comments for the above-referenced proposed project on behalf of the applicant. We will review and comment on requests from the Department of Planning only and not from private firms. Please direct your request to the Department of Planning for appropriate action.

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

GARY A. YABUTA
Chief of Police

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Gary A. Yabuta, Chief of Police
Police Department
County of Maui
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Mr. Yabuta:

Thank you for your letter dated April 1, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan improvements project in Lahaina, Maui. We note the Police Department comment that the early consultation request for this project be sent to the Department of Planning for appropriate action. We will anticipate comments from the Police Department during the Draft EA and Special Management Area Use Permit application review.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLP
K:\DATA\Starwood\Westin MP\ECL Responses\MPD.ltr.docx

MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
PH: (808)244-2015 FAX: (808)244-8729
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APR 18 2013

ALAN M. ARAKAWA
Mayor

DAVID C. GOODE
Director

ROWENA M. DAGDAG-ANDAYA
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

GLEN A. UENO, P.E., Interim
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

April 15, 2013

Ms. Karlynn Fukuda
Executive Vice President
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: EARLY CONSULTATION REQUEST FOR PROPOSED MASTER PLAN IMPROVEMENTS FOR THE WESTIN MAUI RESORT & SPA; TMK: (2) 4-4-008:019

We reviewed the subject application and have the following comments:

1. A review of our records for this parcel indicate that the following Plan Review Waivers are open. Please assist us in closing out the following Plan Review Waivers: B93/2548 for a bellman's station and B96/2142 for a waiter's station.

2. According to hotel management, Building Permit No. B2012/1093 is currently inactive. Please contact us to request an extension of this permit.

Please call Rowena M. Dagdag-Andaya at 270-7845 if you have any questions regarding this letter.

Sincerely,

DAVID C. GOODE
Director of Public Works

DCG:RMDA:ls
xc: Highways Division
Engineering Division
S:\LUCA\CZM\prop_master_plan_improv_westin_maui_resort_spa_ec_44008019_ls.wpd

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

David C. Goode, Director
Department of Public Works
County of Maui
200 South High Street, Room
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Mr. Goode:

Thank you for your letter dated April 15, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan improvements project in Lahaina, Maui. On behalf of Westin Maui Resort & Spa, we provide the following response to the Department of Public Work's comments.

Westin Maui Resort & Spa will coordinate with the Department of Public Works in order to close the Plan Review Waivers for B93/2548 (bellman's station) and B96/2142 (waiter's station) and request an extension of Building Permit No. B2012/1093.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Jim Neely and Carlos Rivera, Starwood Hotels & Resorts Worldwide

MAUI K:\DATA\Starwood\Westin MP\ECL Responses\DPW.ltr.docx
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KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director

MAY 13 2013

TRACY TAKAMINE, P.E.
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

May 8, 2013

Ms. Karlynn Fukuda
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: WESTIN MAUI RESORT & SPA
EARLY CONSULTATION FOR MASTER PLAN IMPROVEMENTS
TMK (2) 4-4-008:019, LAHAINA

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:

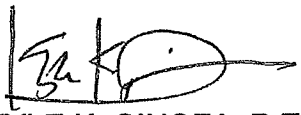
   a. Include a plan for construction waste management.

2. Wastewater Reclamation Division (WWRD) comments:

   a. Although wastewater system capacity is currently available as of 5/8/2013, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
   b. Wastewater contribution calculations are required before building permit is issued.
   c. Developer is not required to pay assessment fees for this area at the current time.
   d. Show or list minimum slope of new sewer laterals.
   e. Plans shall show all of the existing sewer service laterals for the subject property.
   f. Plans shall show the existing property sewer service manhole near the property line for each of the existing sewer service laterals. If a property sewer service manhole does not exist, one shall be installed.
   g. Kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens etc.)

If you have any questions regarding this memorandum, please contact Michael Miyamoto at 270-8230.

Sincerely,



KYLE K. GINOZA, P.E.
Director of Environmental Management

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Kyle K. Ginoza, P.E., Director
Department of Environmental Management
County of Maui
2200 Main Street, Suite 100
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Kaanapali, Maui, TMK: (2)4-4-008:019

Dear Mr. Ginoza:

Thank you for your letter dated May 8, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa (Westin Maui) Master Plan Improvements project in Kaanapali, Maui. On behalf of the Westin Maui, we provide the following responses in the order of the County Department of Environmental Management's comments.

Solid Waste Division Comments

Response: The Westin Maui will have its contractor, once selected, prepare a construction waste management plan. Said plan will be submitted to the Solid Waste Division.

Wastewater Reclamation Division (WWRD) Comments

Response:

1. The Westin Maui acknowledges that a determination by WWRD as to wastewater system capacity will be made at the time of building permit issuance for this proposed project.

2. Wastewater contribution calculations for this project will be sent to WWRD.

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3. The Westin Maui acknowledges that at the current time there is no requirement to pay wastewater assessment fees for this project.

4. Information as to the minimum slope of new sewer laterals will be provided to WWRD.

5. Development plans for this project will show all existing sewer service laterals.

6. Development plans will show the existing property sewer service manhole near the property line for each of the existing sewer service laterals. If a property sewer service manhole does not exist, the applicant will install a manhole.

7. Kitchen facilities in the proposed project will follow pre-treatment requirements, such as grease interceptors, sample boxes, and screens.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
Larry Cunha, WCIT Architecture
Glenn Kuwaye, Wilson Okamoto Corporation
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ALAN M. ARAKAWA
Mayor

JO ANNE JOHNSON-WINER
Director
MARC I. TAKAMORI
Deputy Director
Telephone (808) 270-7511

APR 19 2013

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

April 15, 2013

Ms. Karlynn Fukuda
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Subject: Proposed Improvements for the Westin Maui Resort and Spa

Dear Ms. Fukuda,

Thank you for the opportunity to comment on this project. We have no comments to make at this time.

Please feel free to contact me if you have any questions.

Sincerely,

Jo Anne Johnson Winer
Director

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

December 24, 2013

Jo Anne Johnson Winer, Director
Department of Transportation
County of Maui
200 South High Street
Wailuku, Hawaii 96793-2155

SUBJECT: Early Consultation Request for the Proposed Master Plan Improvements for the Westin Maui Resort & Spa, Lahaina, Maui, TMK: (2) 4-4-008:019

Dear Ms. Winer:

Thank you for your letter dated April 15, 2013 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Westin Maui Resort & Spa Master Plan Improvements project in Lahaina, Maui. On behalf of the Westin Maui Resort & Spa, we note that the County Department of Transportation has reviewed the information and does not have comments at this time.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA and a copy of the Draft EA will be sent to your office for further review and comment.

Very truly yours,

Cheryl K. Okuma

Cheryl K. Okuma, Senior Associate

CKO:la
cc: Gregg Lundberg, General Manager, Westin Maui LLC
K:\DATA\Starwood\Westin MP\ECL Responses\DOT.ltr.docx

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X. REFERENCES

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APPENDIX A.

Preliminary Engineering Report

Preliminary Engineering Report
Civil Infrastructure

Westin Maui Resort Renovation

Ka`anapali, Maui, Hawaii
Tax Map Key: 4-4-008:019

Prepared for:

WCIT Architecture
725 Kapiolani Boulevard Suite C400
Honolulu, Hawaii 96813

Prepared by:

Wilson Okamoto Corporation
Engineers and Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Job No. 8405-01

May 2013

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EXECUTIVE SUMMARY

A preliminary engineering assessment of the proposed Westin Maui Resort renovation project was conducted to review the site infrastructure and utilities systems, identify possible constraints to development, and to describe proposed improvements to sanitary sewer, water systems, storm drainage, roadway, parking, electrical, telephone, cable, and data communications systems.

Sewer: Based on discussions with the Maui County Wastewater Reclamation Division, at this time the County of Maui sewer system is able to support the increased wastewater flow generated from the renovated resort. Based on the proposed average daily sewer flow of 354,490 gallons per day (gpd), the projected 12,150 gpd increase would equate to an increase of about 3.5% over existing. The on-site sewer collection system will connect to the existing County sewer system along the service driveway between the resort and Whaler's Village and along the project frontage along Ka'anapali Parkway. An existing County sewerline and easement cutting through the southeast corner of the resort will need to be relocated to avoid conflict with the proposed parking structure. In addition, the County will require the resort to construct private sewer manholes or cleanouts on the existing laterals immediately outside to the existing easement along the driveway between the resort and Whalers Village in order to meet current County standards.

Water: Per discussions with Hawaii Water Service, which owns and operates the private water system that serves Ka'anapali and other parts of West Maui, HWS feels as if potable water is available from its existing water system located in the project vicinity to accommodate the renovated resort. The projected water demand for the resort after the renovation is approximately 275,750 gallons per day (gpd) for the hotel and supporting amenities, an increase of 2,570 gallons or about 1% more than the existing water demand. The existing 8-inch waterline within the south parking lot will need to be relocated to avoid conflict with the proposed parking garage. The waterline is believed to be owned by HWS.

Site Grading, Flooding, and Storm Drainage: There will be no increase in the proposed runoff volume entering the Ka'anapali Parkway drainage system as compared to the

existing runoff volume. The existing site has elevations ranging from 6.5 feet above mean sea level (msl) to approximately 34.5 feet msl. Runoff generated on the makai side of the resort will continue to be directed to on-site drywells and/or underground storage piping for percolation into the ground. Runoff generated on the mauka portion of the resort will be directed to the existing off-site drainage system along Ka'anapali Parkway.

Roadway and Parking System: Access to the resort after the renovation project shall remain via the existing driveway entrances along Ka'anapali Parkway. The resort's main driveway leading to the porte cochere will remain along with the existing bus tour driveway and the service driveway between the resort and the neighboring Whaler's Village to the north. Parking for the resort after the project will include 913 total parking stalls, with the majority within the proposed onsite parking structure.

Electrical, Telephone, Cable and Data Systems: Maui Electric Company (MECO) has been contacted regarding its existing infrastructure's ability to support the proposed renovation project. MECO will need to evaluate the project's proposed electrical demand requirements during design to determine if the existing MECO facilities are adequate to service the property. Telephone, cable TV service, and data line access to the Internet for the project site is anticipated to be provided through Hawaiian Telecom and Oceanic Time Warner Cable.

1. INTRODUCTION

1.1 Report Purpose

Based on the Site Master Plan prepared by WCIT, this Preliminary Engineering Report presents the preliminary assessment of the infrastructure and utility systems which service the project site. The objective of the report is to review existing infrastructure systems, determine project demands, identify possible constraints based on the projected demands, and describe proposed improvements relative to:

- sanitary sewer,
- water systems,
- storm drainage,
- parking and roadway,
- electrical system,
- telephone, cable, and data communication systems.

The proposed improvements are preliminary concepts and subject to change based on refinement of plans and availability of more detailed information.

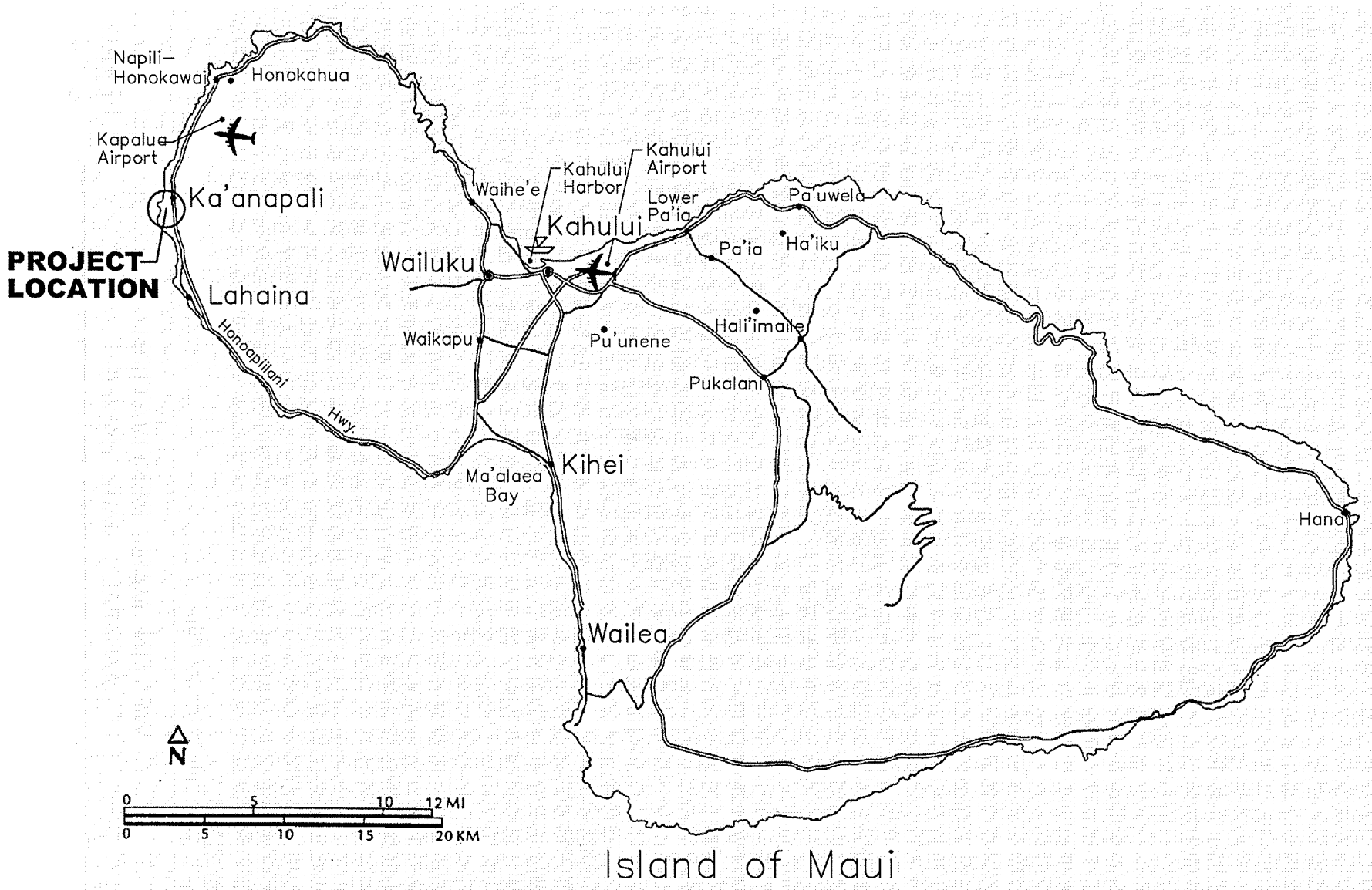
1.2 Project Information

Project Location

The project site occupies approximately 12 acres on one parcel, Tax Map Key: 4-4-008:019, located on the makai side of Ka`anapali Parkway. The project site is bounded by the Pacific Ocean to the west, Ka`anapali Parkway to the east, Whaler's Village to the north and Ka`anapali Ali'i Resort to the south. (See Figures 1-1, 1-2, and 1-3).

Project Improvements

The existing Westin Maui Resort consists of 759 hotel units, restaurants, bars, a spa, retail shops, meeting/ballroom spaces, pool areas and associated amenities.



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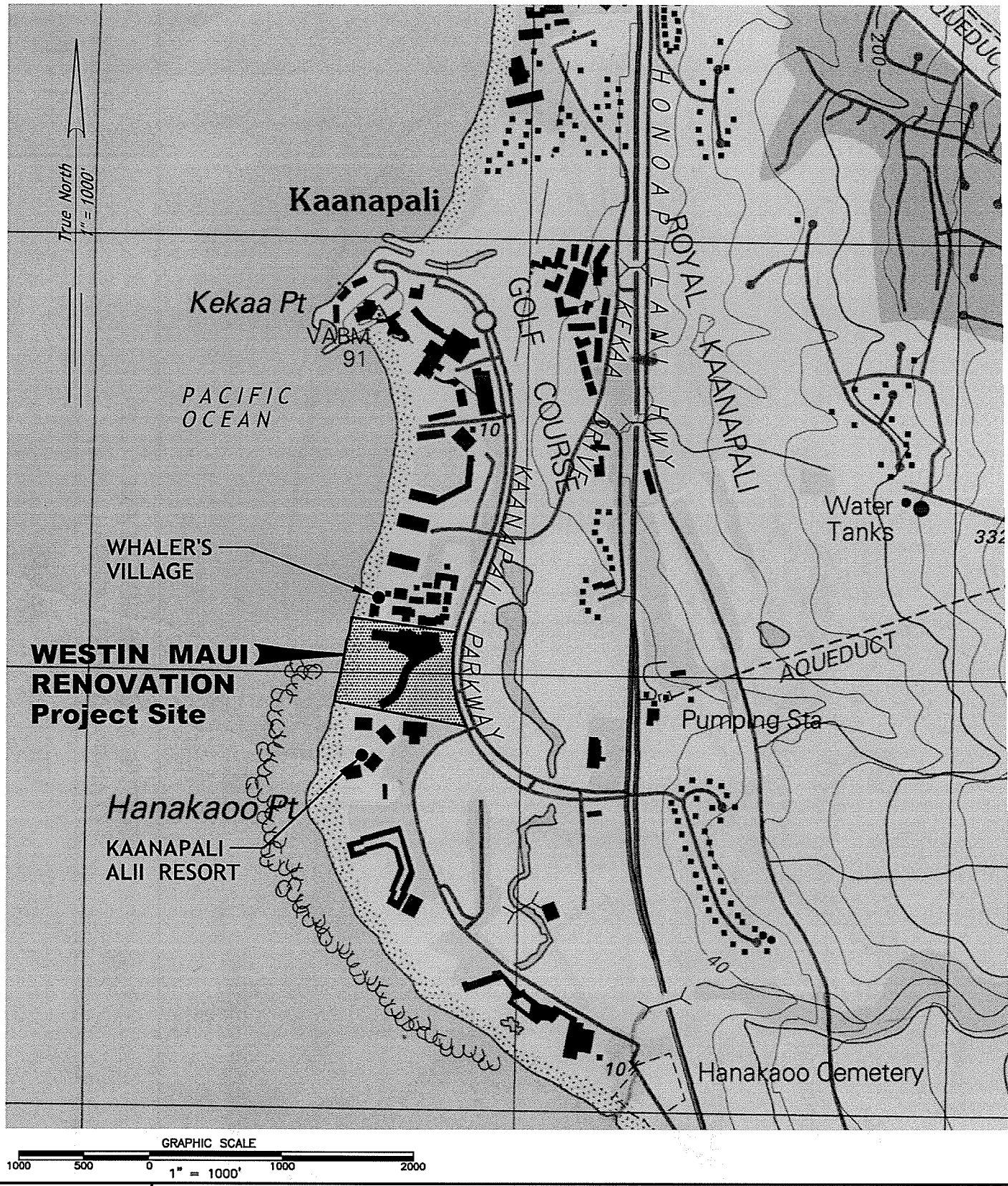
WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

VICINITY MAP

Figure
1-1



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WESTIN MAUI RENOVATION
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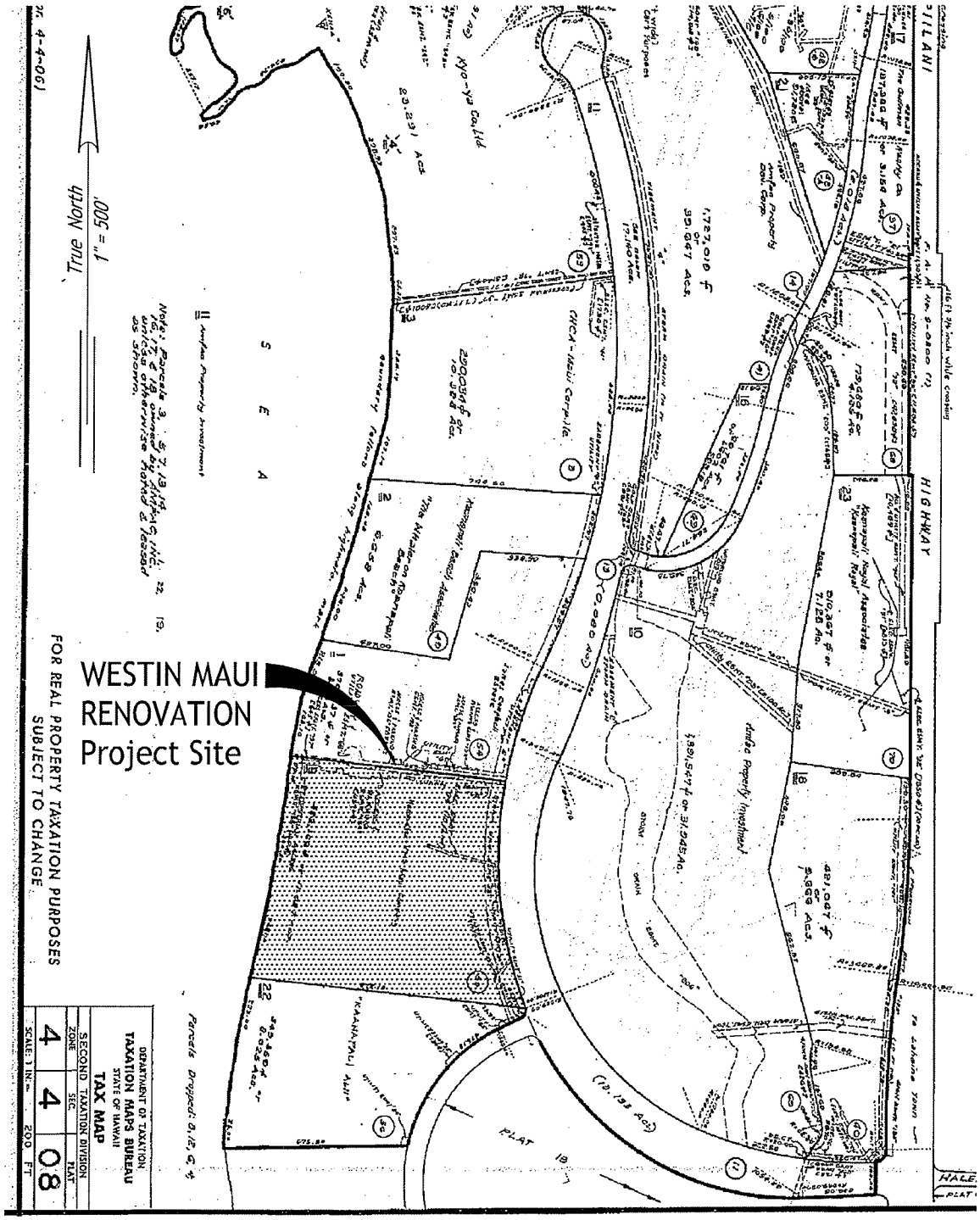
LOCATION MAP

Figure
1-2



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

TMK: 4-4-008: 019

Figure
1-3

The renovation of the oceanfront Westin Maui Resort consists of a new 4-1/2 story parking garage, renovation and expansion to the existing convention hall and ballrooms, renovation and expansion of the existing Spa facility, demolition of two structures within the shoreline setback area, the addition of two roof structures to cover both existing and proposed deck areas, relocation of an existing County of Maui sewerline within the south parking lot to accommodate the proposed parking garage. The resort unit count will remain at 759 hotel rooms.

The preliminary site plan shows access to the renovated resort will remain via the three existing driveways along Ka'anapali Parkway.

2. SANITARY SEWER SYSTEM

2.1 Background

The private on-site sewer collection system conveys sewage flow to the County of Maui Wastewater Reclamation Division (WRD) collection system along Ka'anapali Parkway. Record drawings from the resort redevelopment in the mid-1980s, recent topographic map information, and consultation with resort staff were used to determine existing site sewer utilities and connection points to the WRD system. WRD was contacted in March 2013 to determine existing sewer facility capacities in relation to the projected flow from the resort after the renovation project.

2.2 Existing Conditions

The existing sanitary sewer system serving the Westin Maui Resort consists of four connections to the County of Maui WRD system. The first is a 10-inch sewerline connecting to the existing 15-inch WRD sewerline along Ka'anapali Parkway. The other three connections are via 8, 6 and 4-inch laterals that connect to the existing 10-inch WRD sewerline located within an easement within the service driveway between the Westin Maui Resort and Whaler's Village to the north. The existing 10-inch WRD sewerline connects to the existing 15-inch sewerline along Ka'anapali Parkway. Figure 2-1 shows the Existing Sanitary Sewer System Plan.

There is an existing 10-foot wide easement that cuts diagonally through the southeast corner of the property. The easement contains a 12-inch sewerline from Nohea Kai Drive to the south to Ka'anapali Parkway to the west.

The County gravity collection system continues south along Ka'anapali Parkway beyond the resort to Ka'anapali No. 1 Wastewater Pump Station (WWPS No. 1) located between the 16th and 17th holes of the golf course. In 2009 a new force main for this pump station was constructed following an alignment along Kekaa Drive to transport flows directly to the gravity lines within Honoapiilani Highway (bypassing Lahaina WWPS No.2). Ka'anapali Pump Station currently has a capacity of 1.47 million gallons per day (mgd). Current average flows are approximately 0.50 mgd. Ka'anapali Pump Station is scheduled to undergo renovation in 2014.

The Lahaina Wastewater Reclamation Facility's (LWRF) original total treatment capacity was 9.0 million gallons per day (mgd). Recent analysis done by the WRD indicates the current capacity at about 6.7 mgd. Over the last two years, the average daily flow into the LWRF was about 4.0 mgd, maxing out at about 4.5 mgd.

LWRF is currently capable of producing a maximum of 2.0 mgd of R-1 quality water. By January of 2014 all flows treated by LWRF will be to R-1 quality. In 2012, LWRF supplied an average of 1.4 mgd (with a minimum of 1.1 mgd and a maximum of 1.8 mgd) to consumers in the Ka'anapali area. The remainder of the R-1 water was sent to injection wells.

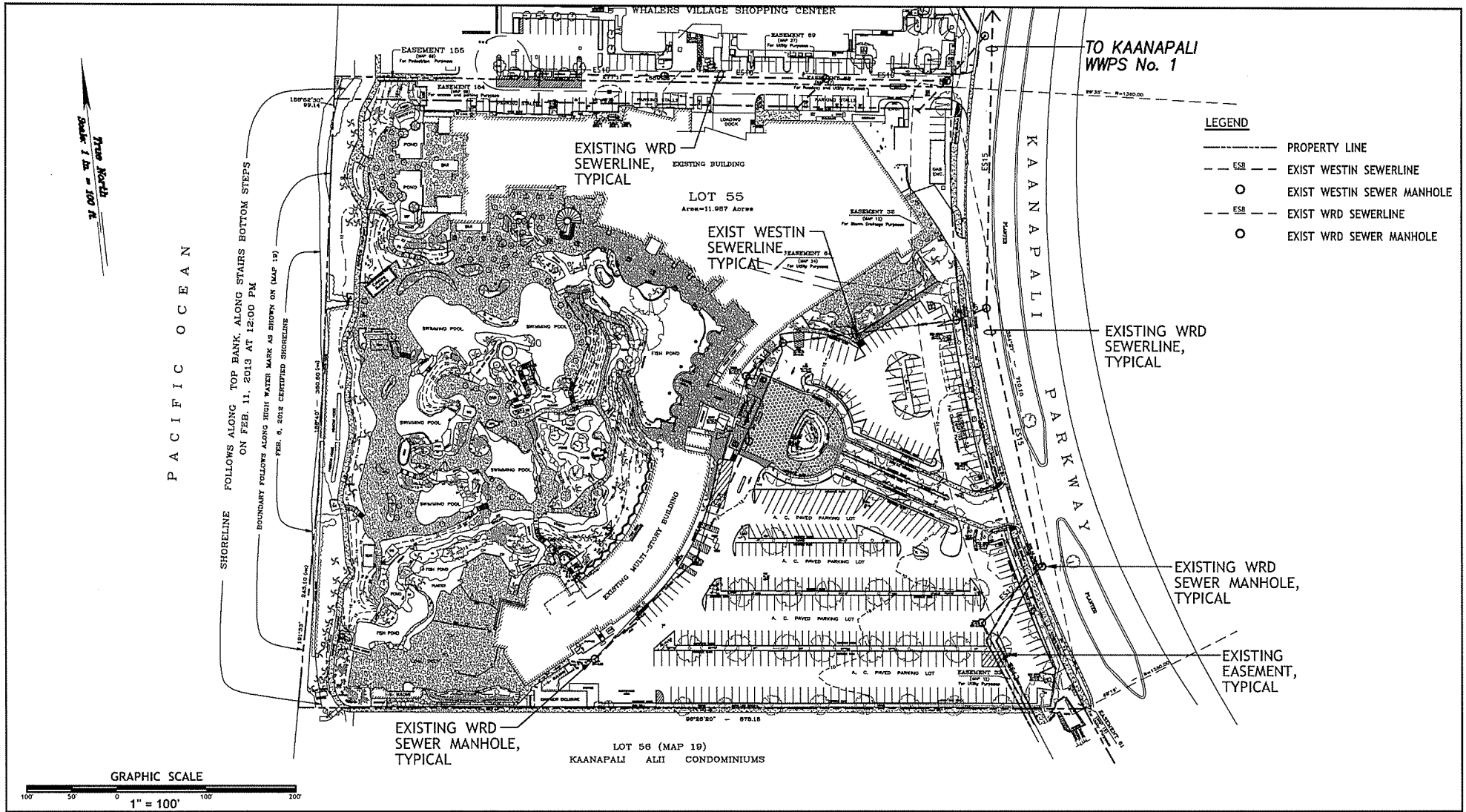
WRD is in the process of holding informational meetings with the resorts and businesses in Ka'anapali to discuss the future availability of R-1 water in the future, and the requirements to connect to the County's recycled water system. The requirements would include modifying the property's irrigation system to accept and utilize the recycled water in accordance with State of Hawaii Department of Health (DOH) requirements.

Based on the County guidelines for wastewater contribution, an average daily sanitary sewer flow of 342,340 gpd is estimated for the existing Westin Maui Resort. (See Appendix A).

2.3 Projected Demands

Projected sanitary sewer generation for the resort after the renovation was derived using: 1) the project's program requirements provided by WCIT; 2) a generalized simulation of projected demands from similar developments; and 3) based on County guidelines for wastewater generation. Line sizes will be determined during the design phase of the project.

An average daily sanitary sewer flow of 354,490 gpd is projected after the renovation project. The projected sewer flow is an increase of 12,150 gpd or approximately 3.5% percent from the existing flow of 342,340 gpd. (See Appendix A).



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

EXISTING SEWER SYSTEM

Figure
2-1

2.4 Proposed Improvements

WRD was contacted in February 2013 to determine if the County system has sufficient capacity in its downstream gravity and pressure sewerlines, sewer pump stations, and the LWRF to support the projected wastewater flow from the resort after the Westin Maui renovation.

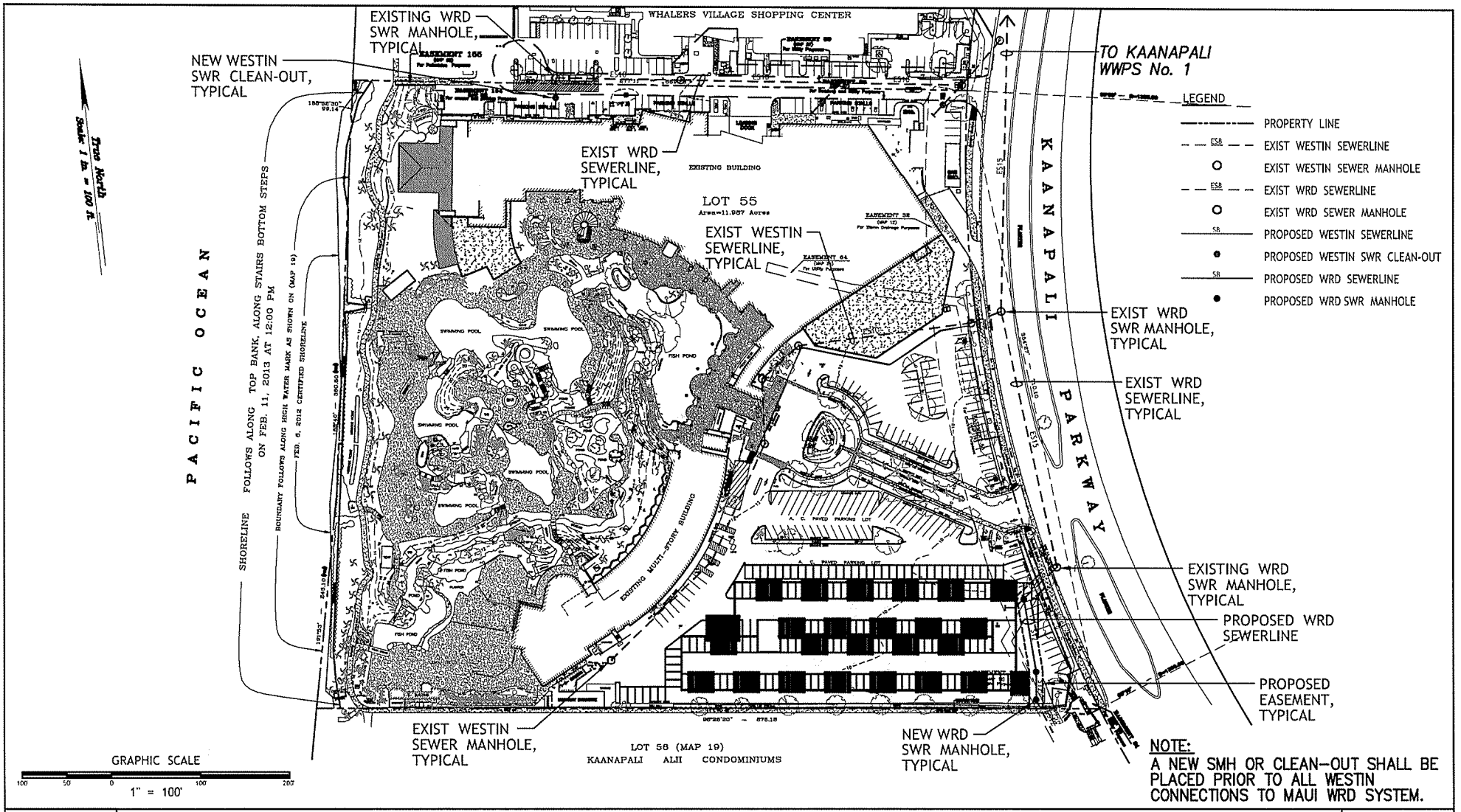
In a letter dated February 2013, WRD responded that it feels the existing County sewer system is currently adequate for the proposed increase in flows. The County will allocate sewer availability based on a "first come first served" basis. Even if there is currently capacity in the County system, if another project that proposes to discharge wastewater into the County system goes through the building permit process prior to the renovation project, any current available sewer capacity may be consumed, which could result in the current County system not being able to accommodate the Westin Maui renovation project. The County may then require the Westin Maui renovation project to construct off-site sewer improvements for the system to accommodate the resort.

It is assumed that the proposed renovation of the lobby area, restaurant, spa space and ballroom expansion will connect to the existing building plumbing system and will not require new lateral connection(s) to the onsite sewer system.

The preliminary site plan provided by WCIT shows the proposed parking structure will require the 12-inch WRD sewerline and easement on the southeast corner of the property to be relocated to avoid conflict with the proposed parking structure. The relocated easement will need to be 15-feet wide and approved by the Maui County Council prior to the County issuing an occupancy permit for the renovation.

In addition to the relocation of the existing sewerline, the County will also require the resort to install either manholes or cleanouts along its existing laterals immediately outside the existing easement within the service driveway between the Westin Maui and Whaler's Village in order to meet current County standards. The new private manholes and/or cleanouts would allow the County to access their portion of the sewer lateral located within the utility easement for maintenance purposes,

Figure 2-2 shows the Conceptual Sanitary Sewer System Plan.



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

PROPOSED SEWER SYSTEM

Figure 2-2

3. WATER SYSTEMS

3.1 Background

Hawaii Water Service (formerly Ka`anapali Water Corporation) owns and operates the private water system servicing the Ka`anapali Resort area in West Maui. The Westin Maui Resort is currently serviced by the Hawaii Water Service (HWS) system. Engineers from the Westin Maui Resort and HWS were consulted in February 2013 to collect information about the water system.

3.2 Existing Conditions

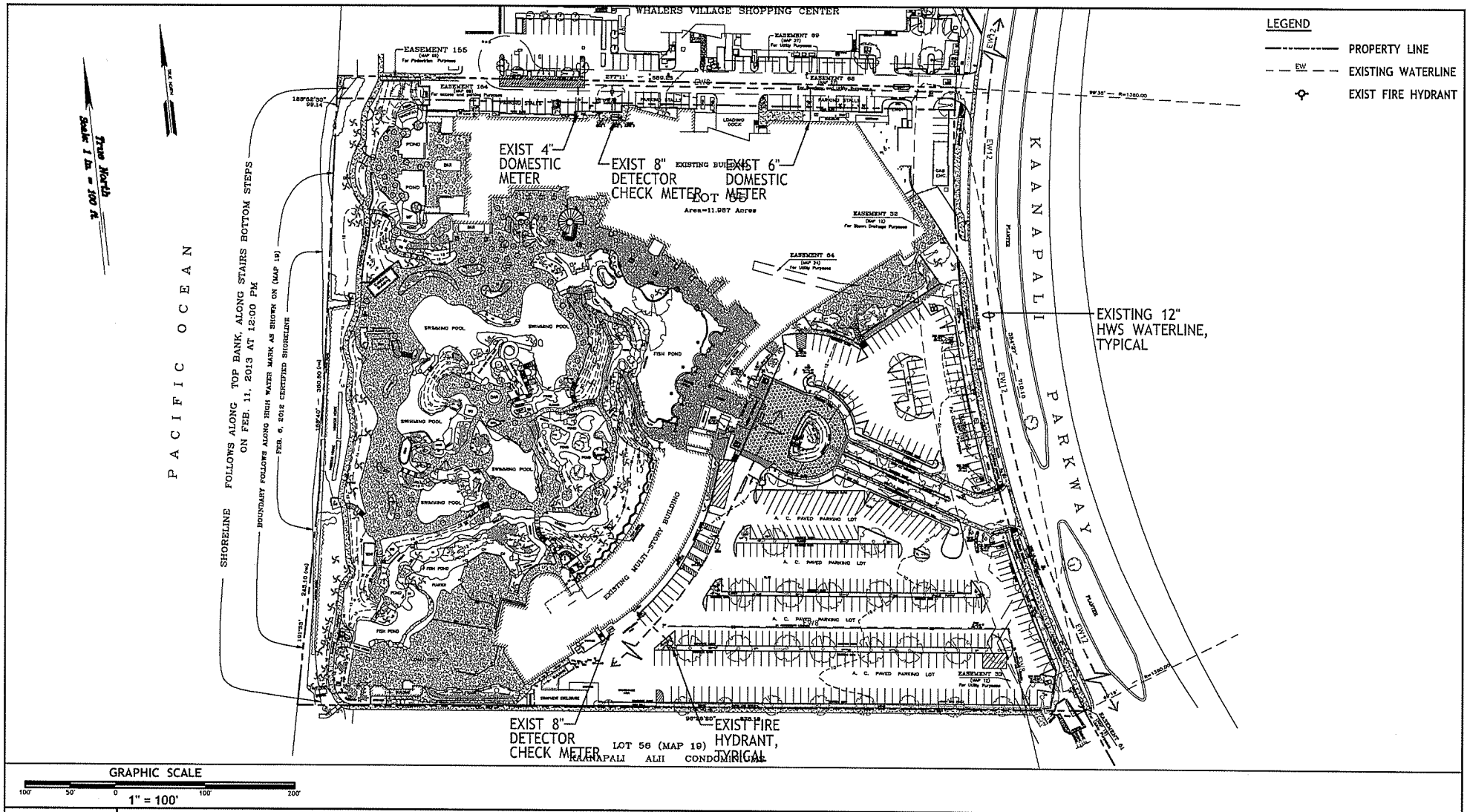
The Westin Maui Resort is currently served by four meters feeding off of the existing 8-inch HWS line along the service driveway between the resort and Whaler's Village to the north. These connections provide potable, fire protection, and irrigation water to the resort. The meters consist of two potable and two fire protection meters. There are also two on-site fire hydrants within the existing parking lot on the mauka side of the resort. (See Figure 3-1)

The 4-inch and 6-inch meters serving the resort for potable use have backflow preventers located adjacent to the meter, providing cross-contamination protection to the HWS system. These waterlines provide potable and irrigation water service to the entire resort. Based on existing uses at the resort, and average daily demand of 273,180 gpd was calculated. (See Appendix B).

Two 8-inch detector check meters provide fire protection water to the resort, connecting to the building fire sprinkler systems. One detector check meter is located along the service driveway between the resort and Whaler's Village and the second is located along the mauka face of the hotel fronting the south parking lot. An existing 8-inch line entering the site from the southeast corner of the resort provides water service to two existing hydrants within the mauka parking lot.

The 2-inch irrigation meter taps off of the 4-inch domestic line and provides water for landscaping purposes.

The HWS system that serves the project site uses a 1.5-million gallon concrete reservoir located at elevation 254 feet mean sea level (msl). This is one of three 1.5-million gallon storage reservoirs serving the West Maui area.



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

EXISTING WATER SYSTEM

Figure
3-1

3.3 Projected Demands

Potable water demands were derived using the project's program requirements provided by WCIT and generalized simulation of projected demands for similar developments. Line sizes will be determined during the design phase of the project.

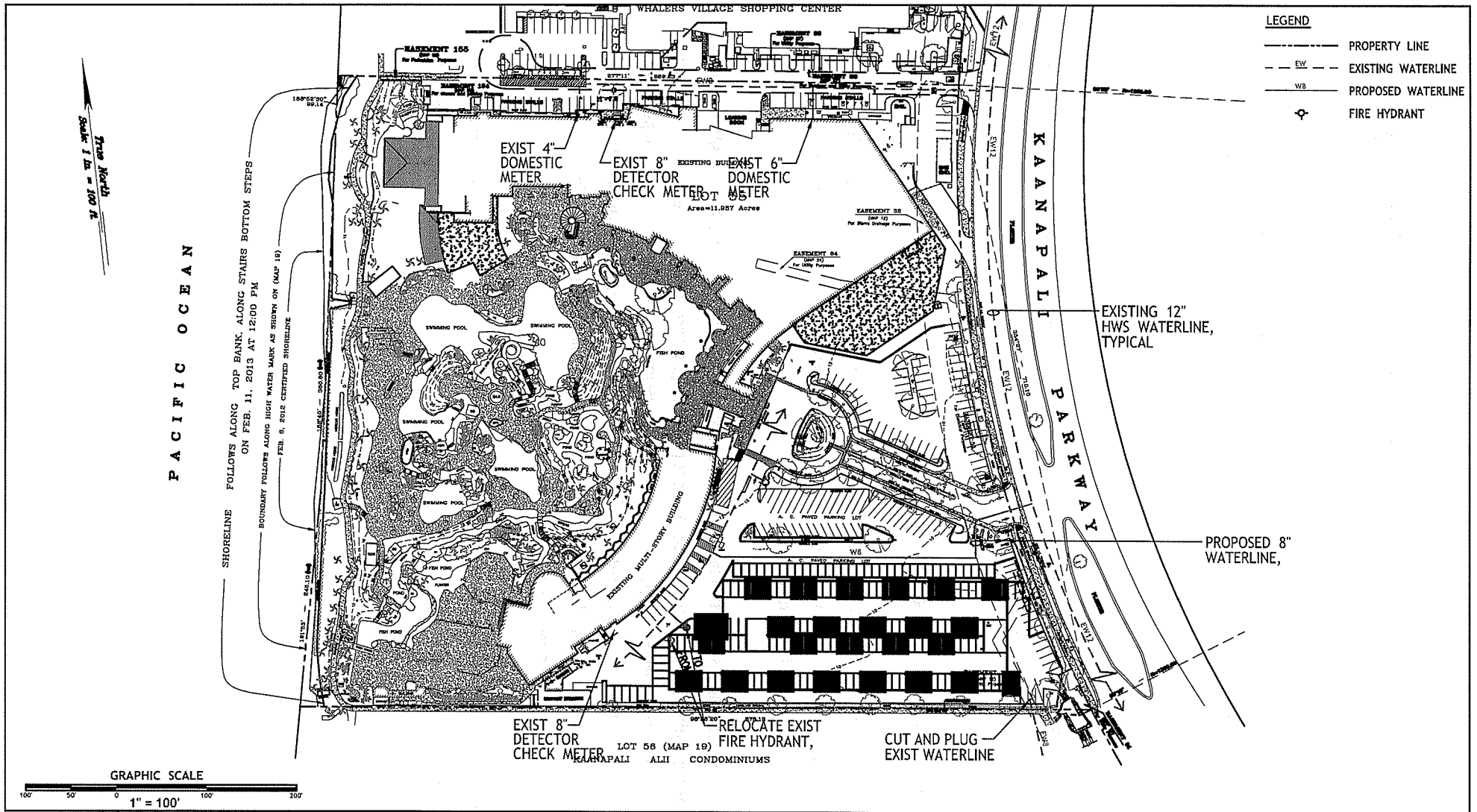
An average daily demand of 275,750 gpd of potable water was determined for the resort after the project, based on the Maui County Department of Water Supply Standards dated 2002. This average daily demand represents a one percent increase compared to the existing demand of 273,180 gpd. (See Appendix B).

3.4 Proposed Improvements

Hawaii Water Service (HWS) was contacted in February 2013 to determine if the HWS system in the area is sufficient with regard to sources, storage, and transmission capacity to support the Renovation project.

In subsequent discussions with HWS staff in March 2013, HWS at this time feels that its system will be able to accommodate the proposed increase in water demand. A will serve request letter will need to be submitted to HWS by the resort owner to formally request and reserve the additional water. The mechanical consultant during the design phase will need to make the determination if the existing meters will be able to accommodate the increase in flow.

The existing 8-inch waterline within the south parking lot will need to be relocated to avoid conflict with the proposed parking garage. The waterline is believed to be owned by HWS. (See Figure 3-2).



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

PROPOSED WATER SYSTEM

Figure
3-2

4. SITE GRADING, FLOODING, AND STORM DRAINAGE SYSTEM

4.1 Background

The assessment of the site grading, flooding, and storm drainage system are based on a site investigation and discussions with engineers at the Westin Maui Resort conducted in February 2013 as well as available record drawings and a topographic map of the site.

4.2 Existing Conditions

Runoff from the resort is collected by a system of on-site drainlines, drain inlets, catch basins, drywells, storm drain manholes and underground pipes located throughout the site (See Figure 4-1).

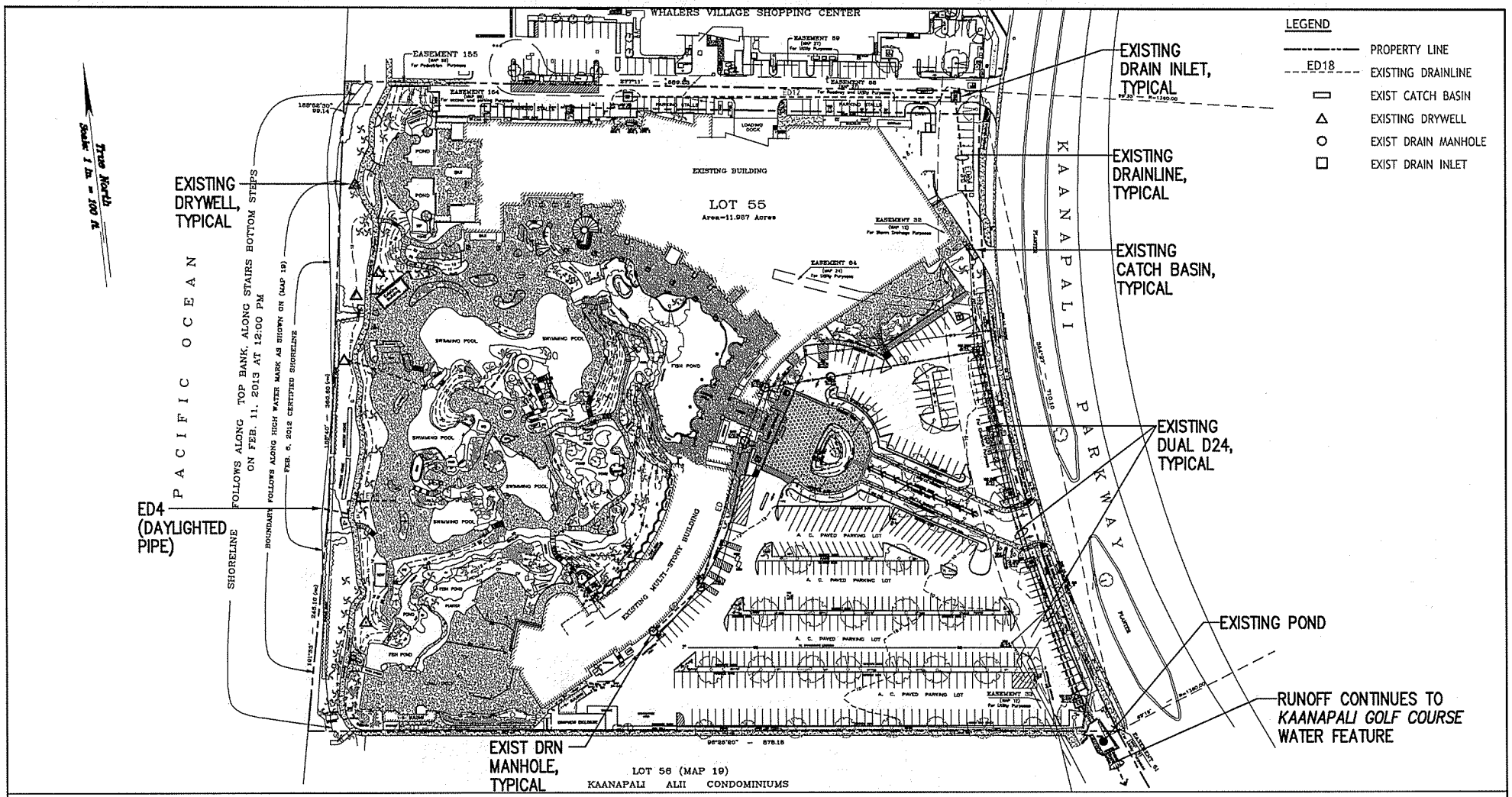
Elevations on the resort vary from 6.5 feet to 34.5 feet msl. The resort's main driveway gradually rises from elevation 8 feet msl at Ka'anapali Parkway to elevation 13 feet msl at the porte cochere. The open areas located makai of the existing buildings vary in grade from 10 feet to 34.5 feet msl and generally slope towards the shoreline, with the mauka areas generally sloping towards Ka'anapali Parkway.

Runoff from the makai portion of the resort surface flows into an on-site network of drain inlets, drain pipe, and drywells. A portion to the flow is retained and percolated within the drywells. The remaining flow continues offsite towards the Pacific Ocean.

The mauka portion of the on-site flow is collected into an on-site underground collection system and is conveyed along the mauka boundary of the site into an off-site collection pond at the southeast corner of the property. The pond also collects runoff from the Ka'anapali Ali'i Resort to the south and overflows into 3 culverts beneath Nohea Kai Drive. The culverts discharge into a concrete swale running along the mauka side of 18th fairway of the Ka'anapali Kai Golf Course, eventually discharging into the water feature adjacent the 18th green.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel No: 1500030353F dated September 19, 2012 show that the project site is located within two zones. The majority of the project site is located in

Zone X, identified as an area outside of the 500-year floodplain. The western coastline of the project site is located Zone VE, identified as a 100-year coastal floodplains that have additional hazards associated with storm waves and base flood elevation of +10.0 and +11.0 feet msl. (See Figure 4-2). None of the resort structures are within Zone VE.



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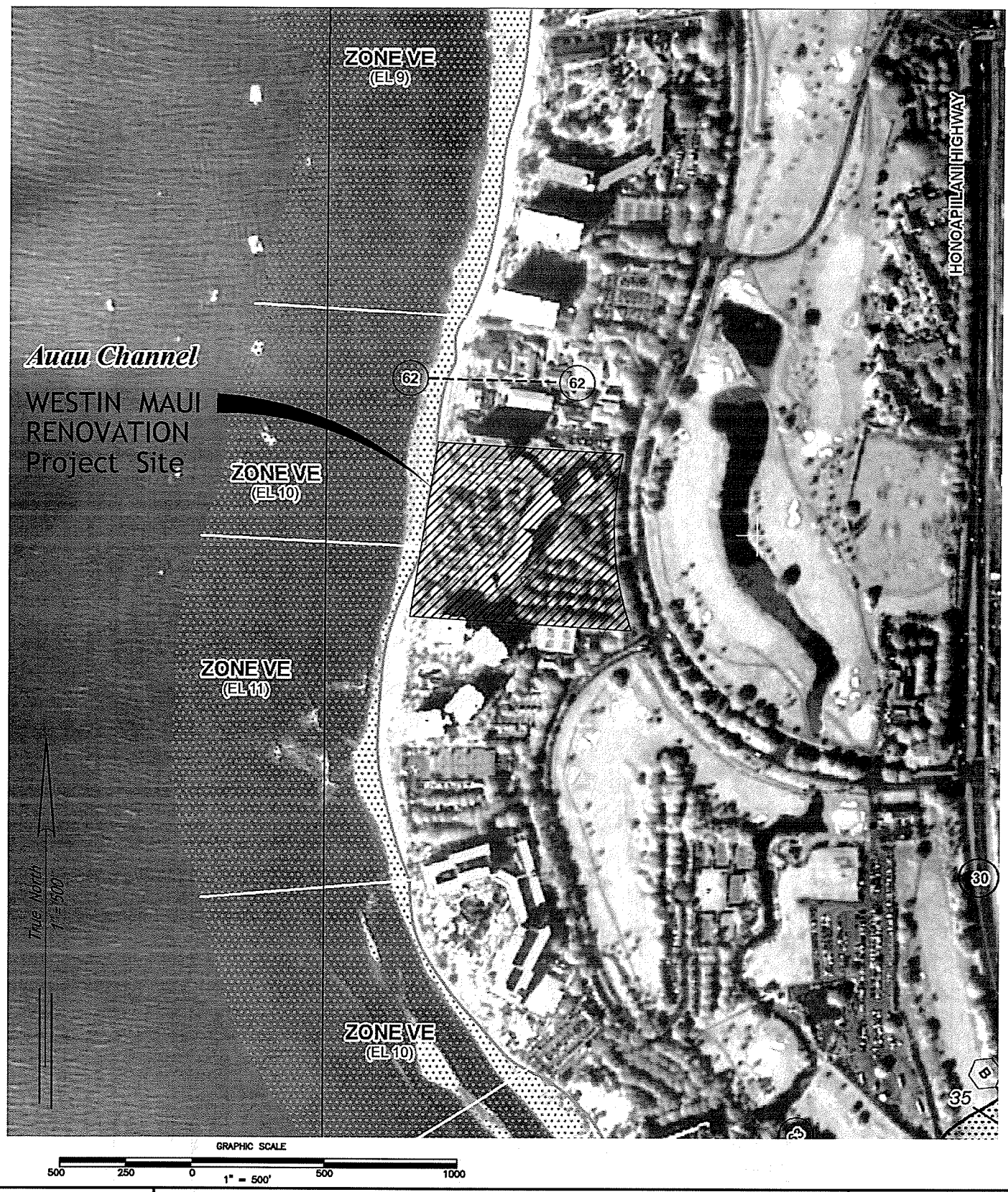
WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

EXISTING DRAIN SYSTEM

Figure 4-1



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

FLOOD ZONE MAP

Figure
4-2

4.3 Projected Demands

Storm drainage volumes for the project site were derived using the Site Master Plan provided by WCIT and generalized simulation of projected demands for similar developments. The proposed on-site storm drainage system is likely to consist of a combination of drain inlets, storm drain manholes, underground piping, and underground detention/retention. (See Figure 4-3). Line sizes, inlet locations, drywell requirements and detention/retention requirements will be determined during the design phase of the project.

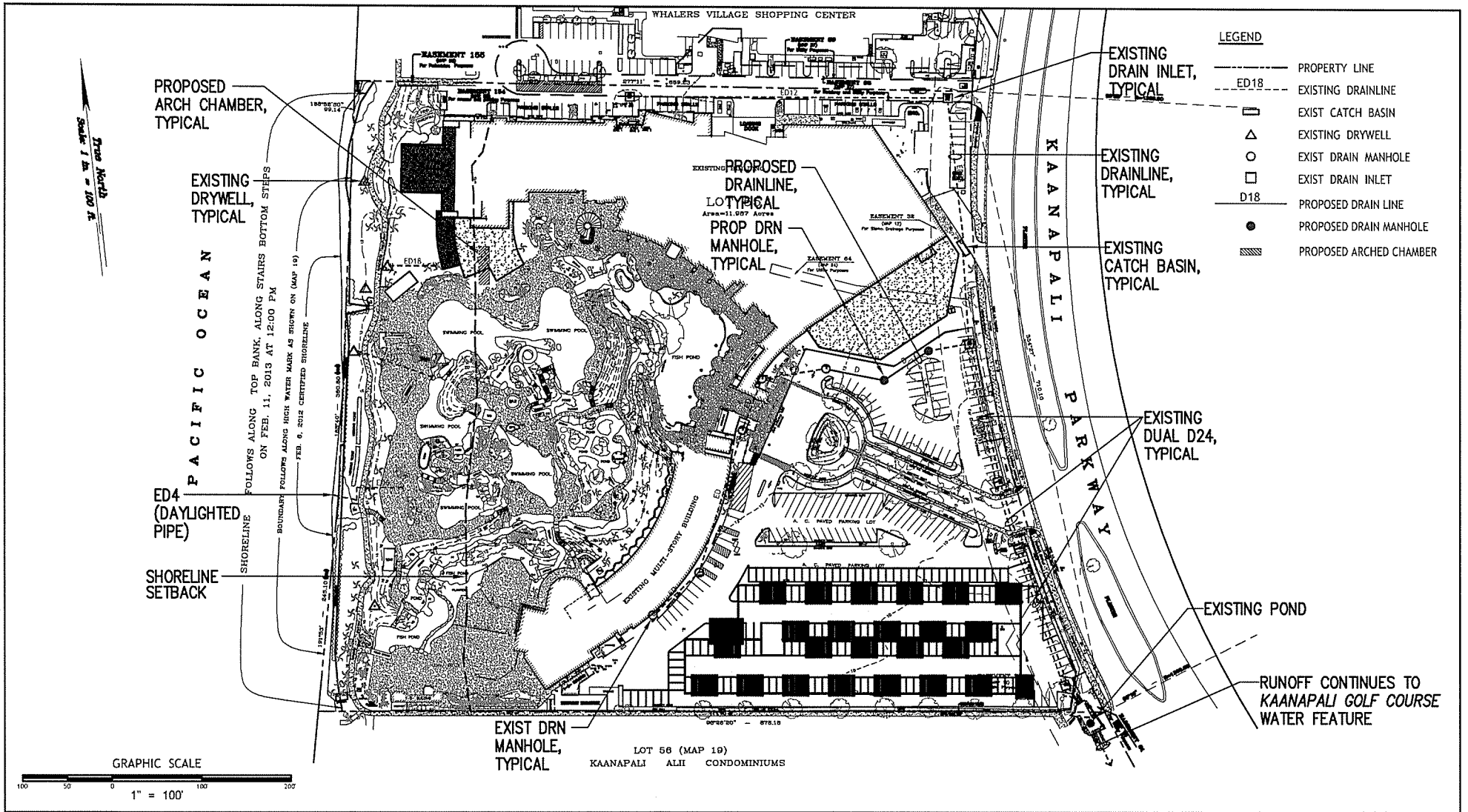
The proposed renovation will slightly increase the estimated storm drainage peak flow from 41.2 cubic feet per second (cfs) for existing conditions to 41.4 cfs for proposed conditions. Additionally, runoff volume will increase by 42 cubic feet (cf) from existing to proposed conditions. (See Appendix C) The increase in peak discharge and runoff volume can be attributed to the increase in impervious area due to the proposed resort renovations.

4.4 Proposed Improvements

The County requires all developments to include a site-specific Water Quality Management Plan, which will incorporate Best Management Practices (BMPs), in the design plans for the project. The BMPs will include plans for both the construction and operation phases of the development. The BMPs will be created with guidelines from a number of sources including Hawaii's Coastal Nonpoint Pollution Control Program Management Plan, the West Maui Watershed Owners Manual Chapters 2 & 4, and Island Stewardship: Guide to Preventing Water Pollution for Maui's Homes and Businesses. In addition, if the cost of the renovation exceeds 50% of the replacement cost of the resort, the renovation project will be required to comply with the recently enacted Maui County storm water quality requirements. The County requirement would apply to the areas being graded only. Acceptable options for the treatment of the stormwater would include vegetated swales, detention basins, infiltration basins, pre-fabricated treatment devices, and sand filters.

In addition to any stormwater treatment requirements by the County, filter inserts such as KriStar Enterprises, Inc.'s FloGard+PLUS system should be installed into all existing

and proposed concrete drain inlets. The FloGard+PLUS filter inserts incorporate a stainless steel support frame with a polypropylene woven monofilament geotextile fabric containment area for sediment and debris mitigation. Absorbent filled pouches can be inserted in the containment area for mitigation of petroleum products.



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

PROPOSED DRAIN SYSTEM

Figure 4-3

5. ROADWAY and PARKING SYSTEM

5.1 Background

The analysis of the roadway and parking system is based on the review of the Site Master Plan prepared by WCIT. This section will concentrate on project site related roadway and parking system.

5.2 Existing Conditions

The project site lies west of Honoapi`ilani Highway, State Route 30, the primary arterial in West Maui. Honoapi`ilani Highway is a two-way, four-lane, divided roadway near the project site oriented in a north-south direction, provides regional access to the resort communities located along the western coast of Maui.

Access to the resort is via Ka'anapali Parkway, a two-way, divided roadway oriented in the north-south direction with the oceanfront properties on the makai side and the Royal Ka'anapali Golf Course on the mauka side. Ka'anapali Parkway connects to Honoapi'ilani Highway via a signalized intersection approximately quarter of a mile from the project site. The resort is located at the northwest corner of Ka'anapali Parkway and Nohea Kai drive.

Three driveways along Ka'anapali Parkway provide access to the resort. The main driveway provides access to the porte cochere and main parking areas on the mauka side of the resort. A second driveway is used for a dedicated pickup area for trolleys and tour bus pickups. A trolley system currently provides service to the resort to and from Lahaina. The third driveway is a service driveway located along the north boundary of the property which provides access to the back of house of the resort as well as to Whaler's Village to the north. The service driveway contains the resort loading dock, parking stalls for the resort staff as well as beach access stalls at the makai end of the driveway.

5.3 Project Demands

Vehicular parking provided for the project is based on program information provided by WCIT. Per the proposed improvement plan, a total of 913 stalls are proposed for the resort.

5.4 Proposed Improvements

Based on the Site Master Plan prepared by WCIT, access to the renovated resort will remain via the three existing driveways along Ka'anapali Parkway.

Emergency and fire truck vehicles will also utilize the multiple driveways to access the project site. The Maui Fire Department (HFD) will need to be consulted to determine emergency access for the site.

6. ELECTRICAL, TELEPHONE, CABLE, AND DATA SYSTEMS

6.1 Background

Electrical service for the proposed project is anticipated to be provided by Maui Electric Company, Ltd (MECO). MECO was consulted in February 2013 to determine service availability based on existing facility capacities and development plans.

Telephone service for the project will be provided by Hawaiian Telecom. Internet and cable TV service for the project will be provided by Oceanic Time Warner Cable.

6.2 Existing Conditions

The existing electric service to the project site is a 12.47 kV, 3-phase primary service which comes from the Puukolii substation, located across Honoapiilani Highway above Puukolii Road. The existing distribution line is located underground along Kaanapali Parkway.

Telephone service to the project site and surrounding area is provided from the Hawaii Telecom system located on Ka`anapali Parkway. Service enters the project site from Ka`anapali Parkway and continues through the project site to service hotel and other uses.

Cable service for the project site and surrounding area is provided by Oceanic Time Warner Cable from a main underground cable located along Ka`anapali Parkway. The main cable along Ka`anapali Parkway is adequate to service the future development.

6.3 Projected Demands

The proposed electrical demand load post-renovation will need to be calculated by the project's electrical engineering consultant.

6.4 Proposed Improvements

MECO will need to evaluate the project's proposed electrical demand requirements to determine if the existing MECO facilities are adequate to service the property.

New underground ductlines for telephone, Internet, and cable service will be extended from existing underground ductlines along Ka`anapali Parkway.

7. OTHER UTILITIES

7.1 Fuel Systems

The project site contains four above-ground fuel tanks used for storage of propane. Two of the tanks are 2,000 gallons each with the remaining two being 124 gallons each.

In addition, the project site contains two 10,000-gallon underground storage tanks which provide diesel fuel for the emergency generators. In addition the resort has one 150-gallon day tank at the generator and one 100-gallon tank in the boiler room.

The project's mechanical consultant will need to make the determination during the design phase to determine if the existing tanks are adequate to support the proposed renovation.

7.2 Grease Trap Tanks

The resort contains an exterior underground grease trap tank, located along the service driveway between the resort and Whaler's Village. In order to accommodate the additional food preparation areas proposed for the renovation, additional grease trap tanks and/or a larger tank will need to be installed. The project's mechanical consultant will need to verify the sizing and number of tanks required during the design phase.

The State of Hawaii Department of Health (DOH) Underground Storage Tank Section has determined that Title 11 Chapter 281, Underground Storage Tanks, does not apply to underground grease trap tanks. The DOH indicated that the grease trap tanks are not regulated by Chapter 281, as the tanks would not contain toxic substances, as might be found in underground fuel tanks.

APPENDICES

Appendix A

Sewage Design Flow Calculations

Westin Maui Renovation
Existing Sewage Design Flow Calculations

Average Daily Wastewater Flow Rate (ADWFR)

Type	Gallons per day	
Hotel, resort average with laundry[1]	350	per unit
Restaurant[1]	80	per seat
Bar (with food service)[1]	80	per seat
Hotel Employee[1] (spa/retail/office/resort/restaurant/daycare)	20	per employee
Ballroom	20	per seat
Spa	30	per treatment
Pool	10	per user
Daycare	10	per child
Meal	5	per meal

Existing Sewage Design Flow Calculations

Facility	Facility Description	Count	ADWFR (gallons per day per unit)	ADWF (gallons per day)
Hotel Guest Rooms	Hotel Rooms (on-site laundry)	759 units	350	265,650
Onos	Restaurant	209 seats	80	16,720
Tropica	Restaurant	181 seats	80	14,480
Colonnade	Restaurant	55 seats	80	4,400
Beach Bar	Bar with Food Service	12 seats	80	960
Main Kitchen	Room service and employee meals	400 meals	5	2,000
Valley Isle Ballroom	Ballroom	800 seats	20	16,000
Haleakala Ballroom	Ballroom	420 seats	20	8,400
Spa	Spa (treatment facilities)	73 spa treatments	30	2,190
Daycare	Onsite Daycare	4 children	10	40
Resort Employees	Resort Employees	375 employees	20	7,500
Pool Restrooms	Restrooms for resort guests	400 users	10	4,000
			Total	**342,340**

The existing total Average Daily Wastewater Flow Rate for the Westin Maui Resort is approximately 342,340 gallons per day.

[1] *County of Maui Wastewater Reclamation Division, Wastewater Flow Standards, dated February 2, 2000.*

Westin Maui Renovation
Proposed Sewage Design Flow Calculations

Average Daily Wastewater Flow Rate (ADWFR)

Type	Gallons per day	
Hotel, resort average with laundry[1]	350	per unit
Restaurant[1]	80	per seat
Bar (no food service)[1]	15	per seat
Bar (with food service)[1]	80	per seat
Hotel Employee[1] (spa/retail/office/resort)	20	per employee
Ballroom	20	per seat
Spa	30	per treatment
Pool	10	per user
Daycare	10	per child
Meal	5	per meal

Proposed Sewage Design Flow Calculations

Facility	Facility Description	Count	ADWFR (gallons per day per unit)	ADWF (gallons per day)
Hotel Guest Rooms	Hotel Rooms (on-stie laundry)	759 units	350	265,650
Restaurants	Dining and Terrace Area	448 seats	80	35,840
Bar	Bar with Food Service	30 seats	80	2,400
Main Kitchen	Room Service and Employee Meals	400 meals	5	2,000
Ballroom & Meeting Room	Combined use	1,700 seats	20	34,000
Spa	Spa (treatment facilities)	102 spa treatments	30	3,060
Daycare	Onsite Daycare	4 children	10	40
Resort Employees	Resort Employees	375 employees	20	7,500
Pool Restrooms	Restrooms for resort guests	400 users	10	4,000
			Total	**354,490**

The proposed total Average Daily Wastewater Flow Rate for the Westin Maui Resort is approximately 354,490 gallons per day.

The total increase in Average Daily Wastewater Flow is 354,490 - 342,340 = 12,150 gallons per day or 3.5%.

[1] *County of Maui Wastewater Reclamation Division, Wastewater Flow Standards, dated February 2, 2000.*

Appendix B

Water Demand Calculations

Westin Maui Renovation
Existing Water Demand Calculation

Assumptions:
Average Daily Demand (ADD) rates per Water System Standards, Department of Water Supply, County of Maui, 2002.

Type	Gallons per day	
Resort	350	per unit
Commercial	140	per 1000 square feet

Existing Water Demand Calculations

Facility	Facility Description	Count	ADD (gallons per day per unit)	ADD (gallons per day)
Hotel Guest Rooms	Hotel Rooms	759 units	350	265,650
Restaurants/Bars	Onos, Tropica, Colonnade, Beach Bar	7,839 sf	140 gal/1000 sf	1,097
Spa		10,821 sf	140 gal/1000 sf	1,515
Retail Space		4,615 sf	140 gal/1000 sf	646
Ballroom		20,145 sf	140 gal/1000 sf	2,820
Day Care		1,106 sf	140 gal/1000 sf	155
Office Space		9,260 sf	140 gal/1000 sf	1,296
			Total	**273,180**

The total existing Average Daily Demand for the Westin Maui Resort (including auxiliary uses such as restaurants, bars, spa, retail, office) is approximately 273,180 gpd.

Westin Maui Renovation
Proposed Water Demand Calculation

Assumptions:
Average Daily Demand (ADD) rates per Water System Standards, Department of Water Supply, County of Maui, 2002.

Type	Gallons per day	
Resort	350	per unit
Multi-Family Low Rise	560	per unit
Commercial	140	per 1000 square feet

Proposed Water Demand Calculations

Facility	Facility Description	Count	ADD (gallons per day per unit)	ADD (gallons per day)
Hotel Guest Rooms	Hotel Rooms	759 units	350	265,650
Restaurants/Bars		14,102 sf	140 gal/1000 sf	1,974
Spa		15,061 sf	140 gal/1000 sf	2,109
Retail Space		4,615 sf	140 gal/1000 sf	646
Ballroom		28,000 sf	140 gal/1000 sf	3,920
Day Care		1,106 sf	140 gal/1000 sf	155
Office Space	Executive, General, & Accounting Offices	9,260 sf	140 gal/1000 sf	1,296
			Total	**275,750**

The total proposed Average Daily Demand for the Westin Maui Resort (including auxiliary uses such as restaurants, bars, spa, retail, office) is approximately 275,750 gpd.

The total increase in water demand is 275,750 - 273,180 = 2,570 gallons per day or 1%.

Appendix C

Preliminary Drainage Report

PRELIMINARY DRAINAGE STUDY
FOR THE
WESTIN MAUI RESORT RENOVATION

Ka`anapali, Maui, Hawaii
Tax Key Map: 4-4-008:019

Prepared for:

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Prepared by:

Wilson Okamoto Corporation
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Honolulu, HI 96826
WOC Job No. 8405-01

MAY 2013

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Figure A2 Proposed Drainage Map
Table A1 Existing Peak Flow Calculations
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Table A3 Existing Condition Runoff Volumes
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Table B1 Weighted Runoff Coefficient – Existing Condition
Table B2 Weighted Runoff Coefficient – Proposed Condition

EXCERPTS FROM REFERENCE 1

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Plate 1 Overland Flow Chart
Plate 2 Intensity Duration 1 hr Rainfall Curves
Plate 4 10 year 1 hour Rainfall
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I. INTRODUCTION

A. Purpose

This hydrology study was conducted to:

1. Calculate storm runoff quantities occurring at the proposed Westin Maui Resort project site under existing and proposed conditions.

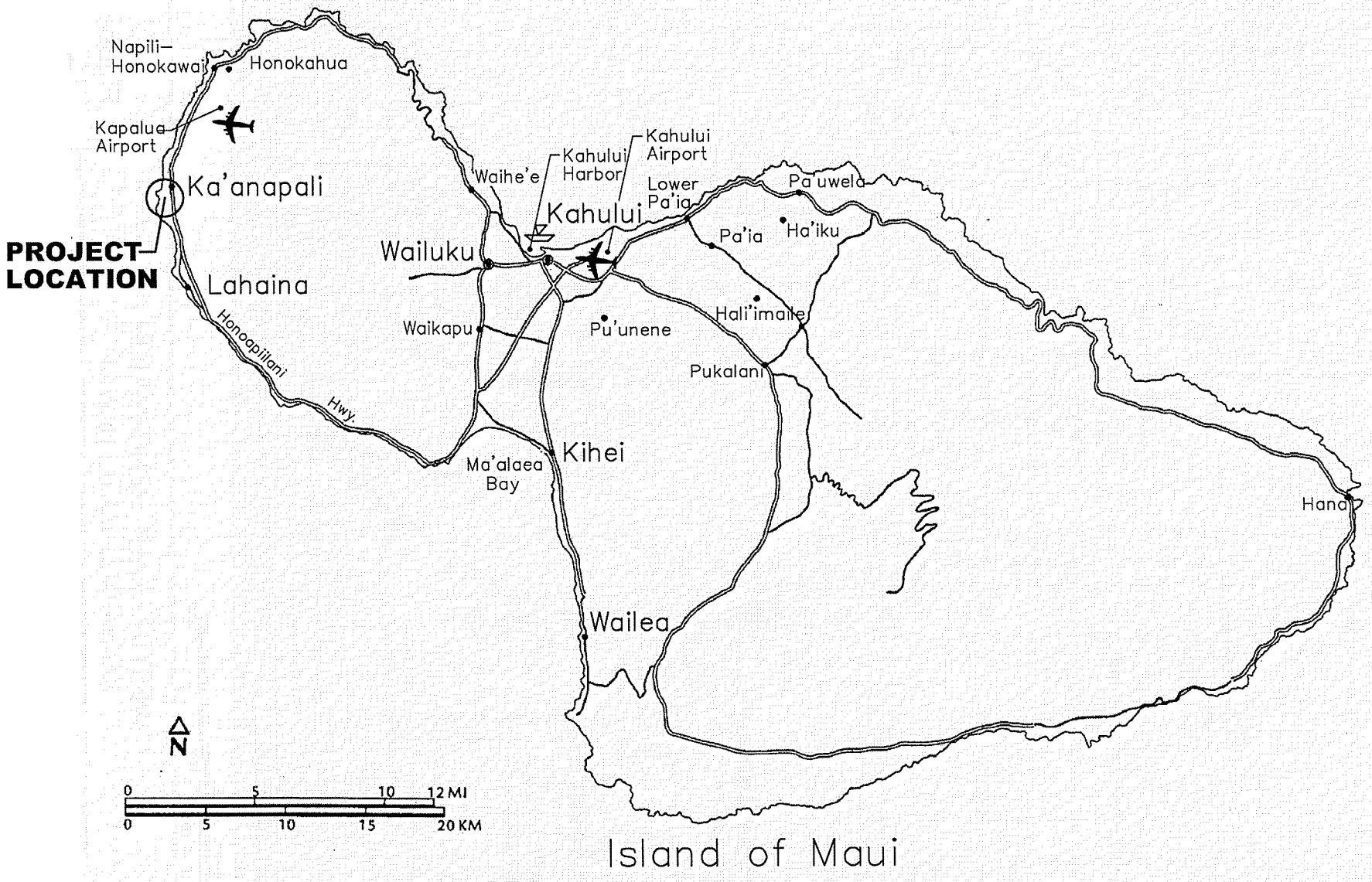
2. Determine required drainage improvements as required.

3. Ensure compliance with the "Rules for the Design of Storm Drainage Facilities in the County of Maui", Department of Public Works and Waste Management, County of Maui, November 12, 1995. (Rules for Design)

B. Proposed Project Location and Description

The project site, identified by TMK: 4-4-008:019, is an approximately 12 acres located in Ka`anapali on the island of Maui. The project site is bounded by the Pacific Ocean to the west, Ka`anapali Parkway to the east, Whalers Village Shopping Center to the north, and Ka`anapali Ali`i Resort to the south. (See Figures 1 and 2)

The existing Westin Maui Resort consists of 759 hotel rooms, restaurants, bars, retail shops, meeting/ballroom spaces, pool areas and associated amenities. The renovation of the resort consists of a new 4-1/2 story parking garage, renovation and expansion to the existing convention hall and ballrooms, renovation and expansion of the existing Spa facility, demolition of two structures within the shoreline setback area, the addition of two roof structures to cover both existing and proposed deck areas, relocation of an existing County of Maui sewerline within the south parking lot to accommodate the proposed parking garage. The resort unit count will remain at 759 hotel rooms.



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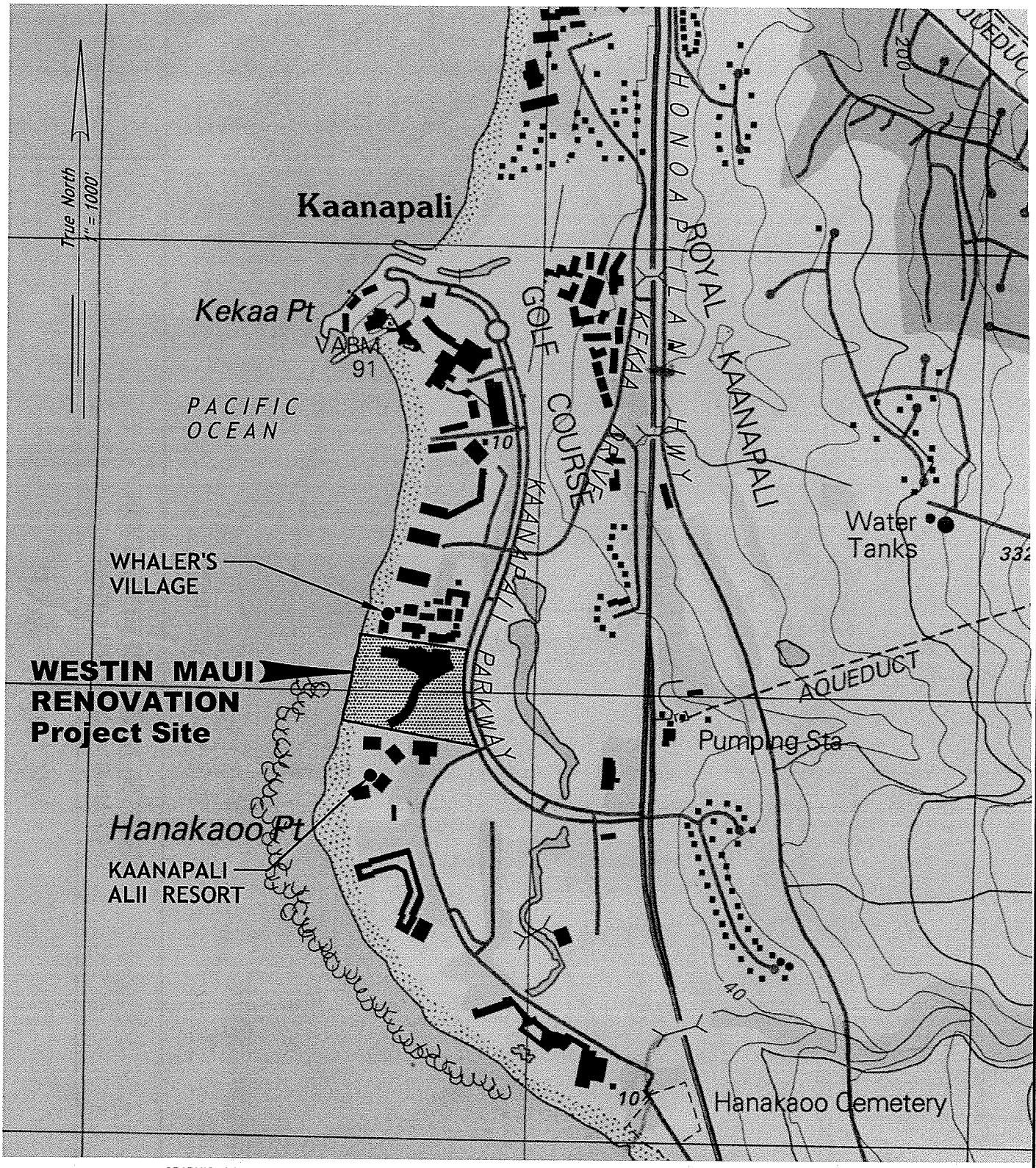
WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

VICINITY MAP

Figure
1



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

LOCATION MAP

Figure
2

C. Existing Topography

The site generally slopes mauka and makai from the existing hotel building located the center of the site. The resorts port cochere and parking lot covers a majority of the mauka side of the site. Slopes on the mauka side are moderate at approximately 1%. Resort pool, water features, and landscaping encompass a majority of the makai side of the site. Slopes vary from moderate to severe, approximately 1% to 15%. Severe slopes are located in landscaping areas. Elevations across the site range from 6.5 feet to 34.50 feet mean sea level (msl).

D. Soils

Soil series and mapping units for the island of Maui are found in maps in the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii" dated August 1972, prepared by the U.S. Department of Agricultural, Soil Conservation Service (currently Natural Resources Conservation Services). The under laying soil within the project site consists of Ewa Silty Clay (EaA) and Jaucas Sand (JaC). (See Figure 3)

Ewa Silty Clay (EaA) has a moderate permeability and runoff is very slow. Erosion hazard is no more than slight.

Jaucas Sand (JaC) has a rapid permeability and runoff is very slow to slow. The hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed.

E. Vegetation

Vegetation on the site consists of site landscaping associated with the existing resort.

MAP UNIT SYMBOL	MAP UNIT NAME
BS	BEACHES
EaA	EWA SILTY CLAY LOAM 0 TO 3 PERCENT SLOPES
JaC	JAUCAS SAND 0 TO 15 PERCENT SLOPES
KMW	KEALIA SILT LOAM
PtA	PULEHU COBBLY CLAY LOAM 0 TO 3 PERCENT SLOPES
W	WATER
WbB	WAHIKULI SILTY CLAY 3 TO 7 PERCENT SLOPES
WcC	WAHIKULI STONY SILTY CLAY 7 TO 15 PERCENT SLOPES

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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

SOIL CLASSIFICATION MAP

Figure 3

II. EXISTING DRAINAGE CONDITIONS

A. Drainage

Runoff from the makai portion of the resort surface flows into an on-site network of drain inlets, drain pipe, and drywells. A portion to the flow is retained and percolated within the drywells. The remaining flow continues offsite towards the Pacific Ocean.

The mauka portion of the on-site flow is collected into an on-site underground collection system and is conveyed along the mauka boundary of the site into an off-site collection pond at the southeast corner of the property. The pond also collects runoff from the Ka'anapali Alii Resort to the south and overflows into 3 culverts beneath Nohea Kai Drive. The culverts discharge into a concrete swale running along the mauka side of 18th fairway of the Ka'anapali Kai Golf Course, eventually discharging into the water feature adjacent the 18th green.

Based on the existing topography and location of the drain inlets and dry wells, the existing project site contains six drainage basins. (See Figure A1 of Appendix A)

B. Flood Hazard

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel No: 1500030353F dated September 19, 2012 show that the project site is located within two zones. The majority of the project site is located in Zone X, identified as an area outside of the 500-year floodplain. The western coastline of the project site is located in Zone VE, identified as 100-year coastal floodplains that have additional hazards associated with storm waves and base flood elevation of 10.0 and 11.0 feet msl. (See Figure 4)

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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

FLOOD ZONE MAP

Figure
4

III. PROPOSED DRAINAGE CONDITIONS

The proposed drainage patterns will match existing conditions. See Section II of this report for existing drainage conditions. Any increase in runoff volume will be mitigated by underground retention arched chambers.

Based on the existing topography and location of the drain inlets and dry wells, the proposed project site contains six drainage basins. (See Figure A2 of Appendix A)

IV. HYDROLOGY ANALYSIS

A. Design Criteria

Peak flow is calculated using the Rational Method using a 10-year 1-hour rainfall event for both existing and proposed conditions. Site runoff volumes are determined using a 50-year 1-hour for both existing and proposed conditions.

B. Peak Flow Calculations

1. Rational Method

Peak flows are determined by the Rational Method expressed as:

$$Q = C * I' * A$$

where:

Q = Flowrate in cubic feet per second (cfs)

C = Runoff coefficient

I' = Rainfall intensity in inches per hour for a duration equal to the time of concentration.

A = Drainage area, in acres

a) Runoff Coefficient (C)

Table 2 from Reference 1 provides information for runoff coefficients of various ground covers. (See Appendix B) Runoff coefficients of 0.10 and 0.95 are selected for pervious and impervious surfaces respectively. Selection is based on relation of site conditions to surface type descriptions provided in Table 2.

Each subbasin delineated consists of both pervious and impervious surfaces. To account for the varying surface types, a weighted runoff coefficient is determined. Tables B1 and B2 of Appendix B provide weighted runoff coefficient values for existing and proposed conditions respectively.

b) Rainfall Intensity (I')

The rainfall intensity for each subbasin is determined by using methods presented in Reference 1. Procedures require the calculation of the time of concentration (Tc) for each subbasin. Plate 1 of Reference 1 is used to determine the time of concentration of each subbasin. A 10-year 1-hour rainfall value (I) of 2.0 inches/hour is selected from Plate 4 of Reference 1 for the Ka`anapali area. Rainfall intensity equal to the time of concentration is derived from Plate 2 of Reference 1 for each subbasin. (See Appendix B)

c) Drainage Area (A)

Limits of the drainage basins are delineated based on topographic features. There are 6 subbasins for the existing condition and 6 subbasins for the proposed condition with a total area of 11.99 acres in both instances. Delineation of areas for existing and proposed conditions is presented in Figures A1 and A2 of Appendix A respectively.

d) Results

Peak flow in cubic feet per second as calculated by the Rational Method for both the existing and proposed conditions are shown in Tables A1 and A2 in Appendix A respectively. Total discharge generated onsite under existing drainage conditions is 41.2 cfs. Total discharge generated onsite under proposed drainage conditions is 41.4 cfs.

C. Runoff Volume Calculations

1. Volumetric Equation

Runoff volumes are calculated by the equation:

$$V = C * I * A * 3630$$

where:

V = Runoff volume in cubic feet (cf)

C = Runoff coefficient

I = Rainfall intensity in inches per hour

A = Drainage area, in acres

a) Runoff Coefficient (C)

Table 2 from Reference 1 provides information for runoff coefficients of various ground covers. (See Appendix B) Runoff coefficients of 0.10 and 0.95 are selected for pervious and impervious surfaces respectively. Selection is based on relation of site conditions to surface type descriptions provided in Table 2.

Each subbasin delineated consists of both pervious and impervious surfaces. To account for the varying surface types, a weighted runoff coefficient is determined. Tables B1 and B2 of Appendix B provide weighted runoff coefficient values for existing and proposed conditions respectively.

b) Rainfall Intensity (I)

A 50-year 1-hour rainfall value (I) of 2.5 inches/hour is selected from Plate 7 of Reference 1 for the Ka`anapali area. (See Appendix B)

c) Drainage Area (A)

Limits of the drainage basins are delineated based on topographic features. There are 6 subbasins for the existing condition and 6 subbasins for the proposed condition with a total area of 11.99 acres in both instances. Delineation of areas for existing and proposed conditions is presented in Figures A1 and A2 of Appendix A respectively.

d) Results

Site runoff volumes in cubic feet for both the existing and proposed conditions are shown in tables A3 and A4 in Appendix B respectively. Total runoff generated onsite under existing drainage conditions is 85,725 cf. Total runoff generated onsite under proposed drainage conditions is 85,766 cf.

VII. DISCUSSION

In comparing the peak discharge of the existing and proposed drainage conditions for the project site, there is an increase of approximately 0.2 cfs. The increase in peak discharge can be attributed to an increase in impervious area caused by the resort renovations. However, the resulting increase is minimal and insignificant relative to the drainage area.

Runoff volume calculations show a total increase of runoff equaling 42 cf. Comparing runoff volumes at relative basins between existing and proposed conditions shows that basin P-1 decreased by 535 cf, basin P-4 increased by 494 cf, and basin P-5 increased by 82 cf.

Anticipated runoff increase can be mitigated on-site with the use of underground storage pipes which will allow the run-off to percolate on-site over time. Arched chambers are recommended for the project site given the proximity to the groundwater table on the makai side of the site. Actual design of the chambers and required improvements will be determined during the design phase of the project.

Given the insignificant increase in overall peak flow and use of underground storage to mitigate any increase in runoff volume, no significant impact is anticipated to adjacent or downstream properties.

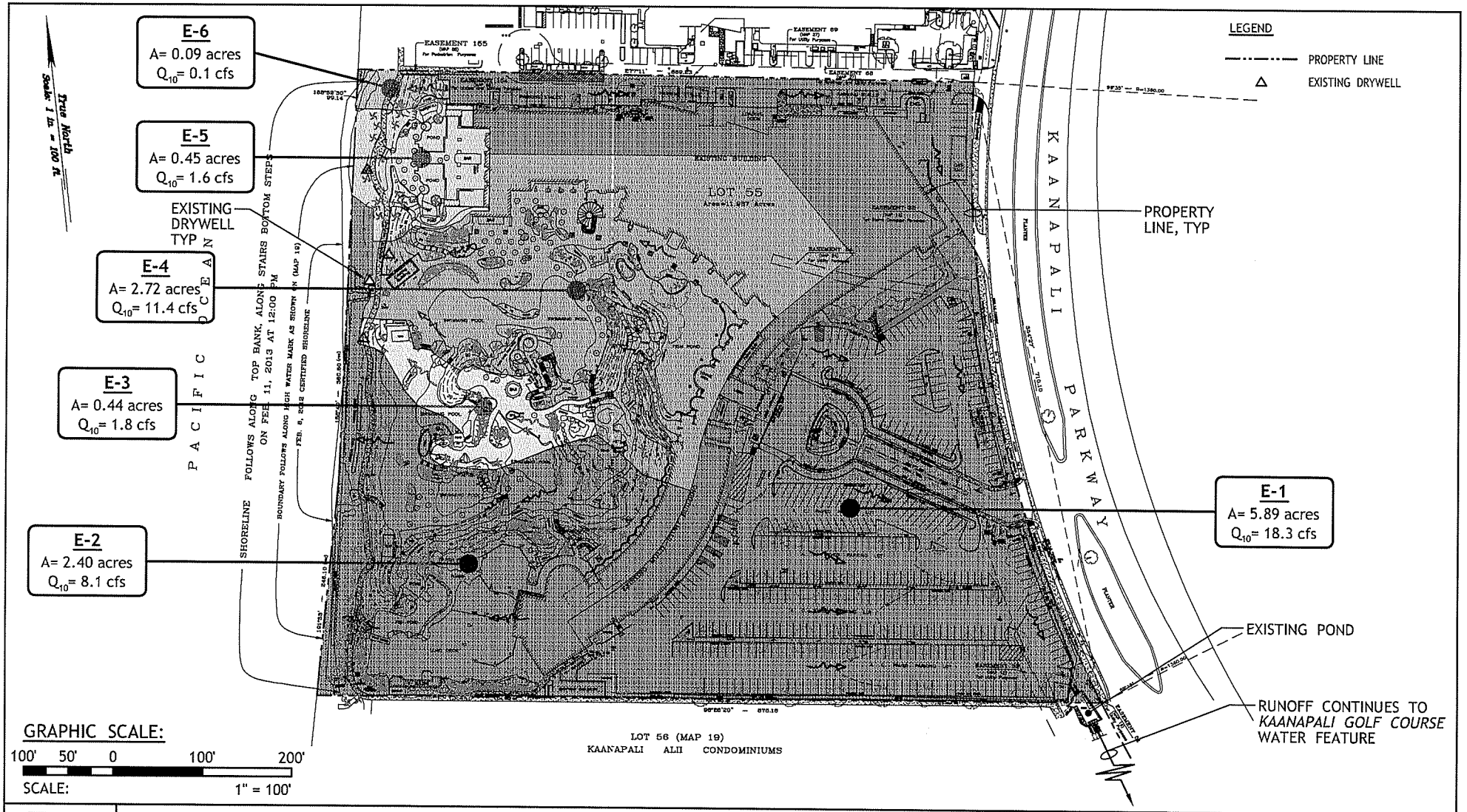
REFERENCES

1. "Rules for the Design of Storm Drainage Facilities in the County of Maui", Department of Public Works and Waste Management, County of Maui, July 1995.

2. "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii", United States Department of Agriculture Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, August 1972.

APPENDIX A

Figure A1	Existing Drainage Map
Figure A2	Proposed Drainage Map
Table A1	Existing Peak Flow Calculations
Table A2	Proposed Peak Flow Calculations
Table A3	Existing Condition Runoff Volumes
Table A4	Proposed Condition Runoff Volumes



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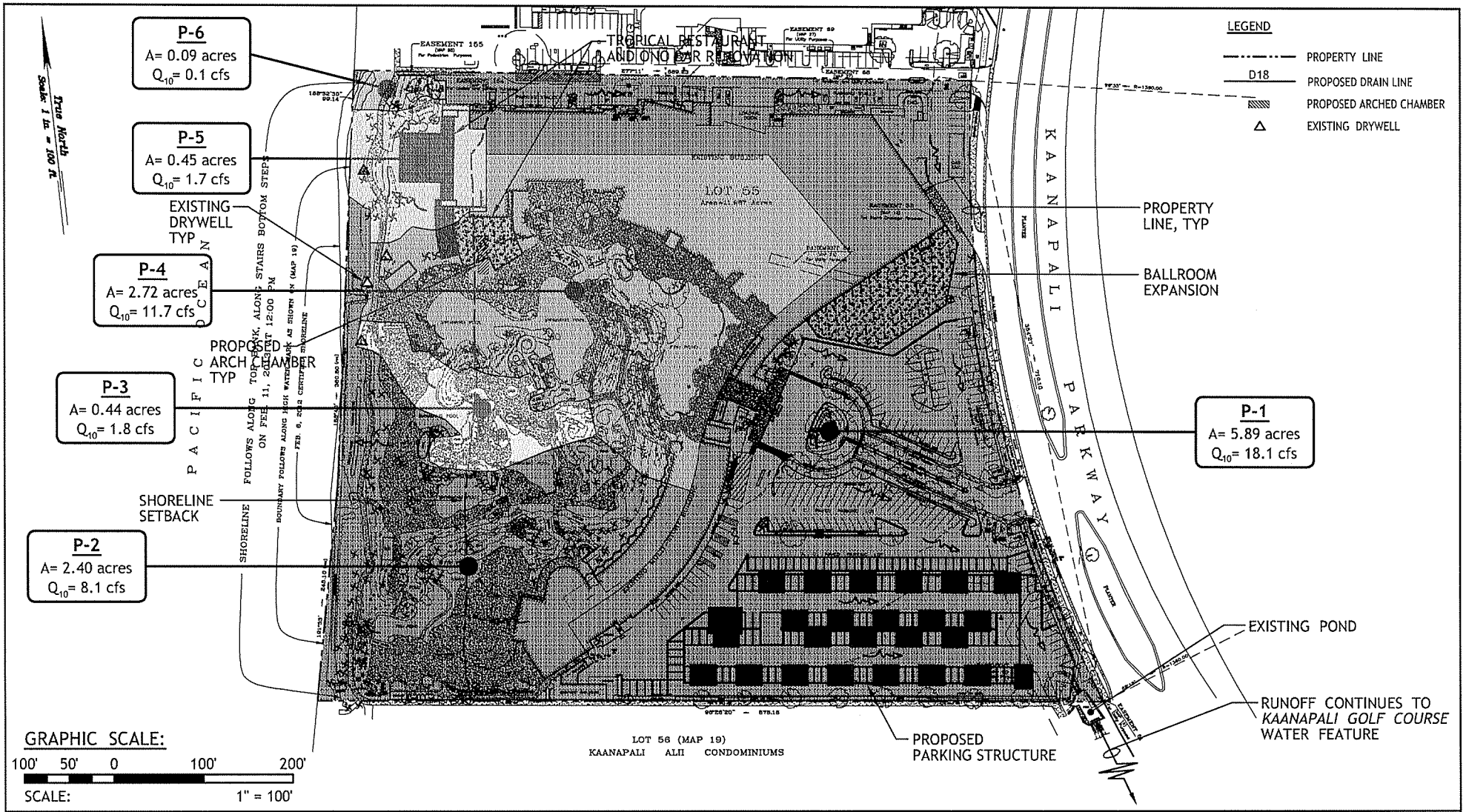
WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

EXISTING DRAINAGE MAP

Figure
A1



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WESTIN MAUI RENOVATION
KAANAPALI, MAUI, HAWAII

PROPOSED DRAINAGE MAP

Figure
A2

Table A1 - Existing Peak Flow Calculations

Subbasin	(1) C	(2) I_{10} in/hr	Subbasin Area acres	(3) L feet	(4) Slope %	(5) Tc min	(6) I'_{10} in/hr	(7) Q_{10} cfs	Discharge Location
E-1	0.84	2	5.89	1250	0.64%	15	3.7	18.3	exising pond
E-2	0.66	2	2.40	323	7.41%	7	5.1	8.1	towards ocean
E-3	0.78	2	0.44	250	5.16%	6	5.1	1.8	drywell
E-4	0.82	2	2.72	450	1.78%	8	5.1	11.4	drywell
E-5	0.70	2	0.45	86	15.00%	<6	5.1	1.6	drywell
E-6	0.29	2	0.09	100	14.30%	6.6	5.1	0.1	towards ocean
			11.99					**41.2**	

Table A2 - Proposed Peak Flow Calculations

Subbasin	(1) C	(2) I_{10} in/hr	Subbasin Area acres	(3) L feet	(4) Slope %	(5) Tc min	(6) I'_{10} in/hr	(7) Q_{10} cfs	Discharge Location
P-1	0.83	2	5.89	1250	0.64%	15	3.7	18.1	existing pond
P-2	0.66	2	2.40	323	7.41%	7	5.1	8.1	towards ocean
P-3	0.78	2	0.44	250	5.16%	6	5.1	1.8	drywell
P-4	0.84	2	2.72	450	1.78%	8	5.1	11.7	drywell
P-5	0.72	2	0.45	110	1.95%	<6	5.1	1.7	drywell
P-6	0.29	2	0.09	100	14.30%	<6	5.1	0.1	towards ocean
			11.99					**41.4**	

(1) Weighted runoff coefficient (C)
(2) 1-hour rainfall value (I) from Plate 4 of Reference 1
(3) Overland flow length, L
(4) Percent slope
(5) Time of concentration (Tc) obtained from Plate 1 of Reference 1
(6) Design rainfall value (I') from Plate 2 of Reference 1
(7) Peak Flow Rate (Q) = C x I' x A

Table A3 - Existing Conditon Runoff Volumes

Subbasin	(1) C	(2) I_{50} in/hr	Subbasin Area acres	(3) V_{50} cf
E-1	0.84	2.5	5.89	44,899.5
E-2	0.66	2.5	2.40	14,374.8
E-3	0.78	2.5	0.44	3,114.5
E-4	0.82	2.5	2.72	20,240.9
E-5	0.70	2.5	0.45	2,858.6
E-6	0.29	2.5	0.09	236.9
			11.99	**85,725.2**

Table A4 - Proposed Conditon Runoff Volumes

Subbasin	(1) C	(2) I_{50} in/hr	Subbasin Area acres	(3) V_{50} cf
P-1	0.83	2.5	5.89	44,365.0
P-2	0.66	2.5	2.40	14,374.8
P-3	0.78	2.5	0.44	3,114.5
P-4	0.84	2.5	2.72	20,734.6
P-5	0.72	2.5	0.45	2,940.3
P-6	0.29	2.5	0.09	236.9
			11.99	**85,766.0**

(1) Weighted runoff coefficient (C)
(2) 1-hour rainfall value (I) from Plate 7 of Reference 1
(3) Runoff Volume (V) = C x I x A x 3630

APPENDIX B

Table B1 Weighted Runoff Coefficent – Existing Condition

Table B2 Weighted Runoff Coefficent – Proposed Condition

EXCERPTS FROM REFERENCE 1

Table 2 Runoff Coefficients

Plate 1 Overland Flow Chart

Plate 2 Intensity Duration 1 hr Rainfall Curves

Plate 4 10 year 1 hour Rainfall

Plate 7 50 year 1 hour Rainfall

Table B1 - Weighted Runoff Coefficients - Existing Condition

Subbasin	Type of Drainage Area	A_x Area (acres)	A Total Area (acres)	(1) C_x	(2) Weighted C
E-1	Pervious	0.74	5.89	0.10	0.84
	Impervious	5.15		0.95	
E-2	Pervious	0.81	2.40	0.10	0.66
	Impervious	1.59		0.95	
E-3	Pervious	0.09	0.44	0.10	0.78
	Impervious	0.36		0.95	
E-4	Pervious	0.41	2.72	0.10	0.82
	Impervious	2.31		0.95	
E-5	Pervious	0.13	0.45	0.10	0.70
	Impervious	0.32		0.95	
E-6	Pervious	0.07	0.09	0.10	0.29
	Impervious	0.02		0.95	
			11.99		

Table B2 - Weighted Runoff Coefficients - Proposed Condition

Subbasin	Type of Drainage Area	A_x Area (acres)	A Total Area (acres)	(1) C_x	(2) Weighted C
P-1	Pervious	0.80	5.89	0.10	0.83
	Impervious	5.09		0.95	
P-2	Pervious	0.81	2.40	0.10	0.66
	Impervious	1.59		0.95	
P-3	Pervious	0.09	0.44	0.10	0.78
	Impervious	0.36		0.95	
P-4	Pervious	0.37	2.72	0.10	0.84
	Impervious	2.35		0.95	
P-5	Pervious	0.13	0.45	0.10	0.72
	Impervious	0.33		0.95	
P-6	Pervious	0.07	0.09	0.10	0.29
	Impervious	0.02		0.95	
			11.99		

(1) Runoff coefficient (C) provided from Table 2 of Reference 1

(2) Weighted C $= \dfrac{\sum (C_x A_x)}{A}$

Table 1

GUIDE FOR THE DETERMINATION OF RUNOFF COEFFICIENTS FOR BUILT-UP AREAS*

WATERSHED CHARACTERISTICS	EXTREME	HIGH	MODERATE	LOW
INFILTRATION	NEGLIGIBLE 0.20	SLOW 0.14	MEDIUM 0.07	HIGH 0.0
RELIEF	STEEP (> 25%) 0.08	HILLY (15-25%) 0.06	ROLLING (5-15%) 0.03	FLAT (0-5%) 0.0
VEGETAL COVER	NONE 0.07	POOR (< 10%) 0.05	GOOD (10-50%) 0.03	HIGH (50-90%) 0.0
DEVELOPMENT TYPE	INDUSTRIAL & BUSINESS 0.55	HOTEL-APARTMENT 0.45	RESIDENTIAL 0.40	AGRICULTURAL 0.15

**NOTE: The design coefficient "c" must result from a total of the values for all four watershed characteristics of the site.*

Table 2

RUNOFF COEFFICIENTS

Type of Drainage Area	Runoff Coefficient C
Business:	
Downtown areas	0.95
Neighborhood areas	0.70
Residential:	
Single-family areas	0.50
Multi-units, detached	0.60
Multi-units, attached	0.75
Suburban	0.40
Apartment dwelling areas	0.70
Industrial:	
Light areas	0.80
Heavy areas	0.90
Parks, cemeteries	0.25
Playgrounds	0.35
Railroad-yard areas	0.40
Unimproved areas	0.30
Streets:	
Asphaltic	0.95
Concrete	0.95
Brick	0.85
Drive and walks	0.85
Roofs	0.95
Lawns:	
Sandy, soil, flat, 2%	0.10
Sandy, soil, avg., 2-7%	0.15
Sandy, soil, steep, 7%	0.20
Heavy soil, flat, 2%	0.17
Heavy soil, avg., 2-7%	0.22
Heavy soil, steep, 7%	0.35

EXISTING CONDITION

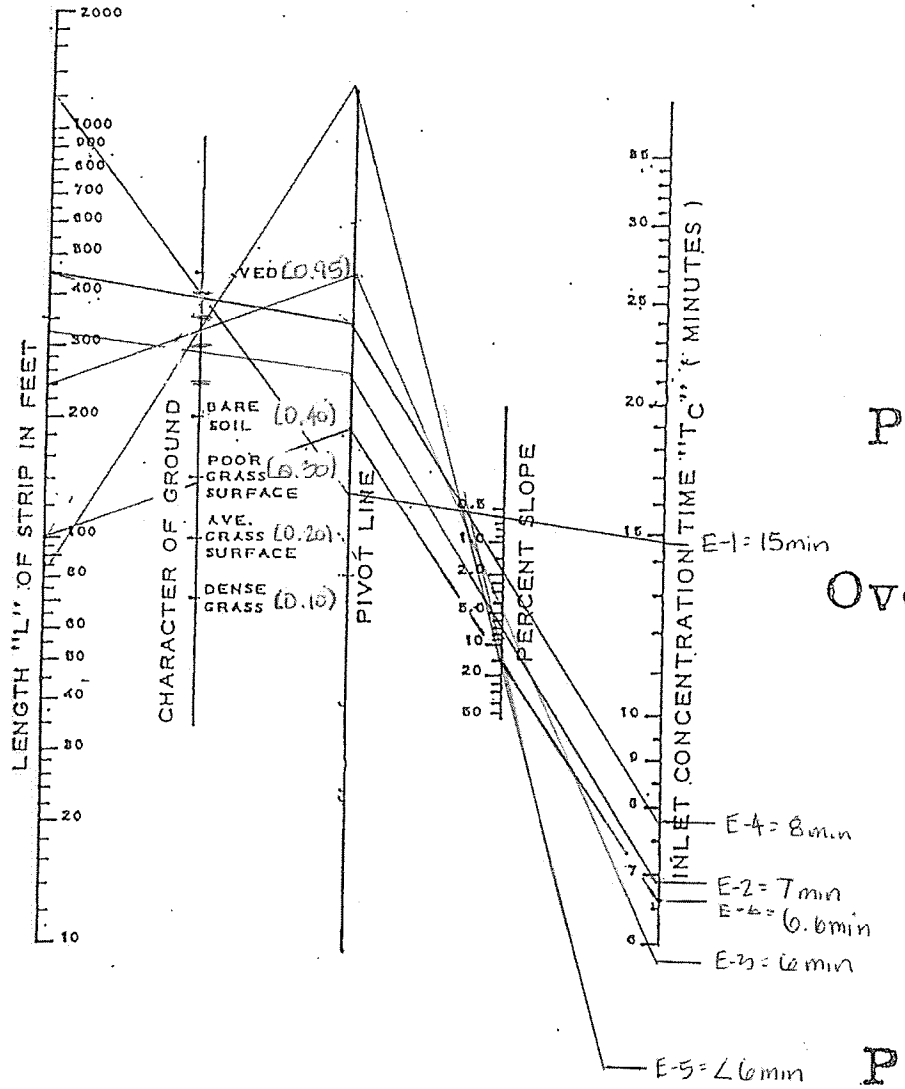
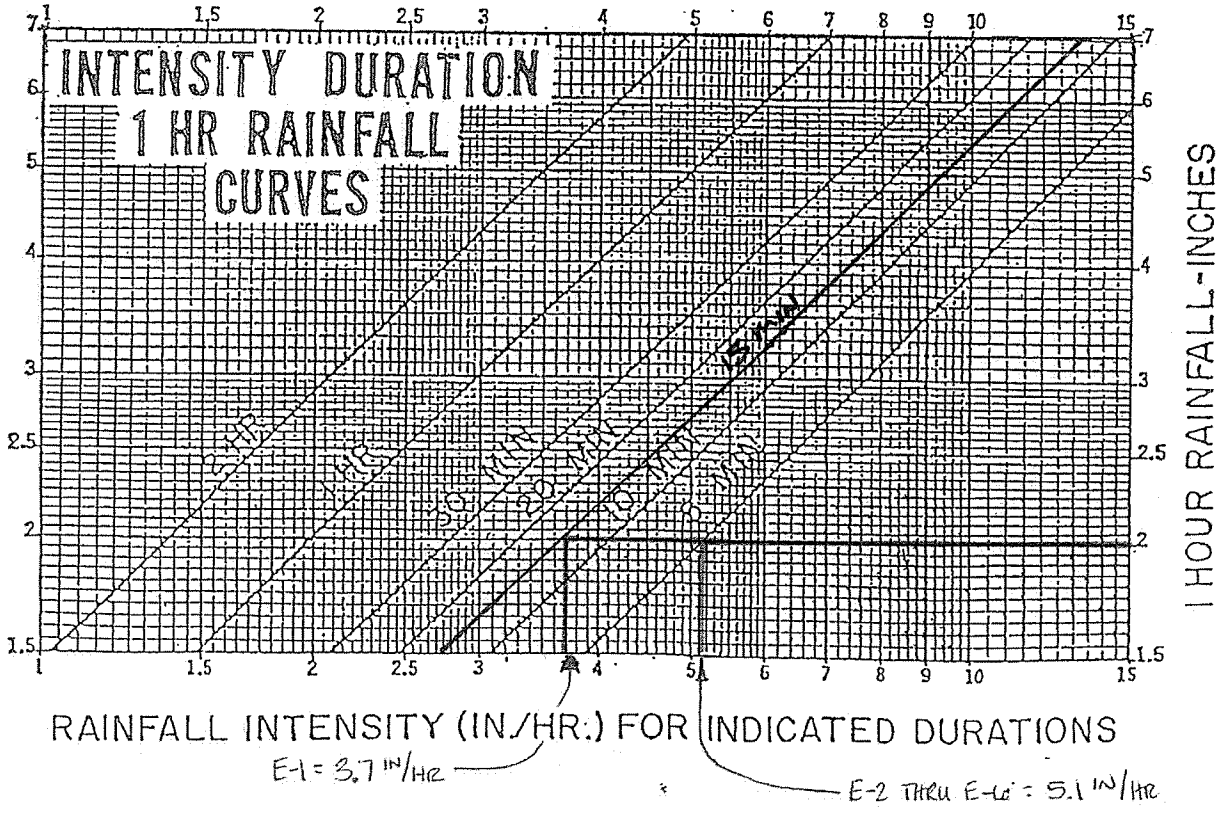


Plate 1

Overland Flow Chart

Plate 2



PROPOSED CONDITION

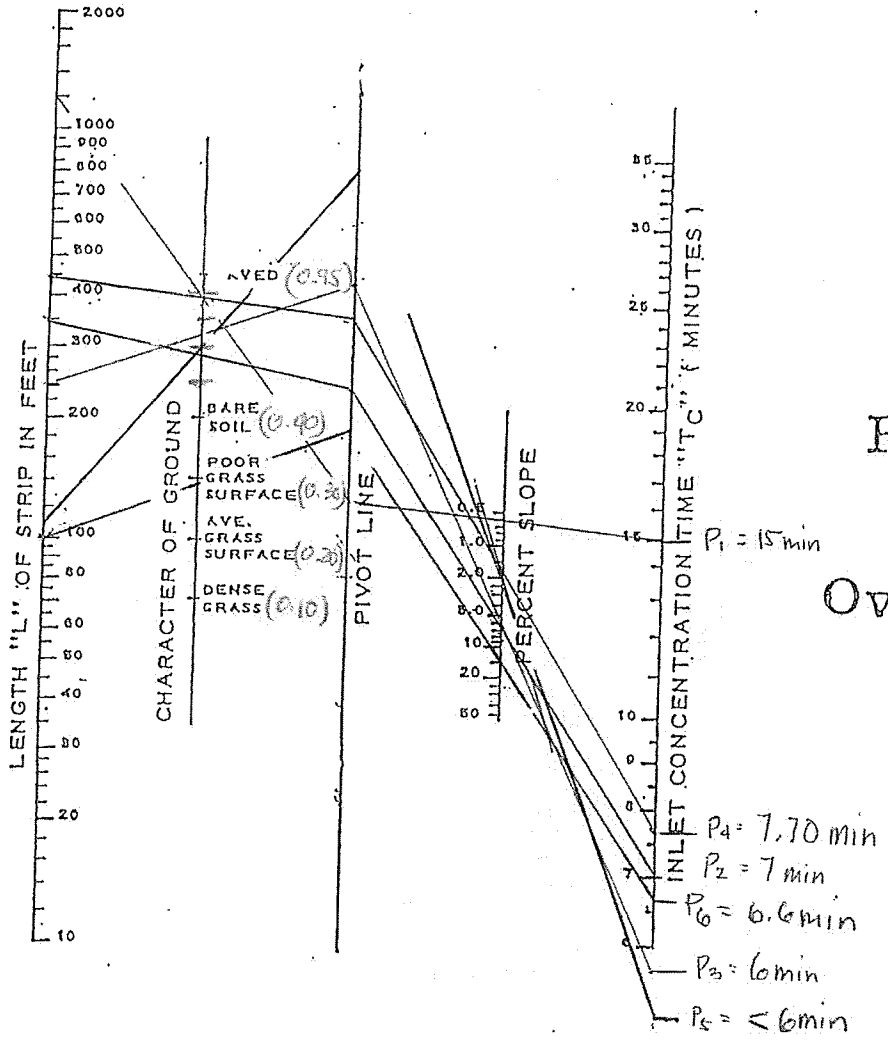
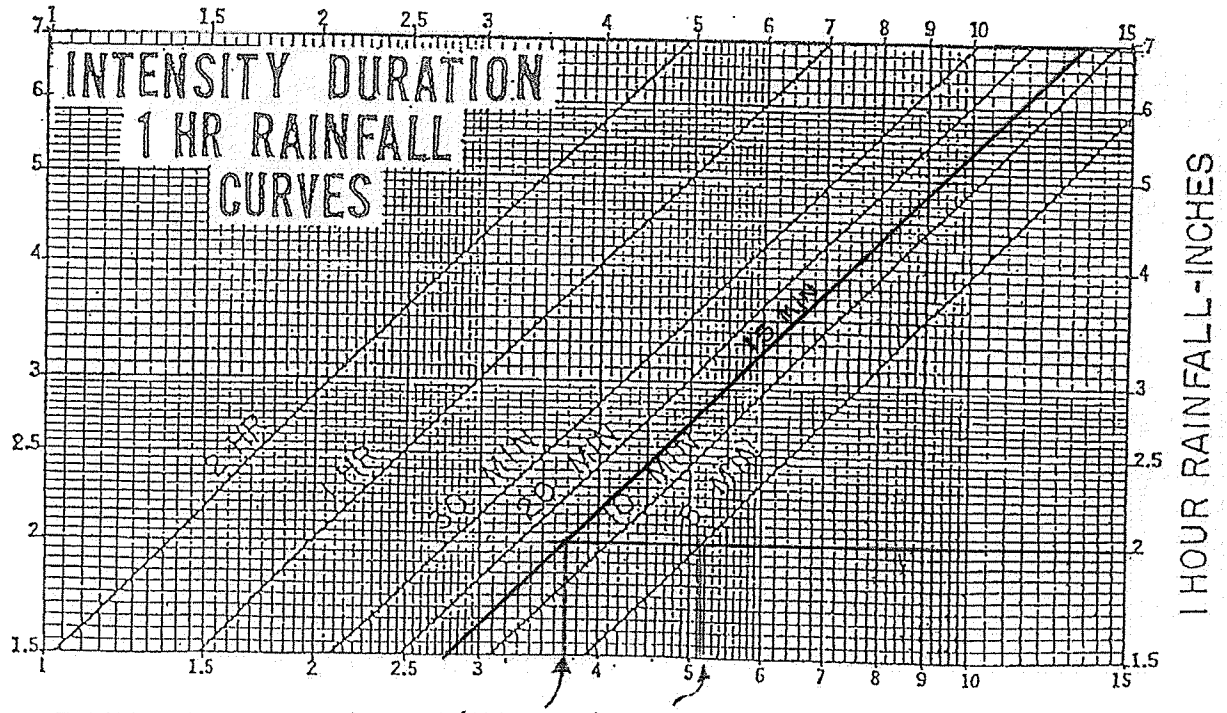
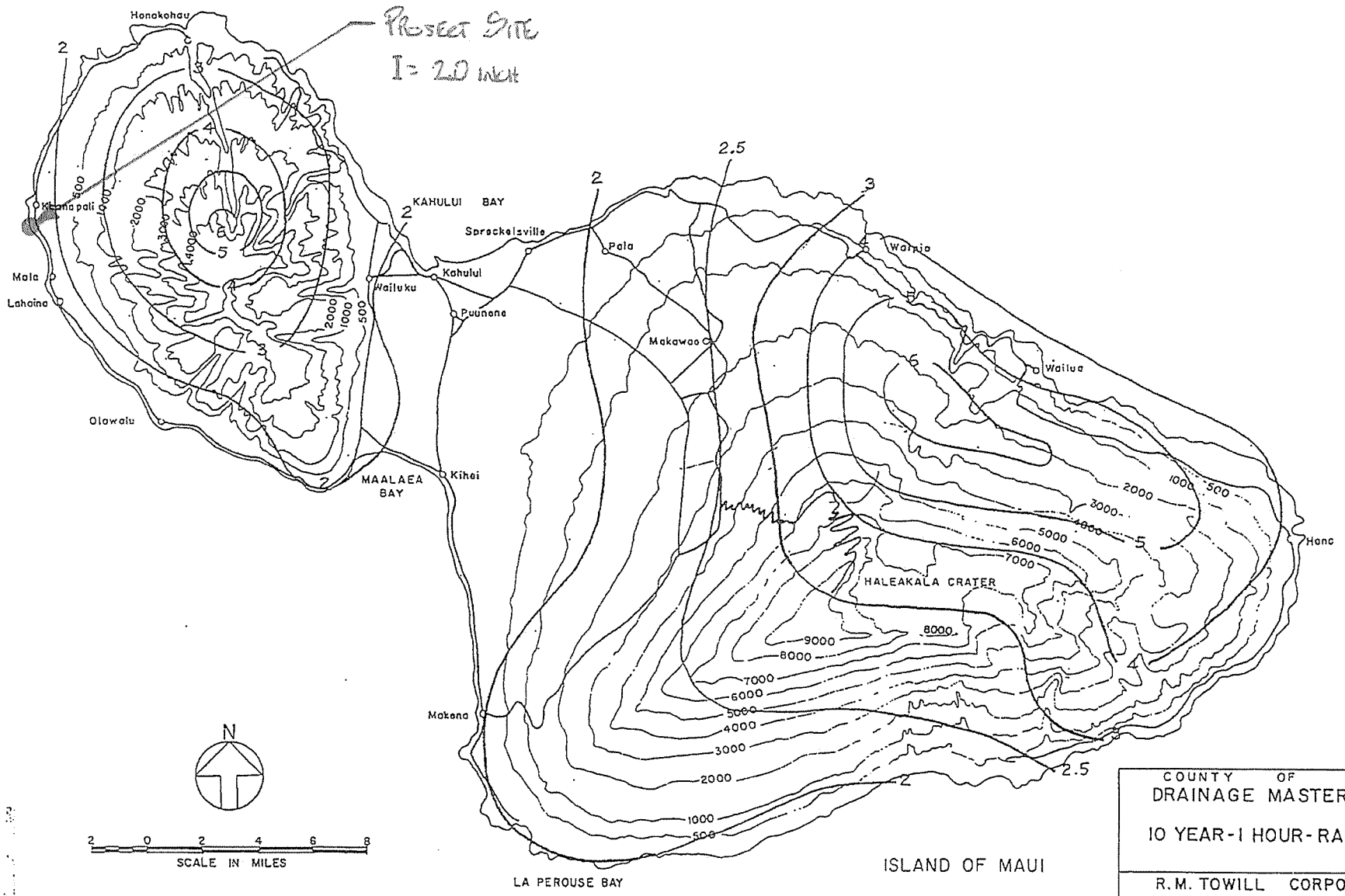


Plate 1

Overland Flow Chart

Plate 2





COUNTY OF MAUI
DRAINAGE MASTER PLAN
10 YEAR-1 HOUR-RAINFALL

R.M. TOWILL CORPORATION
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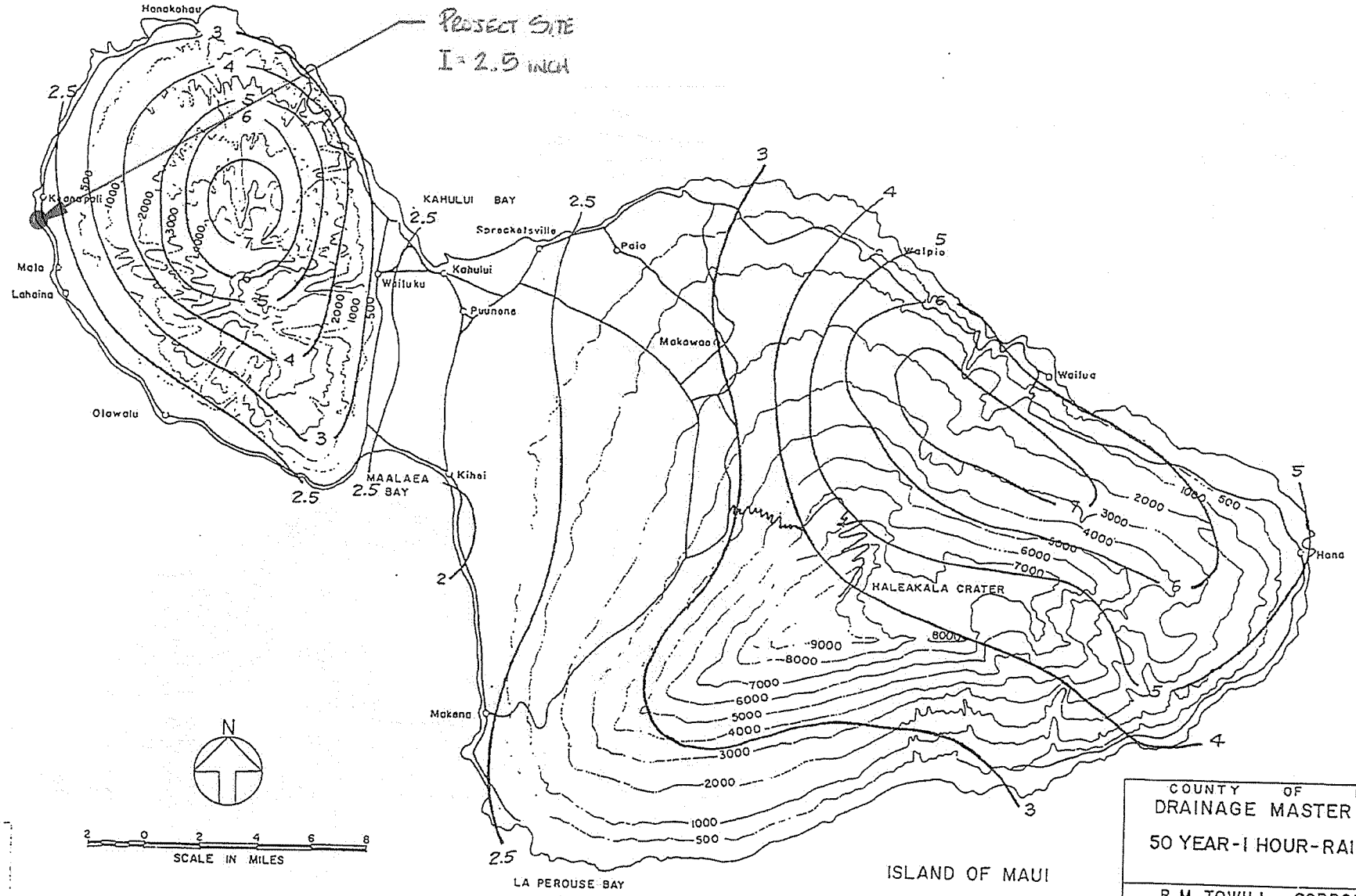
PLATE 4



COUNTY OF MAUI
DRAINAGE MASTER PLAN
50 YEAR-1 HOUR-RAINFALL

R. M. TOWILL CORPORATION
CIVIL ENGINEERS - SURVEYORS

PLATE 7

APPENDIX B.

Archaeological Inventory Survey Report

FINAL – Archaeological Assessment for the Proposed Westin Maui Resort & Spa Master Plan Improvements, Hanakaʻōʻō Ahupuaʻa, Lāhainā District, Island of Maui, TMK (2)-4-4-008:019

Prepared for

Munekiyo & Hiraga, Inc.

FINAL

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Management Summary

Reference	FINAL – Archaeological Assessment for the Proposed Westin Maui Resort & Spa Master Plan Improvements Project, Hanaka'ō'ō Ahupua'a, Lāhainā District, Island of Maui, TMK (2)-4-4-008:019 (Lee-Greig and Hammatt 2014)
Date	May 2014 (FINAL)
Project Number (s)	Cultural Surveys Hawai'i (CSH) Job Code: HANAKAOO 4
Investigation Permit Number	CSH completed the archaeological inventory survey fieldwork under state archaeological fieldwork permit No. 13-06 issued by the State Historic Preservation Division (SHPD), per Hawai'i Administrative Rules (HAR) § 13-13-282.
Project Location	The project area is located within the *ahupua'a* of Hanaka'ō'ō, District of Lāhainā, Maui. Island as depicted on the 1992 USGS 7.5 minute topographic map, Lahaina quadrangle.
Land Jurisdiction	Private: Starwood Hotels & Resorts
Agencies	State: Department of Land & Natural Resources/State Historic Preservation Division (DLNR/ SHPD) County of Maui

Project Description

The proposed Westin Maui Master Plan Improvements project includes various components as outlined below:

Proposed Improvement	Description
New Parking Structure	3 ½ to 4 ½ -story parking garage is proposed in the existing south parking lot area. Proposed structure will be approximately 36 feet (ft) high, approximately 375 ft long and 122 ft wide. The proposed parking structure will be oriented in a east-west direction
New Landscaping Facility	This facility is proposed in the lower level of the parking structure.
Ballroom Expansion and Meeting Room Expansion	Renovation and expansion to existing ballrooms and meeting rooms. Proposed expansion will extend ballroom to approximately 12,000 square feet (sq ft) to the east and meeting rooms extended to 9,500 sq. ft. Additionally, interior improvements and renovations are proposed including upgrading of electrical fixtures, furnishings, etc. The proposed expansion area will be in an area that was previously developed and utilized for indoor and outdoor pre-function areas.
New Back of House Structure	A one-story facility of approximately 3,070 sq. ft. on the northeast corner of the property and adjacent to the convention hall is proposed.
Removal of Existing Retail Space	Two (2) structures totaling approximately 2,300 sq ft in size, will be demolished and a man-made earth mound on the northwest corner of the property will be removed. Said structures are currently in the shoreline setback area and will be replaced with decking or landscaping.
Roof Additions	Two (2) areas are proposed for new roof structures to cover both existing as well as proposed deck area. Deck areas are utilized for restaurant use and roof structures will provide shade. The area of the roof structures are approximately 2,572 sq. ft. (near Tropical Restaurant) and 4,120 sq. ft. (adjacent to Relish Restaurant). Roof structures will be located partially within the shoreline setback area. Existing shade umbrellas will also be utilized.
Spa Improvements	Expansion of existing Spa facility, located on te second floor of the Ocean Tower by approximately 4,240 sq. ft. to include new areas for locker rooms and spa treatment and fitness areas. Expansion of the Spa area will be within the existing Ocean Tower building and will entail interior renovations to the existing built area.

<table>
<tr><td>Project Description (continued)</td><td>
<table>
<tr><th>Proposed Improvement</th><th>Description</th></tr>
<tr><td>Relocation of Existing Sewer Line</td><td>The relocation of a portion of an existing County of Maui sewer line within the south parking lot is proposed. The relocation is necessitated by the parking garage location.</td></tr>
<tr><td>Other Related Improvements</td><td>Other related improvements are also proposed including utility improvements, landscaping activities, and interior non- structural improvements including but not limited to painting, replacement of fixtures and interior renovations to existing building facilities, curb cuts to the bus turn around area to the north.</td></tr>
</table>
</td></tr>
<tr><td>Project Acreage</td><td>11.987 acres</td></tr>
<tr><td>Area of Potential Effect (APE) and Survey Acreage</td><td>While the entire parcel is comprised of approximately 11.987-acres, the area potential effect (APE) for this study is limited to areas that are proposed for ground disturbing activities. These areas were subjected to pedestrian and subsurface investigation and include the footprints of the planned parking structure, ballroom expansion area, new back of the house structure, and restaurant expansion totaling approximately 1.58 acres.</td></tr>
<tr><td>Historic Preservation Regulatory Context</td><td>The proposed project is subject to State of Hawai'i historic preservation review legislation [Hawai'i Revised Statutes (HRS) 6E-42/Hawai'i Administrative Rules (HAR) Chapter 13-13-275, respectively]. Due to the negative findings of the inventory survey fieldwork, this report was prepared in accordance with the requirements for an archaeological assessment report as stated in Hawai'i Administrative Rules (HAR) 13-275-5(b)(5)(A) and details the survey methods and results of the archaeological study.</td></tr>
<tr><td>Fieldwork Effort</td><td>The archaeological investigation of four areas of direct effect within the overall project (APE) was conducted over a period of 8 days, March 13th through 21st, 2013, by archaeologists Jonas Madeus, B.A. and Katie Sprouse, B.A. under the direct supervision of Tanya L. Lee-Greig, M.A. and Hallett H. Hammatt, Ph.D. An additional pedestrian inspection of the area slated for the proposed Back of the House Structure was conducted on December 26, 2013. A total of 17 person days were required to complete the fieldwork for this study.</td></tr>
<tr><td>Number of Historic Properties Identified</td><td>None</td></tr>
</table>

Historic Properties Recommended Eligible to the Hawai'i Register of Historic Places (Hawai'i Register)	None
Historic Properties Recommended Ineligible to the Hawai'i Register	None
Effect Recommendation	Negative findings notwithstanding, considering the results of previous archaeological monitoring programs on adjacent coastal lands within Hanaka'ō'ō Ahupua'a, as well as characteristics of the underlying soils and sediments within the current project area, a project effect determination of "potential for effect, with proposed mitigation" is recommended (see also Section 6 Project Effect and Mitigation Recommendations).
Mitigation Recommendation	Given the project effect recommendation, archaeological monitoring of all ground disturbing activities associated with the proposed project is recommended as an identification and mitigation measure per HAR 13-279-3.

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Section 1 Introduction

1.1 Project Background

At the request of Munekiyo & Hiraga, Inc., Cultural Surveys Hawai'i (CSH) conducted an archaeological inventory survey (AIS) study for the proposed Westin Maui Master Plan Improvements Project, located in Hanaka'ō'ō Ahupua'a, Lāhainā District, Maui Island TMK (2) (Figure 1 and Figure 2). Bordered by the Auau Channel to the west, Kā'anapali Parkway to the east, Whalers Shopping Village to the north , and Kā'anapali Ali'i Condominiums to south, the Westin Maui Resort & Spa is located on a portion of Kā'anapali Beach south of the basalt promontory named Pu'u Keka'a.

Current resort facilities include one primary structure consisting of two multi-story towers with attached two-story and single-story structures, two major water features consisting of a recreational pool area and Koi ponds; as well as, adjunct hotel amenities (Figure 3). At present, the proposed improvements include the following (see also Figure 4):

Proposed Improvement	Description
New Parking Structure	3 ½ to 4 ½ -story parking garage is proposed in the existing south parking lot area. Proposed structure will be approximately 36 feet (ft) high, approximately 375 ft long and 122 ft wide. The proposed parking structure will be oriented in a east-west direction
New Landscaping Facility	This facility is proposed in the lower level of the parking structure.
Ballroom Expansion and Meeting Room Expansion	Renovation and expansion to existing ballrooms and meeting rooms. Proposed expansion will extend ballroom to approximately 12,000 square feet (sq ft) to the east and meeting rooms extended to 9,500 sq. ft. Additionally, interior improvements and renovations are proposed including upgrading of electrical fixtures, furnishings, etc. The proposed expansion area will be in an area that was previously developed and utilized for indoor and outdoor pre-function areas.
New Back of House Structure	A one-story facility of approximately 3,070 sq. ft. on the northeast corner of the property and adjacent to the convention hall is proposed.
Removal of Existing Retail Space	Two (2) structures totaling approximately 2,300 sq ft in size, will be demolished and a man-made earth mound on the northwest corner of the property will be removed. Said structures are currently in the shoreline setback area and will be replaced with decking or landscaping.
Roof Additions	Two (2) areas are proposed for new roof structures to cover both existing as well as proposed deck area. Deck areas are utilized for restaurant use and roof structures will provide shade. The area of the roof structures are approximately 2,572 sq. ft. (near Tropical Restaurant) and 4,120 sq. ft. (adjacent to Relish Restaurant). Roof structures will be located partially within the shoreline setback area. Existing shade umbrellas will also be utilized.

Proposed Improvement	Description
Spa Improvements	Expansion of existing Spa facility, located on te second floor of the Ocean Tower by approximately 4,240 sq. ft. to include new areas for locker rooms and spa treatment and fitness areas. Expansion of the Spa area will be within the existing Ocean Tower building and will entail interior renovations to the existing built area.
Relocation of Existing Sewer Line	The relocation of a portion of an existing County of Maui sewer line within the south parking lot is proposed. The relocation is necessitated by the parking garage location.
Other Related Improvements	Other related improvements are also proposed including utility improvements, landscaping activities, and interior, non-non structural improvements including but not limited to painting, replacement of fixtures and interior renovations to existing building facilities, curb cuts to the bus turn around area to the north.

Based on available information, it is not anticipated that the proposed project will impose adverse visual, auditory, or other environmental impacts to any previously identified historic properties located in vicinity of, or directly adjacent to, the current project area (see also Section 3.2 Previous Archaeological Research). While the entire area of potential effect (APE) for the project parcel is comprised of approximately 11.987-acres, the area of direct impact is limited to areas of anticipated ground disturbing activities, which include the footprints of the planned parking structure (~1.1 acres), ballroom/convention center expansion (~0.26 acres), new back of the house structure (~0.04 acres), and restaurant expansion (~0.14 acres), for a total of an approximate 1.58 acre area (Figure 4).

The proposed project is subject to State of Hawai'i historic preservation review legislation [Hawai'i Revised Statutes (HRS) 6E-42/Hawai'i Administrative Rules (HAR) Chapter 13-13-275, respectively]. Due to the negative findings of the inventory survey fieldwork, this report was prepared in accordance with the requirements for an archaeological assessment report as stated in Hawai'i Administrative Rules (HAR) 13-275-5(b)(5)(A) and details the survey methods and results of the archaeological study.

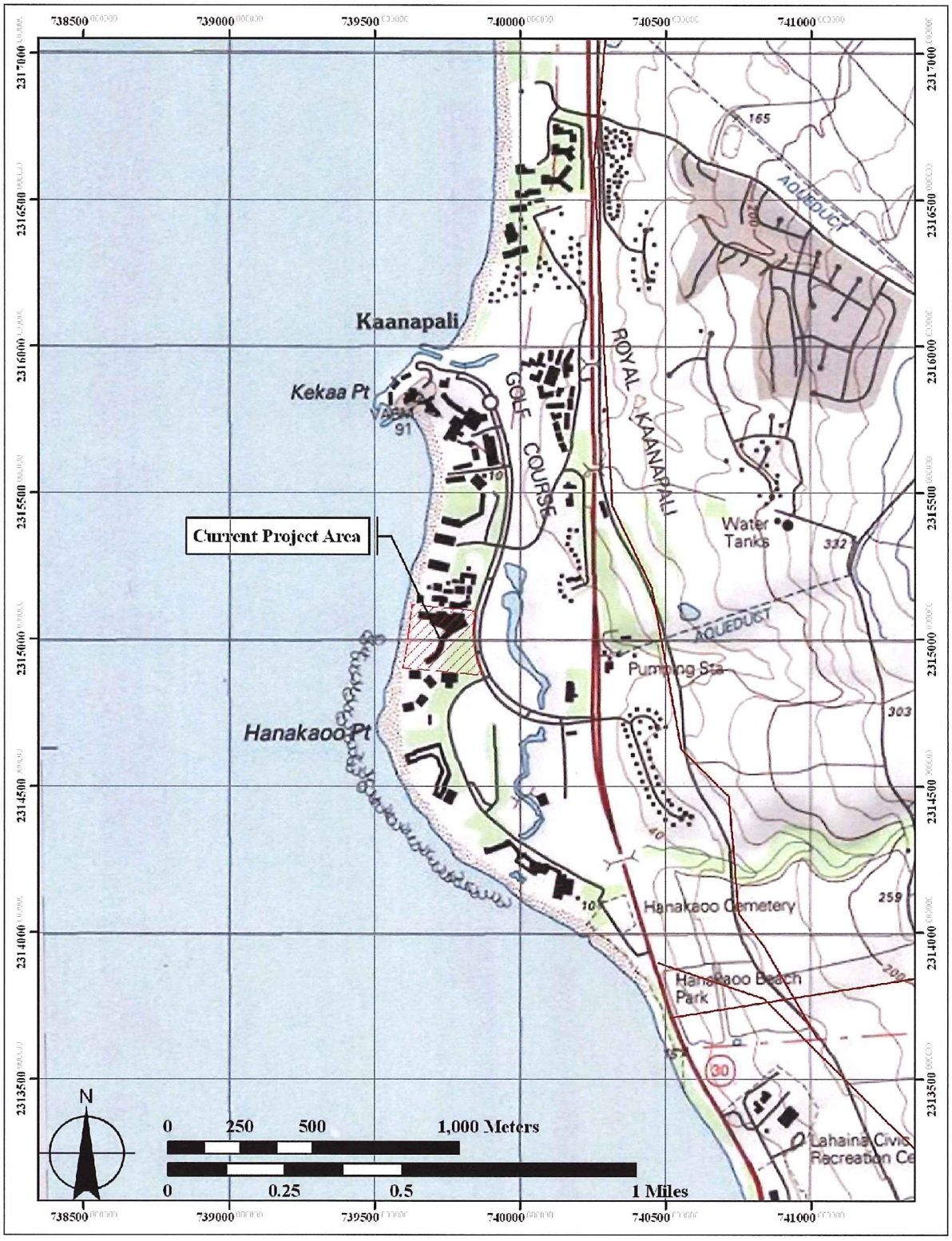


Figure 1. A portion of the 1992 Lāhainā 7.5-minute U.S.G.S. topographic quadrangle, current project area cross-hatched in red.

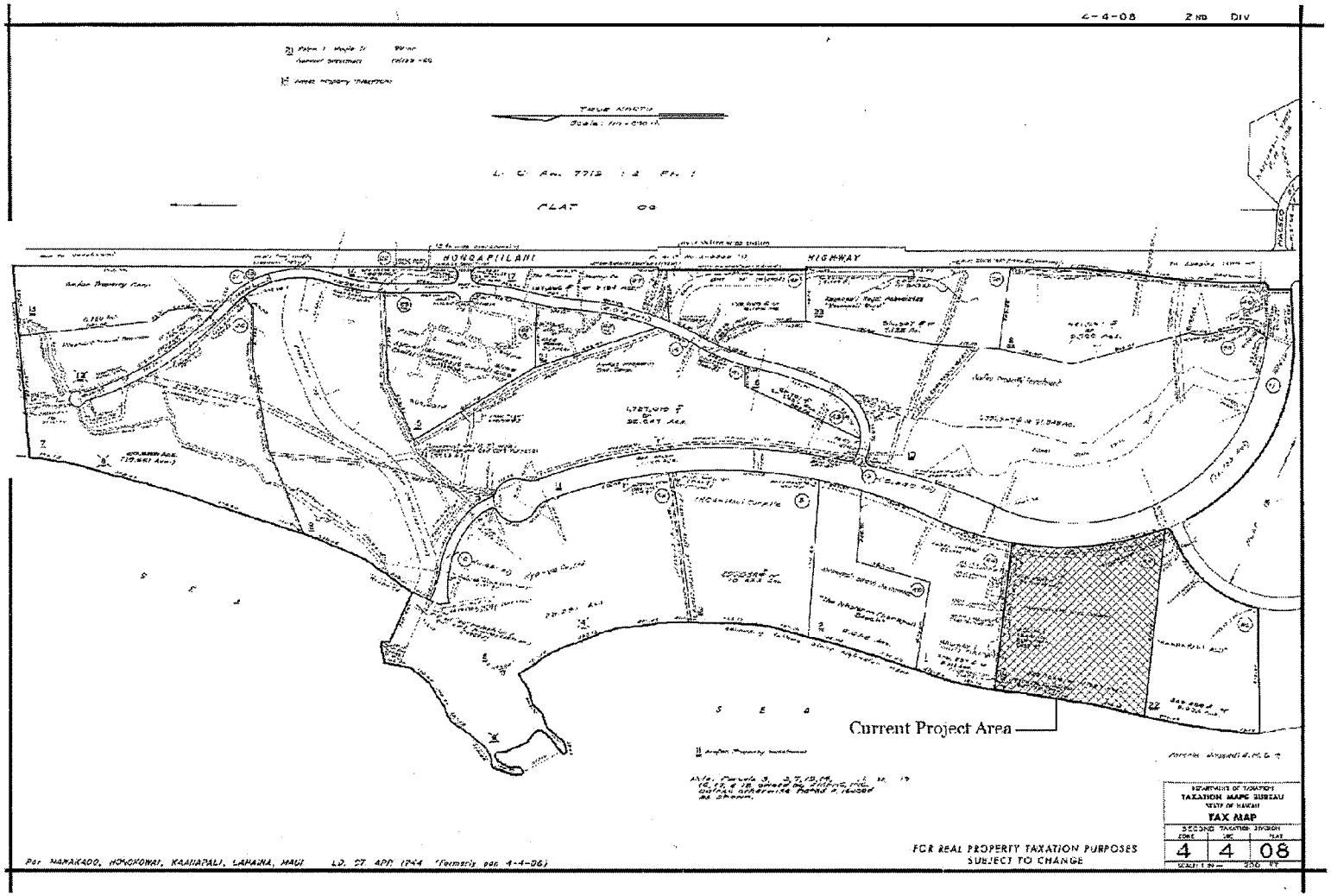


Figure 2. Tax Map Key (2) 4-4-08, showing project area hatched in black.

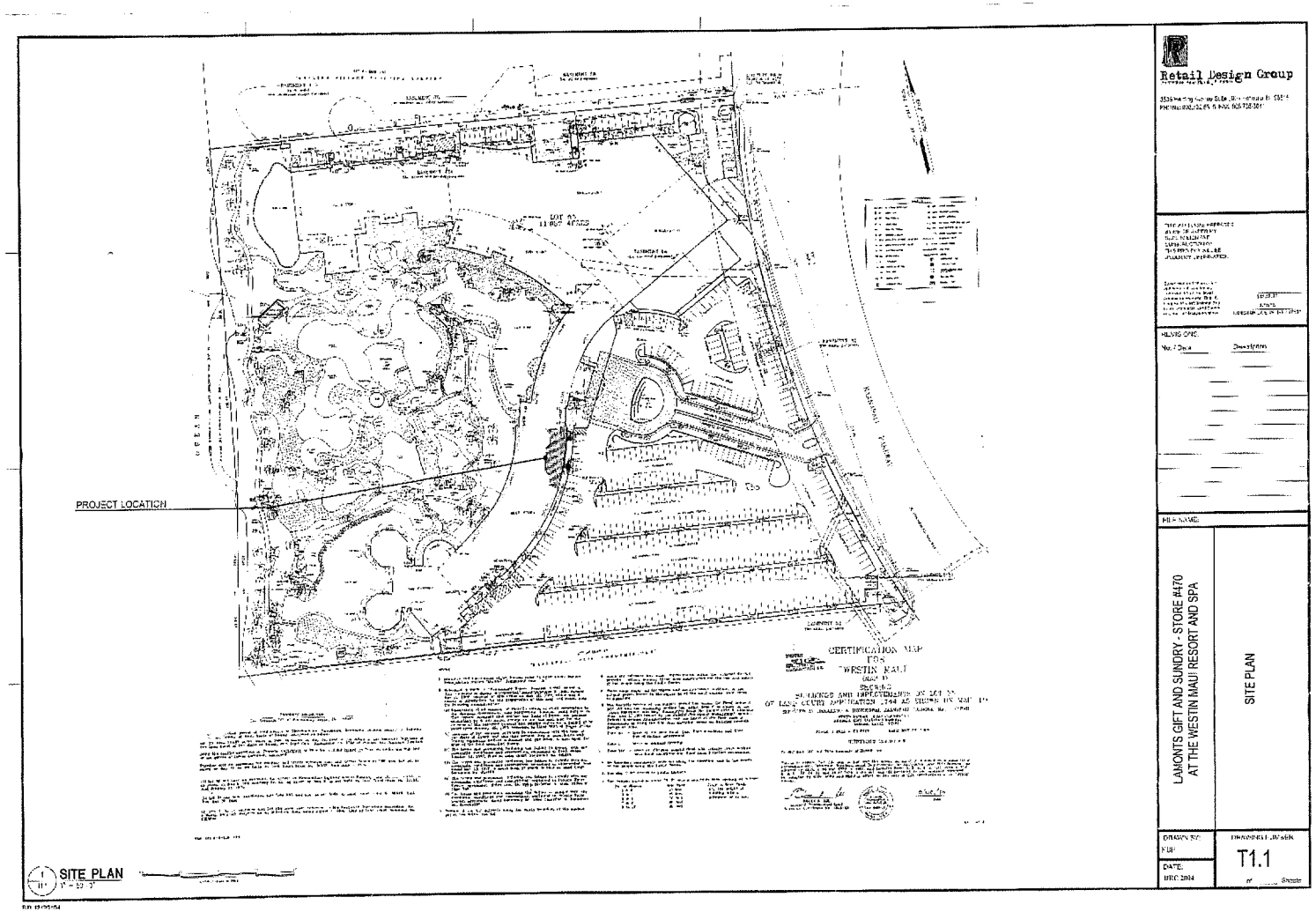


Figure 3. 1998 Westin Maui Resort & Spa Site Plan (plan courtesy of Munekiyo & Hiraga, Inc.)

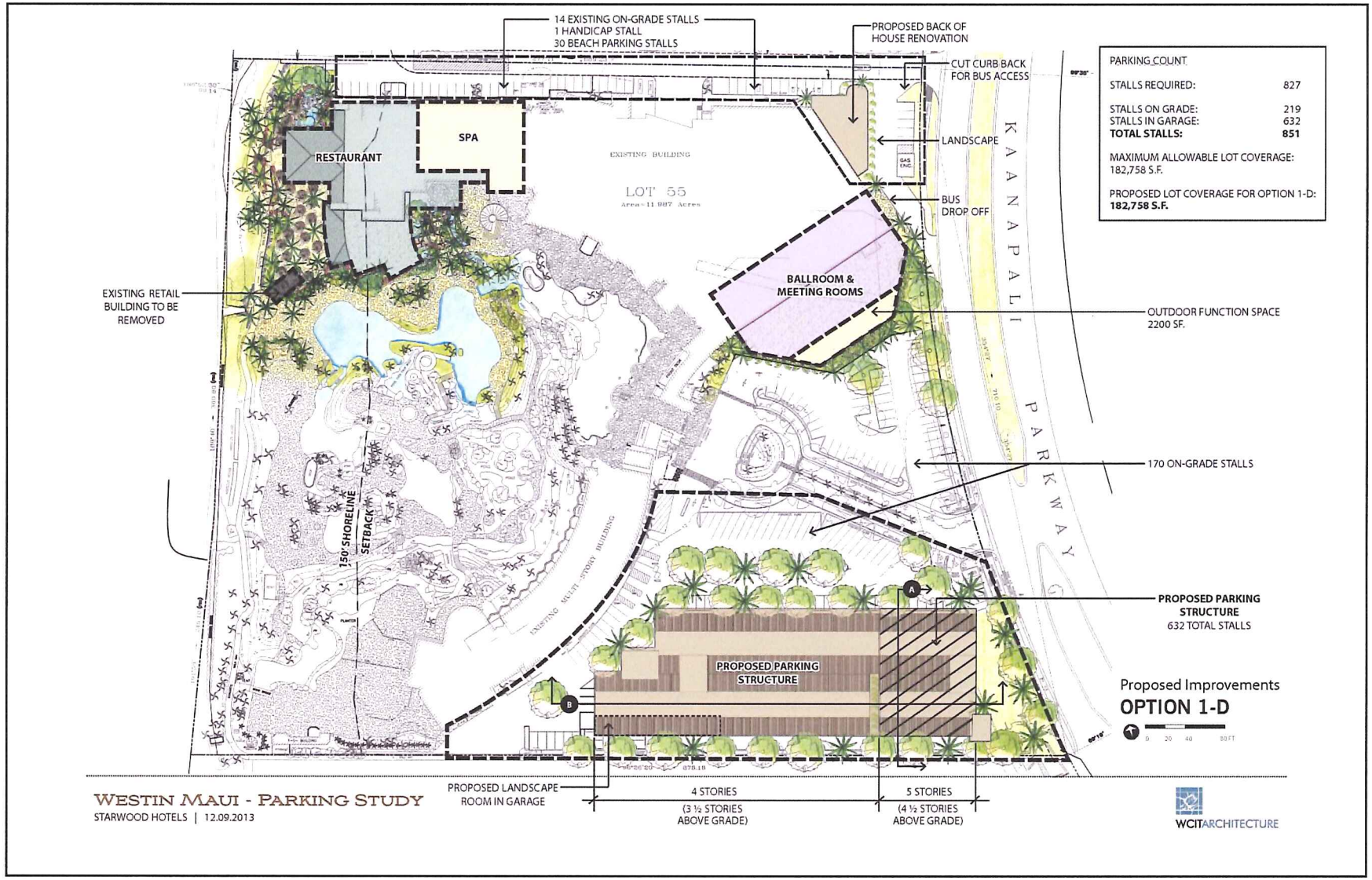


Figure 4. Currently Proposed Westin Maui Resort & Spa Improvements (plan courtesy of Munekiyo & Hiraga, Inc.)

1.2 Scope of Work

The scope of work outlined below was designed to satisfy the Hawai'i state requirements for Archaeological Inventory Surveys (Hawai'i Administrative Rules [HAR] Chapter 13-276 and Chapter 13-275/284) for the proposed project and included:

1. Historic and archaeological background research, including a search of historic maps, written records, Land Commission Award documents, and reports from prior archaeological investigations. The research will focused on the specific project area's past land use, with a general background on the pre-Contact and historic settlement patterns of the ahupua'a, and district. The background information was used to compile a predictive model for the types and locations of historic properties that may have been expected within the proposed project area.
2. A pedestrian inspection of the proposed project area to identify the presence of any potentially significant historic properties. In the event of a surface find, potentially significant historic properties would have been recorded with an evaluation of age, function, interrelationships, and significance. Documentation would have included photographs and drawings to scale. If warranted, limited controlled excavation of selected sites and/or features would have been conducted.
3. In order to create a program of subsurface testing to adequately address the constraints and concerns of the project, a Ground Penetration Radar (GPR) survey of the portion of the proposed APE was undertaken.
4. Based on the project area's environment, the results of the background research, and results of the GPR survey, mechanical subsurface testing was carried out to identify and document potentially significant subsurface historic properties that would not have been located through the surface pedestrian inspection.
5. In the event that potentially significant subsurface historic properties were identified during mechanical testing, these properties would have been documented to the extent possible, including geographic extent, content, function/derivation, age, interrelationships, and significance. In the event that botanical and/or charcoal samples with contextual integrity were encountered, these samples would have been collected and analyzed for cultural and chronological information.
6. As appropriate, consultation with knowledgeable individuals regarding the project area's history, past land use, and the function and age of the historic properties documented within the project area would be undertaken.
7. As appropriate, laboratory work to process and gather relevant environmental and/or archaeological information from collected samples.
8. Preparation of an inventory survey report, which would include the following:
    a. A project description;
    b. A section of a USGS topographic map showing the project area boundaries and the location of all recorded historic properties;
    c. Historical and archaeological background sections summarizing prehistoric and historic land use of the project area and its vicinity;
    d. Descriptions of all historic properties, including selected photographs, scale drawings, and discussions of age, function, laboratory results, and significance, per the requirements of HAR 13-276. Each historic property will be assigned a Hawai'i State Inventory of Historic Properties number;

e. If appropriate, a section concerning cultural consultations [per the requirements of HAR 13-276-5(g) and HAR 13-275/284-8(a)(2)].

f. A summary of historic property categories, integrity, and significance based upon the Hawai'i Register of Historic Places criteria;

g. A project effect recommendation;

h. Treatment recommendations to mitigate the project's adverse effect on any historic properties identified in the project area that are recommended eligible to the Hawai'i Register of Historic Places.

1.3 Environmental Setting

1.3.1 Natural Environment

The current project area is located on the leeward coastline of the West Maui Mountains, along the alluvial fan of Hanakao'o Ahupua'a and fronting a portion of Kā'anapali Beach less than half a mile (~750m) south of the basalt promontory named Pu'u Keka'a. The underlying alluvial soils are a result of depositional processes associated with Hahakea and Wahikuli Streams; as well as, smaller un-named drainages located east and *mauka* of the current project area. At approximately 580,000 years old, the formation of Pu'u Keka'a can be considered a relatively recent geologic event when compared to the late Tertiary through early Pleistocene (~5.3-2 million year [ma]) flows that completed the West Maui Mountains (Stearns and MacDonald 1942:157, 180). Pu'u Keka'a is the product of rejuvenated-stage volcanic activity (Tagami et al. 2003) composed of thin flows of picritic basalt inter-bedded with cinder and spatter (Stearns and MacDonald 1942:180).

The lands of the current project area are generally flat and rises to an approximate elevation of 13 feet (4m) above mean sea level (amsl). Soils within the project area are generally described as the Pulehu-Ewa-Jaucus association (Foote et al. 1972:General Soil Map, Maui Island), which consists of deep, nearly level to moderately sloping, well-drained and excessively drained soils that are found on alluvial fans and in basins (Foote et al. 1972:8). More specifically, the soil units found within the current project area consist Beach Sands (BS) and Jaucas Sand 0-15% slopes (JaC) along the beachfront, and Ewa Silty Clay 0-3% (EaA) slopes within the eastern most extent (Figure 5).

Beaches (BS) occur as sandy, gravelly, or cobbly areas that are washed and rewashed by ocean waves. Specific to the current project area, the beaches consist of light-colored sands derived from coral and seashells (Foote et al. 1972:28). Found as narrow strips of excessively drained calcareous soils, JaC soils are developed from wind and water deposits that are single grain, pale brown to very pale brown sand derived from coral and seashells. No more than 60 inches deep, the surface layer is dark brown as a result of accumulation of organic matter and alluvium (Foote et al. 1972:48). JaC soil is neutral to moderately alkaline throughout the profile and considered suitable for pasture, sugarcane, truck crops, and urban development (Foote et al. 1972:49).

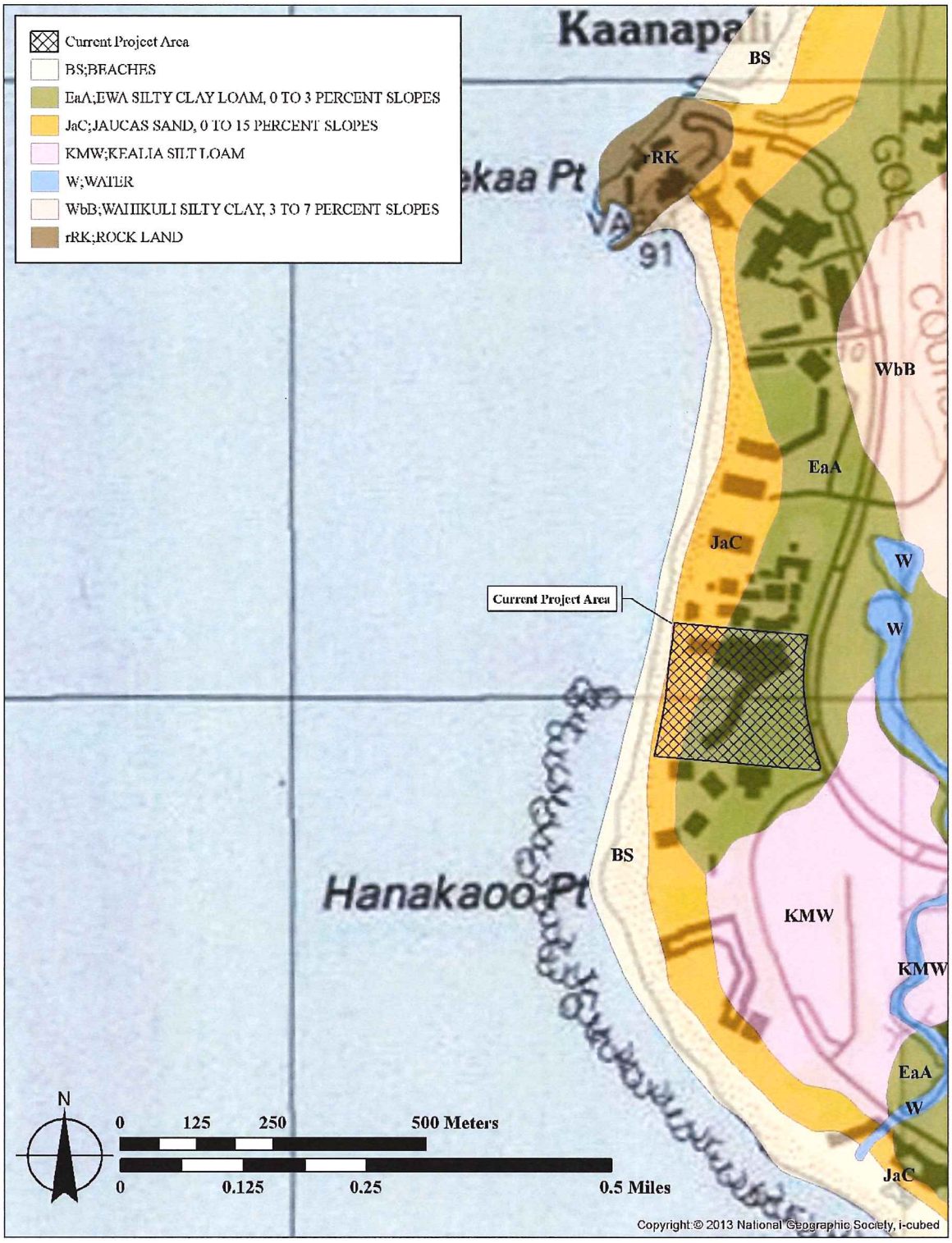


Figure 5. A portion of the 1992 Lahaina 7.5-minute USGS topographic quadrangle, showing the current project area (cross hatched in black) relative to the local soil series (U.S. Department of Agriculture 2001).

EaA soils occur on alluvial fans and terraces where runoff is very slow and the erosion hazard is no more than slight (Foote et al. 1972:30). The representative profile is similar to that of Ewa Silty Clay 3-6% (EaB) slopes soils where the surface layer is dark reddish-brown silty clay loam approximately 18 in (46 cm) thick followed by a dark-red silty clay loam with subangular blocky structure. The substratum is coral limestone, sand, or gravelly alluvium (Foote et al. 1972:29). At the time of the USDA soil survey, areas of EaA soils were commonly used for sugarcane and home sites (Foote et al. 1972:30).

The mean annual rainfall in this area averages only 20 inches (500 mm) due to the rain "shadow" effect caused by the West Maui Mountains (Giambelluca et al. 1986:47) with temperatures that range between 60° and 90° F. Winds are dominated by consistent northeasterly trades. This typical leeward climate and soil types would have supported a native lowland dry shrubland and grassland ecosystem where the primary vegetation would have consisted of *'a'ali'i* (*Dodonaea viscose*) and *pili* (*Heteropogon contortus*) with small stands of *ma'o* (*Gossypium tomentosum*) and *'ākoko* (*Chamaesyce* sp) (Pratt and Gon 1988).

The current project area, however, has undergone a significant amount of land alteration where the vegetation currently consists primarily of landscaping plants which include, but are not limited to, Bermuda grass (*Cynodon dactylon*), *naupaka* (*Scaevola taccada*) hedges, flowering hibiscus (*Hibiscus kokio subsp. Kokio*), mock-orange (*Murraya paniculata*), monkey pod trees (*Albizia saman*), coconut trees (*Cocos nucifera*), royal palm (*Roystonea regia*), red *tī* plants (*Cordyline terminalis*).

1.3.2 Built Environment

The built environment of the Kā'anapali area consists primarily of resort hotels and condominiums (Figure 6). Access to the beachfront properties is accomplished via the Kā'anapali Parkway, an intra-hotel street. Travel beyond the project area property and the resort area of Kā'anapali, to either the north or south, is accomplished using the Honoapi'ilani Highway. The approximate 11.987 acre property comprising the Westin Maui Resort & Spa has been completely built out to accommodate the following:

1. Two multi-story towers which house guest rooms and suites, as well as ground level restaurants, a business center;
2. A two-story structure which contains retail spaces, meeting rooms, and the Valley Isle Ballroom;
3. A single-story structure which accommodates the main lobby and reception;
4. A swimming pool area with associated structures; and
5. Other ancillary features of the built environment which include at grade paved parking areas and concrete sidewalks.

Figure 6. Aerial view of the Westing Maui Resort & Spa showing current built environment (Microsoft Corporation and ESRI 2010).

Section 2 Methods

The overall project APE is defined as the entire 11.987-acre project site. The current improvement plans call for the present pool area and associated pool facilities fronting the beach to remain in place, interior renovation of the public corridors and retail areas, second level expansion of the spa facilities, interior renovation and expansion of the existing Tropica Restaurant and Ono Bar, construction of a new multi-level parking structure, and the expansion of the ballroom/convention center. For the purpose of this archaeological study, the area of direct impact was the focus of intensive investigation and is defined as the ground level areas for proposed new construction. These areas are comprised of the following:

- the ballroom expansion (approximately 0.14 acres),
- the Tropica Restaurant and Ono Bar expansion (approximately 0.28 acres), and
- a multi-level parking structure (approximately 0.92 acres).

Of the total approximate 1.34-acre area of the direct impact, safety and equipment limitations restricted the execution of mechanized subsurface testing in the restaurant and bar expansion area; as well as the footprint of the ballroom expansion area (see Section 4 Results of Fieldwork). As a result, the subsurface testing program was limited to the footprint of the parking structure and area directly adjacent to the footprint of the ballroom expansion.

2.1 Field Methods

2.1.1 Ground Penetrating Radar (GPR) Survey

Given the built environment of the current project area, whereby the areas in which mechanized subsurface testing was suitable was covered in asphalt, and in an effort to thoroughly understand the subsurface conditions of these areas in relation to modern utilities, recent disturbance associated with resort development, and the probability of encountering intact cultural deposits, a ground penetrating radar (GPR) survey was carried out.

The GPR survey was be performed using a Geophysical Survey Systems, Inc. (GSSI) SIR-3000 system equipped with 400 MHz radar antenna moved along transects within a survey grid. Due to computer interpolation software (*Radan 7*; see Post-processing section below) it was only necessary to run data collection transects along one axis of each survey grid (X or Y). In order to standardize the data collection process all transects were run in the Y direction, originating from an arbitrary southwest corner (Figure 7). Transect spacing was set at an interval of 50 cm between scans.

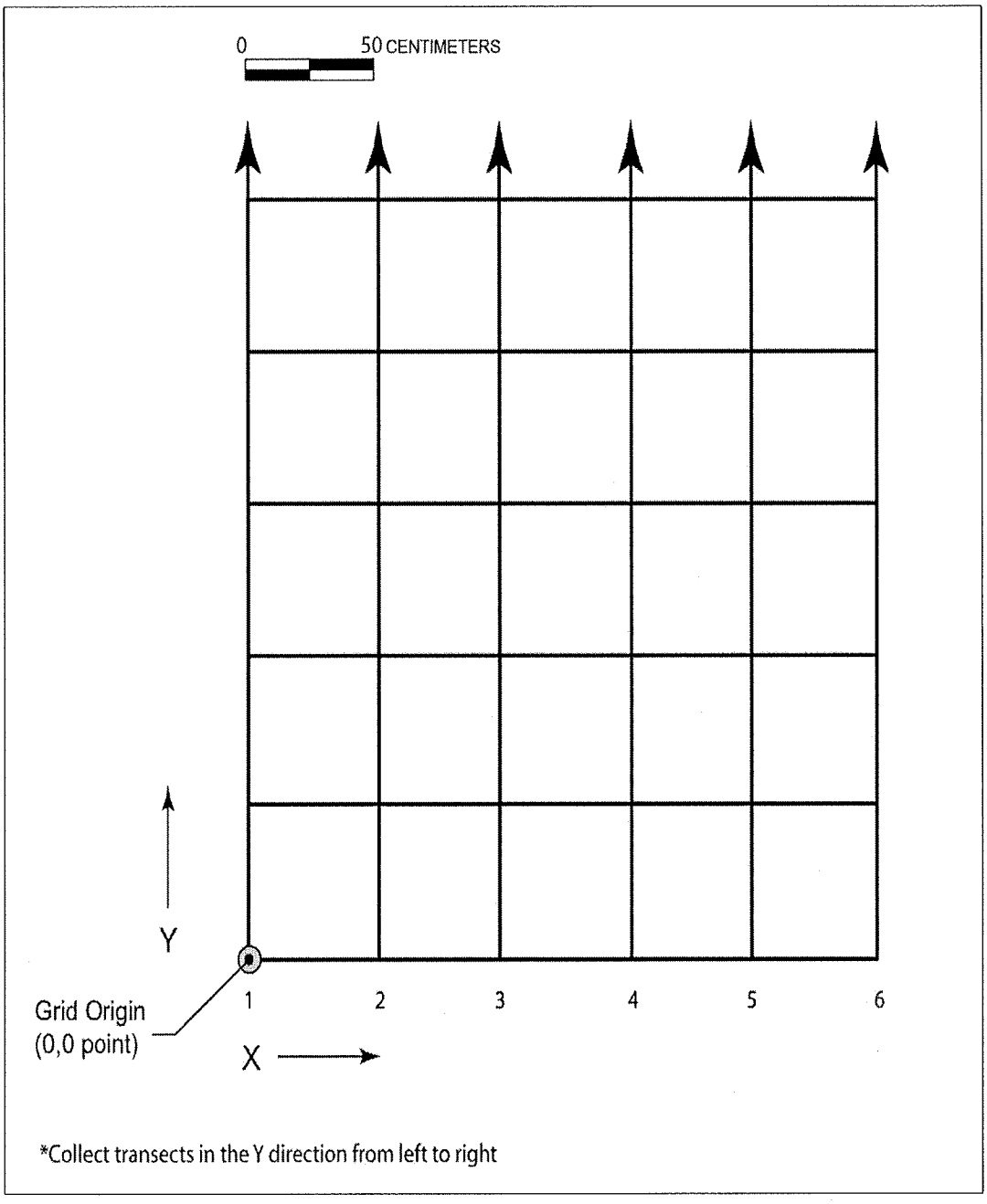


Figure 7. GPR Transect alignment and spacing.

2.1.1.1 Data Collection Parameters

GPR data collection parameters were held constant throughout the survey (Table 1). However, a varying dielectric constant (the measurement of how well radar energy will be transmitted to depth) may be used in anticipation of a complex stratigraphic sequence within the project area.

Table 1. GPR Data Collection Parameters

Parameter	Settings

Antenna	400 MHz
Transmission rate	100KHz
Samples	512
Format	16-bit
Range	40 nanoseconds
Dielectric	10.00
Rate	100
Scans per unit	40 per meter
Low Pass Filter	750MHz
High Pass Filter	200MHz

2.1.1.2 Post-processing

All collected radar data was post-processed using *RADAN 7*, which is the industry standard for GPR data processing.

RADAN 7 was utilized to generate two-dimensional depth profiles from the collected GPR data. These profiles illustrate the geometry of the reflections recorded during data collection. An analysis of these profiles can determine whether the radar energy is reflecting from a flat stratigraphic layer (seen as a distinct horizontal band on a profile), a discrete buried object (seen as a hyperbola in profile), or from stratigraphic irregularities such as subsurface disturbances associated with utility installation or human interment (also seen as hyperbolas, but usually are more ephemeral and consist of clustered reflections).

Position correction was utilized to remove unwanted surface "noise" from GPR profiles. High and low pass filters were applied to remove any excess background "noise" generated from nearby power lines, radio frequencies, etc. during data collection. Gain (signal amplification) was also applied to accent poorly defined or ephemeral reflection that are typically associated with subsurface cultural deposits.

RADAN 7 was also used to generate amplitude slice maps from the collected GPR data. Amplitude slice-maps are a three-dimensional tool for viewing differences in radar reflection amplitudes across a given surface at various depths. Amplitude slice-maps can be thought of as plan view maps or excavation level records that display GPR data at user defined depth intervals. Reflected radar amplitudes are of interest because they measure the degree of physical and chemical differences in buried materials, which in turn can indicate the presence of stratigraphic interfaces, descrete buried objects (i.e., basalt boulders, utility lines, burial caskets, etc.), or stratigraphic irregularties (i.e., subsurfaces anomalies associated with burial pits, fire pits, buried irrigation ditches, etc.). The amplitude slice maps are also important because they allow the visulization of radar reflections throughout the entire data set collected at a survey area at a given depth. This gives size and shape to collected radar reflections, which can aid in the interpretation of identified subsurface anomalies.

Amplitude slice-maps were generated through the comparison of radar reflection amplitudes recorded in vertical depth profiles, which corespond to individual transects collected within a survey grid along the X-axis (Note that while transects are collected in the Y-direction, they are actually located within the X-axis.). In this method, amplitude variations are analyzed at each

location where a radar reflection was recorded. Reflection amplitude data from the X-axis is then use to interpolate reflection data on to the Y-axis.

2.1.2 Mechanical Subsurface Testing

Based on the results of the GPR survey , the subsurface testing program consisted of mechanical testing within the areas of direct effect at locations where data interpretation determined a lower probability for encountering modern utilities and recent ground alteration and/or appeared to have a higher probability for encountering intact sediments or sediments with a sand signature at 75 cm below surface (cmbs). Mechanical testing and data recordation proceeded in the following manner:

1. The asphalt was cut with a asphalt saw and removed with a backhoe;
2. A standard backhoe with a three-foot wide bucket and a flat blade was used during mechanical testing;
3. Average dimensions of each backhoe trench (BT) measured one backhoe bucket width wide (approximately 0.8 m) by 5 m long and roughly oriented in a north-south and east-west direction;
4. All backhoe trenches (BTs) were excavated down to either C-Horizon soil, or a as safety standards dictated;
5. Recording of sediment stratigraphy was made by scale drawing of a least one profile per BT and verbal soil descriptions using standard USDA Soil terminology;
6. The location of each BT was recorded using Trimble GPS ProXH.

2.2 Document Review and GIS Methods

As part of the literature review and field inspection, a review of all previous archaeological work conducted in the surrounding area was performed. In addition, a variety of resources devoted to historical perspectives of the region and traditional stories and accounts were reviewed. Research venues included the State Historic Preservation Division of the Department of Land and Natural Resources, the Survey Office of the Department of Accounting and General Services, as well as other private collections. All relevant Land Claim Awards (LCA) and Royal Patents were researched using documentary resources available through the Waihona Aina (Waihona 'Aina 2002) and Papakilo (Office of Hawaiian Affairs 2011) online databases..

Historic maps were georeferenced in relation to the Maui Island TMK shapefile and portions of the 1992 Lāhainā 7.5-minute USGS topographic quadrangle using known points and ArcView 9.3.1 and 10.1. The project area boundary depicted on historic maps included as a part of this report should be considered approximate and used for reference information only. Coordinate data collected with the Trimble Pathfinder ProXH was downloaded and post-processed using GPS Pathfinder Office V 4.0 and exported to the ESRI Shapefile format referenced to UTM Coordinate System, Zone 4 North, NAD 1983 (Hawaii) Datum. All location maps presented herein were created using ArcView 9.3.1 and 10.1.

Section 3 Background Research

Through the *mo'olelo* collected by Martha Beckwith (1970), we find that the division of lands on Maui island is said to have taken place during the time of Ali'i Kakaalaneo (var. Kukaalaneo and Kaalaneo) under the direction of his *kahuna* Kalaiha'ohi'a (Beckwith 1970:383). The time of Kakaalaneo and Kalaihaohi'a was not long after Kumuhonua of O'ahu, a contemporary of Wākea who was the ancestor and father of the Native Hawaiian people, thus implying that the traditional land division of Maui occurred in the very beginning of the establishment of the *ali'i* ruling class (Handy et al. 1991:491). This division of land resulted in the establishment of twelve overall districts or *moku* during traditional times: Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko'olau, Hāmākua Loa, Hāmākua Poko, Ka'anapali, Lāhainā, and Kula.

The *moku o loko*, or *moku* as it is most commonly called, literally means "to cut across, divide, separate" (Lucas 1995:77). When used as a term of traditional land tenure, a *moku* is akin to a political district, an overall land division that can contain smaller divisions of land such as *'okana, kalana, ahupua'a, 'ili,* and *mo'o*. The current project area is located on the leeward facing slopes of Mauna Eke (var. E'eka) commonly referred to as the West Maui Mountains, within Hanaka'ō'ō Ahupua'a, the northernmost *ahupua'a* of Lāhainā Moku (Figure 8) which extends south to Ukumehame Ahupua'a (Sterling 1998:17).

Hanaka'ō'ō Ahupua'a and the neighboring *ahupua'a* of Honokōwai (var. Honokawai) and Wahikuli are rich in traditional accounts that relate to the Hawaiian Goddess Hina who resided above Lahainaluna (Westervelt 1910) and her son Maui, as well as, prominent *ali'i* such as Kaka'alaneo, the brothers Lono-a-pi'ilani and Kiha-a-pi'ilani, and Kahekili. The following sections include an overview history of the greater Lāhainā Moku and neighboring Ka'anapali Moku with specific background research into the *ahupua'a* of Hanaka'ō'ō.

3.1 Traditional and Historical Background

3.1.1 Traditional Hawaiian History and Lifeways

3.1.1.1 Mo'olelo and Traditional Accounts

Stories of the formation of Pu'u Keka'a, a prominent landmark just north of the current project area, as well as other natural features that surround this *pu'u* are linked to the deeds of the demi-god Māui and punishment for his naysayers following his great feats of lifting the sky and lassoing the sun. With regard to the creation of the rocky promontory that is Keka'a, Westervelt (1910) recalls the following story:

> A man who had been watching the process of lifting the sky ridiculed Maui for attempting such a difficult task. When the clouds rested on the tops of the mountains, Maui turned to punish his critic. The man had fled to the other side of the island. Maui rapidly pursued and finally caught him on the sea coast, not many miles north of the town now known as Lahaina. After a brief struggle the man was changed, according to the story, into a great black rock, which can be seen by any traveler who desires to localize the legends of Hawaii. (Westervelt 1910:32).

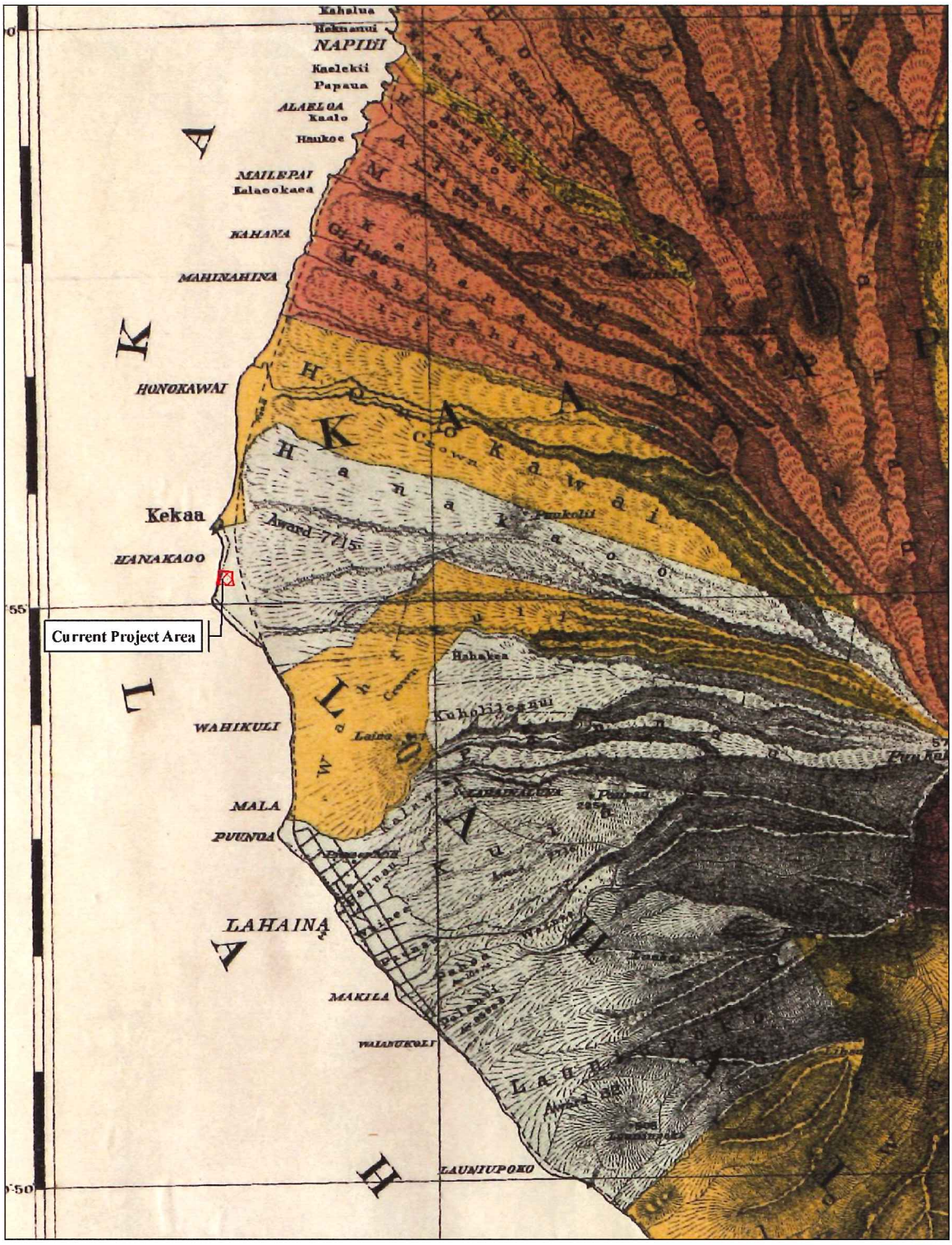


Figure 8. A portion of the Hawaiian Government Survey Map of Maui showing the current boundary of the Westin Maui Resort & Spa in relation to the traditional *moku* and *ahupua'a* of West Maui (Dodge 1885).

Fornander (1919b:538) tells the story of a man, Moemoe, who insulted the demigod, Māui while he was on his way to capture the sun:

> Moemoe called out sarcastically, "You can not [sic] catch the sun for you are a low down farmer." Maui answered, "When I conquer my enemy and satisfy my desire I shall kill you."

After Māui successfully lassoed the sun, Māui went to find Moemoe in order to follow through with his threat and the following account is given:

> On his (Māui) return he called at Moemoe's place. It was absent. Maui traced it to Kawaiaopilopilo. This place is between Kekaa and James' canefield; Moemoe saw him, and it went on in an irregular manner, now towards the mountain and now towards the sea. Maui became greatly angered, so he flew right on and caught the other above Kekaha (Keka'a); he killed it; it turned, however, into a rock. That rock is still lying along there makai of the new road. Its length is nearly seven feet. (Fornander 1919b:538)

Keka'a was also a resting place for Wahine-o-Manua, a woman guided by *pūeo*, who fled from an abusive situation:

> Halulukoakoa (Walker Site 11 at Wahikuli), a coral structure, is famed traditionally as having given shelter to Wahine-o-Manua, a very beautiful young woman who fled from her husband in consequence of constant ill treatment. Regardless of the rigid kapu of the heiaus against women being allowed within its sacred walls, she hid herself therein and watched those searching for her. On their departure she ventured forth and on reaching the road an owl god appeared to her as guardian and guide, and by the clapping of its wings led the pursued girl through the brush till she reached the large stone mauka of Kekaa, Kaanapali, where it left her and she lay down and slept till morn, when she arose and departed. The stone is known as Pohaku o Wahine o Manua. (Thrum 1905:45).

Along with the creation of Pu'u Keka'a and the natural features nearby, this *pu'u* is also known in the *mo'olelo 'aina* as a *leina a ka uhane* or leaping of place for the souls. In the traditions of Maui Island, the soul has three abiding places: the volcano, in the water, and on dry plains like the plains of Kamaomao and Keka'a (Fornander 1919e). Mr. Ahue (in Hill, Arnold et al. 2007) further explained that the one of the ceremonial uses of Pu'u Keka'a is more spiritual than physical. The tall cliffs of Pu'u Keka'a serve as a spiritual portal, the leaping place for the souls of the departed to return to the afterlife. It is said that when a person dies, his spirit journeys to Keka'a (Fornander 1919d) and from this *leina a ka 'uhane* one is oriented directly west, towards the setting of the sun and the Hawaiian afterlife.

Fornander further records a phenomenon where it seemed that all those who went alone to Keka'a would die. Keokiko, a *hapa haole* (or part-white) resident at Keka'a (circa 1859-1872) whose job it was to cook whales during the whaling era was buried at Keka'a whose tomb was noted as that white thing atop the hill (Fornander 1919d). The following description from an early 20th Century coastal survey also makes note of the tomb atop Pu'u Keka'a:

> Keka'a Point ... is the most prominent landmark in the vicinity ... There is a conspicuous white tomb on top of the rock. (United States of America Department of Commerce 1919:24)

The significance of Keka'a as a *leina* is featured in the following account recorded by Inez Ashdown (1968) where Kahekili, Ali'i of Maui, seeks to solidify his rule:

> Later, when Kamehameha-nui died, he left the Kingdome of Maui to his favorite brother, Maui's final ruler, Kahekili, The Thunderer. Kahekili was a noted athlete and his favorite sport was *Lele kawa*, or the game of leaping from heights into water. Three of the most noted Death Leaps the king won were at Ke'anae, Ka-ha-ku-loa, and Pu'u Keka'a. The leap he made at Pu'u Keka'a proved he was a true descendant of the gods, because, at that time, no man dared leap from the 'u-ha-ne-lele, or Soul-leaping Place of Maui. The king leaped from there to prove that the populace should trust him as a god and ruler.

In addition to the recorded traditional narratives, the place names of Hawai'i also provide a living history (Pukui et al. 1974:xii). A study of the place names and their meanings for the region surrounding the project area may yield add some insight into the patterns of life and provide an additional understanding of the traditional Hawaiian life ways of this area. The table below (Table 2, see also Figure 8) provides a listing of the placenames in the vicinity of Hanaka'ō'ō. Unless noted otherwise, literal placename translations are taken from Pukui and others (1974).

Table 2. Place names in the project area vicinity of Hanaka'ō'ō Ahupua'a. Literal translations are from Pukui et al. 1976 unless noted otherwise.

Place Name	Translation
'Alaeloa	*Lit.*, distant mudhen.
'Alamihi (*'Ili* and fishpond)	Fornander (1917a:378) finds the word in a battle chant that means "a small crab." Pukui and Elbert (1986:18) elaborate that it is a type of black crab that eats the dead [a scavenger]. Kamakau (1992:73) makes reference to the seizing of the food of 'Alamihi, in order to supply the needs of the army of Kahui-'aimoku-a-Kama, a Maui chief who revolted against the authority of Kamehameha-nui, chief and heir to the island of Maui.
Hāhākea (*Ahupua'a* and stream)	*Lit.*, white stalk. Fierce winds and rains of Kaua'ula are noted in the uplands of Hāhākea (Fornander 1920a:476)
Hanaka'ō'ō (*Ahupua'a*)	*Lit.*, the digging stick, digging stick bay
Hauola	*Lit.*, dew [of] life. Ancient surfing spot of Lāhainā (Fornander 1920a:477)
Helelua	Name for a reef area off Lāhainā (Fornander 1920a:477)
Honoapi'ilani	Highway around southwest Maui. *Lit.*, bays [acquired] by [Chief] Pi'ilani).
Honokahua (*Ahupua'a*)	*Lit.*, sites bay. According to Kamakau (1992:74), the Maui chief Pele-io-holani positioned part of his army at Honokahua, prior to a battle against the Alapa'i from the island of Hawai'i, a battle which took place about 1738.
Honokeana (*Ahupua'a*)	*Lit.*, cave bay
Honokōhau (Ahupua'a)	*Lit., bay drawing dew. Fornander (1920b:427) relates the story of one of Kamehameha-nui's sons who was wounded in a battle at Ka'uiki in Hāna, and who was removed to Honkōhau in the Kā'anapali District, where he died.*

Table 2 (continued). Place names in the project area vicinity of Hanaka'ō'ō Ahupua'a. Literal translations are from Pukui et al. 1976 unless noted otherwise.

Place Name	Translation
Honokōwai (*Ahupua'a*)	*Lit.*, bay drawing water.
Honolua (*Ahupua'a*)	*Lit.*, two harbors. According to Kamakau (1992:74), Maui chief Pele-io-holani positioned a portion of his army at Honolua, in the 1738 battle against the Alapa'i from the island of Hawai'i.
Hononana	*Lit.*, animated bay.
Kā'anapali (*Moku*)	*Lit.*, Kā'ana cliff.
Ka-wai-opliopilio	A place between Keka'a and a sugar cane field (Maunupau 1922), literal translation unknown.
Kahana	*Lit.*, cutting. Site of Kahana Heiau (Walker Site 12). The people of Lāhainā gathered their salt at the shoreline of Kahana (Sterling 1998:50).
Kahua	*Lit.*, the fruit. An *ahupua'a* in the mountains above Kā'anapali.
Kalawea	*Alternate spelling:* Kelawea. The name of the plantation village adjacent to the Pioneer Mill. Noted as a surfing spot (Fornander 1920a:477).
Kanahā	*Lit.,* the shattered [thing]. The name of the ridge above Lahaina as Kanahā, a name associated with the wind and rain of Kaua'ula Valley (Fornander 1920a:476).
Ka'ōpala	A gulch and coastal area of West Maui that literally means "the rubbish."
Kapunakea	*Lit.*, the clear spring, or, the white coral.
Kauheana	An area described by Fornander (1919d:541) southwest of the Lāhainā fort, where a famous grove of breadfruit trees grew.
Kawailua	Place name close to Pu'u Keka'a, from "O Kealialia liu o Mana" (The Mirage of Mana), a name chant in honor of Lonoikamakahiki Chief of Hawai'i Island, as recorded by Fornander (1917b:284). *Lit.*, pit [of] the water.
Keawaiki	*Lit.,* the small passage. Famed surfing area of Lāhainā where Lonoikamakahiki, the renowned chief of Hawai'i and Kamalalawalu, the great chief of Maui, surfed (Fornander 1919c:436).
Keawaawa	Noted area north of Lāhainā where Alapainui, *Mō'ī* of Hawai'i, joined forces with Kamehameha-nui, *Mō'ī* of Maui, about 1738, in a battle to defeat Kauhi, half-brother of Kamehamehanui, and his ally, Peleioholani, chief of O'ahu. Kauhi was captured and put to death, and Peleioholani recognized Kamehameha-nui as *mo'i* of Maui (Alexander 1899:102). Possible placename related to the portion of the modern day Ka'anapali Resort Area within Hanaka'ō'ō Ahupua'a. Inez Ashdown (in Sterling 1998:45) notes that prior to the planting of sugar cane directly adjacent to the current project area, the *muliwai*, or mouth, of Hahakea Stream was located near Hanakao'o Point., the waters of which would form a swamp during the rainy weather just *mauka* of Makaiwa Beach.
Kuholileanui	Land division, no translation given.
Makaīwa (Beach)	Traditional name of the beach area presently known as Kā'anapali Beach and noted as a beach near Lāhainā by Pukui and others (1974). *Lit.* mother-of-pearl eyes (as in an image).

Table 2 (continued). Place names in the project area vicinity of Hanaka'ō'ō Ahupua'a. Literal translations are from Pukui et al. 1976 unless noted otherwise.

Place Name	Translation
Māla (*Ahupua'a* and wharf)	*Lit.*, garden. Kamakau (1992:170) reports that the war canoes of Kamehameha I landed at Lāhainā, covering the area from Māla to Launiupoko in 1795, whereupon the armies under his command appropriated all the food of the region, en route to his conquest of the island of O'ahu.
Pu'ukoli'i (also a plantation village)	*Lit.*, *koli'i* (*Trematolobelia macrostachys*) shrub hill.
Pu'u Keka'a	*Lit.*, the rumble, (such sounds are said to heard during storms)
Pu'ulaina	Name of the 650 ft. elevation hill in Wahikuli Ahupua'a. Fornander (Fornander 1919a:668) gives Pu'u La'i, or 'ti-leaf' hill, as a second name for this hill back of Lāhainā.
Wahikuli	*Lit.*, noisy place.
Wailehua	*Lit.*, water of the *lehua* flower. Rock at the south of Lāhainā at the last coconut trees (Fornander 1920a:477).

The above place names, together with the environmental data, suggest that the lands surrounding the shoreline and *mauka* of the project area were notable for agricultural pursuits and that the plentiful marine resources of the region were known to people across the Hawaiian Islands.

3.1.1.2 Subsistence and Habitation

As to the wealth of resources at Lāhainā and Kā'anapali, Fornander writes the following:

> Kekaa was the capital of Maui when Kakaalaneo was reigning [sic] over West Maui ... Many houses were constructed and people cultivated a great deal of poatatoes, bananas, sugar cane, and thins 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. This chief also planted bread fruit and *kukui* trees down at Lahaina. Some of these trees southwest of the Lahaina fort, were called the bread fruit trees of Kauheana. (Fornander 1919d:540)

Kaka'alaneo, an early ruler of Maui, was famous as the first king of the island to give his attention to agriculture and the promotion of domestic industry (Nakuina 1904:53). According to Nakuina, it was Kaka'alaneo who planted the famous and valuable breadfruit grove of Lāhainā, a grove made known throughout the islands as "Malu ulu o Lele," or "the shady breadfruit grove of Lele [Lahaina]." Handy and others note that the main taro lands of Lāhainā were watered by two large streams, the Kahoma and Kanaha Stream (a tributary to the Kahoma stream) while neighboring Kā'anapali was noted for the five streams of the West Maui Watershed: Honokōwai, Kahana, Honokahua, Honolua, and Honokohau (Handy et al. 1991:492, 494). Early descriptions indicate that both dry-land and pond-field (*lo'i*) methods of cultivation were equally employed in the Lāhainā area (Menzies 1793 in Handy et al. 1991:492-493) while the Kā'anapali area was likely more reliant on *lo'i* agriculture as there were no sloping *kula* lands along this coastline like that behind and to the southeast of Lāhainā (Handy et al. 1991:494).

In 1823, the Reverend William Richards wrote from Lāhainā:

> This may be the earliest notice you will have of our establishment at this place. It is proper, therefore, to mention that Mr. Stewart and myself, with our families, took up

> our residence here on the 31st of May. We are living in houses built by the heathen and presented to us. They are built in the native style, and consist of posts driven into the ground, on which small poles are tied horizontally, and then long grass is fastened to the poles by strings which have to pass round each bundle. We have no floors, and no windows, except holes cut through the thatching, which are closed by shutters without glass. Our houses are comfortable at this season, and we hope to remain so during most of the year, as very little rain falls at this place. During the three months that we have resided here, there has been none at all. Nearly all that grows, not only in Lahina [sic], but all this part of Mowee, is watered artificially by streams from the mountains (Richards 1824).

Three years later, the English missionary, William Ellis (1826:46), offers the following description upon seeing Lāhainā for the first time:

> The appearance of Lahaina from the anchorage is singularly romantic and beautiful ... (t)he 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.

Along with the abundance of terrestrial resources, the traditional Hawaiian diet was well supplemented with the rich marine resources of the waters off of Lāhainā and Kā'anapali Moku. The waters fronting Kā'anapali were considered good for *kākā* line fishing and *kūkaula* line fishing, when larger pelagic fish were sought, such as the *ulua, 'ōpakapaka, kāhala, hāpu'u, lehe, uku, and 'ula'ula niho* (Kahā'ulelio 2006:45). The waters around Keawaawa and Keka'a were considered good for *'ōpelu* fishing where a net, dyed brown using an extract from the *kukui* (*Aleurites moluccana*) bark and measuring about 36 feet in circumference was lowered from a canoe in order to make the catch (Kahā'ulelio 2006:105).

Another type of fishing, called *mamali 'ō'io*, was employed just beyond the reef and at places close to the shore at Kā'anapali by fashioning metal into barbed hooks and lowering them from a canoe. Kahā'ulelio (2006:145) stated that it was possible for a single fisherman to catch up to 40 *'ō'io* using this method of fishing. Kā'anapali was also noted for large schools of *akule*. Kahā'ulelio (2006:201) stated that *papa* (bag) and *pākū* (curtain) nets were lowered from canoes, and that a good catch would fill three canoes with *akule*.

The Deputy Sheriff of Lāhainā, the Honorable E.R. Lindsey, described to Kahā'ulelio that *paeaea* fishing, or pole fishing for lobsters could be done off of Keka'a. Kahā'ulelio documents the following experience (Kahā'ulelio 2006:209):

> The worst thing was that in two nights of *paeaea* fishing for lobsters at Keka'a, all my *aku* fishing poles were broken to pieces. He (E.R. Lindsey) caught eight on one night and none on the next and because all my poles were broken he never went to fish for lobsters. Otherwise we'd still be eating lobsters.

Bountiful fishing could also be found in the area of Lele, the traditional place name for Lāhainā. Kamakau (1991:105-106) wrote of Mo'ikeha, a man who traveled between Kahiki [places far from Hawai'i] and Hawai'i-nei [Hawai'i]. In Kamakau's account of Mo'ikeha, he notes when Mo'ikeha and his companions arrived in Hawai'i-nei, his followers chose to scatter themselves among the fertile lands and rich fishing areas of the individual islands, two of whom were described thus:

> Pāha'a and Pana'ewa remained in Lahaina – in Lahaina of the gurgling of the gushing waters among the *pili* grass, the bunches of bananas at Wai'anae, the luxuriant growth of *wauke* [paperbark] at Paeohi, and the *honu* turtle that swims at sea. At Lele – my beloved! –they lived. (S. M. Kamakau 1991:105-106)

The late Mr. Ed Lindsey (in Hill, Arnold et al. 2007) described the relationship between *mauka* (upland) and *makai* (lowland or coastal) region of the adjacent lands of Honokōwai, as well as the significance of the fishing grounds in the area Kā'anapali. Mr. Lindsey explained that the area just north of Pu'u Keka'a was an area best known by pre-contact Native Hawaiians for beaches where turtles came ashore to lay their eggs. Mr. Lindsey believed that a recently-found *ko'a* [fishing shrine] in Honokōwai (Hill, Arnold et al. 2007) was built as a ceremonial structure to ensure the successful propagation of turtles.

Mr. Lindsey mentioned that his grandfather was the same E.R. Lindsey that had also been cited in the 2006 *Ka 'Oihana Lawai'a, Hawaiian Fishing Traditions* book by Daniel Kahā'ulelio. The Honorable E.R. Lindsey had passed his fishing traditions to his son, Mr. Charles Lindsey, who then passed this knowledge to Mr. Ed Lindsey. Mr. Lindsey's father built a fishing *ko'a* at Lāhainā, in a place in the ocean where Mr. Lindsey's grandfather had told him where to build it. The construction consisted of a tall column of coral, around which fish would gather. Mr. Lindsey goes on to say that "This is the one of the meanings of the word *ko'a*: it means to gather. The energy of the *ko'a* brought the fish, and the careful observance of the energy of the *ko'a* allowed my father to be a successful fisherman" (Hill, Arnold et al. 2007).

3.1.1.3 Politics and Warfare

The desirability of Lāhainā lands and resources is also reflected in the political and warfare history of the area. While Hāna, on the extreme eastern end of Maui Island, was a center of traditional Hawaiian political strife during the expansion period and into the early historic period, Lāhainā was no stranger to warfare. At least two attempts to consolidate the several islands of the Hawaiian group under one ruler were made by ambitious chiefs previous to the final accomplishment of such conquest by Kamehameha I. According to the following account retold by Kalākaua, in his book *The Legends and Myths of Hawaii* (1888:177), the most disastrous of these ventures was the first which was carried out by Kalaunuiohua, king of Hawai'i Island at around AD 1260. The following account is pivotal to the early history of Lāhainā:

> At that time Kamaluohua, the seventh in descent from Paumakua, was the *Mō'ī* (diacriticals added) of Maui, or rather of the western and greater part of the island. The principal chief of the windward side was Wakalana, whose residence was Wailuku. He was a cousin of the *Mō'ī* (diacriticals added), and their relations were exceedingly friendly.
>
> Kalaunuiohua, king of the island of Hawai'i, entertained the ambitious design of uniting the several islands of the archipelago under one government. In this grand scheme of conquest and consolidation he was sustained by the leading chiefs of Hawai'i, hungering for foreign possessions, and large quotas of canoes and warriors were promised.
>
> A general plan of action having been adopted, a fleet of two thousand canoes of all sizes and an army of twelve thousand warriors were speedily collected. Sacrifices were made at the great temple at Pakaalani; the favor of the gods was invoked and the auguries were satisfactory. No such warlike display had been seen by the generation witnessing it, and the confidence and enthusiasm of the king and his commanding officers were fully shared by the people.

...

> Sailing to the western division of the island [Maui], which was reached in two days, Kalaunuiohua effected a landing of his army at Lahaina. Kamaluohua, the *Mō'ī* of the island, had learned of the projected invasion some days before, and made every preparation possible to meet and repel it. *Lunapais*, or war-messengers, had been dispatched to the several district chiefs, and an army of seven or eight thousand warriors of all arms had been hastily collected.
>
> Unable to land at Lahaina, which was in the possession of the enemy, Kamaluohua marched his forces across the mountains, and a sanguinary battle was fought in the neighborhood of the village [of Lahaina]. But the Mauians, greatly outnumbered, were defeated and driven back to the hills, and their king was taken prisoner. (Kalakaua 1888:177-185)

The account of the conquest continues with the discovery of a metal sword, wielded with great success by a "white captain" (previously described in the narrative as having been shipwrecked at Wailuku [Maui] two years before and in possession of a wondrous "iron knife") who was finally overwhelmed by Kualu, one of Kalaunuiohua's best warriors. The expedition continues with Kalaunuiohua's capture of Kahokuohua, *ali'i nui* of Molokai, at Kalaupapa; the defeat of the defenders, and the appropriation of all usable canoes for his invasion of Oahu. The armies of the Big Island landed at Wai'anae, [O'ahu] with two captured chiefs in tow. Defeat came quickly, and the capture of Huapouleilei only added to Kalaunuiohua's feelings of invincibility (Kalakaua 1888:186).

Malo also contributes the following with the regard to the ambitions of Kalaunuiohua noting that Kalaunuiohua went on to battle with Kukona of Kaua'i, where he was defeated, captured, and ultimately spared when he conspired with his fellow captives to kill Kukona:

> One time when Kukona was spending the day apart from his own people, with these captive Hua about him, he was taken with a desire for sleep. He rolled himself in his blanket and lay down, but did not fall asleep (he was setting a trapfor them) but was all the time alert and watching them from beneath his covering.
>
> Kalaunuiohua nand his fellow captives supposed that Kukona had really gone to sleep, and they began to grumble and find fault with Kukona and to plot against his life ... agreeing that they should turn upon Kukona and put him to death.
>
> But Kamaluohua, the king of Maui, said "Let us do not hurt to Kukona, because he hs been kind to us. Here we ar in his hands, but he has not put us to death. Let us treat him kindly."
>
> Just then Kukona rose up and said to them, "What a fine dream I've just had while sleeping! I dreamed all of you were muttering and plotting my death; but that one, " pointing to Kamaluohua, "defended me and preserved my life." ...
>
> "Because, however, of Kamaluohua's kindness," continued Kukona, "and because of his determination that no evil should be done to me, because he appreciated that life and the enjoyment of peace were great blessings, I will not trouble you.
>
> "Because Kamaluohua did right, I now declare all of you free to return to your homes with the honors of war (*me ka lanakila*), taking your own canoes with you. Do not thin I sall operess you in your own lands. Your lands shall be your own to live in as before."

> So Kalaunuiohua returned hoem to Hawaii; Huaipouleilei, to Oahu; Kahakuohua to Molokai; and Kamaluohua, to Maui. And they lived peacefully in their own home. This peace was called *ka lai loa ia Kamaluohua*, the long peace of Kamaluohua.

Samuel Kamakau (1992) writes of a battle which took place at from Kaua'ula to Honokōwai, in Lāhainā, shortly before Western contact. The two combatants were Kauhi'aimokuakama, the oldest son of Maui's high chief Kekaulike, and Kamehameha-nui, the heir to the island of Maui. The account of the battle names the region of 'Alamihi as an area of plentiful food stores, and valuable as a prize of war. From a fortified hill, the forces of Maui's chief "opened the attack against Kamehameha-nui." The Maui chief was victorious, and Kamehameha-nui fled to Hawaii (S. Kamakau 1992:73-74).

During subsequent battles over the rulership of Maui between Ka'uhi of Maui and Kamehameha-nui with Alapa'i of Hawai'i as his supporter, the Hawai'i Island warriors attacked the food resources of Lāhainā by drying up the streams of Kaua'ula, Kanaha, and Kahoma and laying waste to the *lo'i* fields and brooks:

> Ka-uhi with his war leader Ku-ka-'e'a and other warriors opened the attack against Kamehameha-nui. It was a great battle from which the forces of Kamehameha-nui fled before those of Ka-uhi...There the fighting men of Kamehameha-nui were slaughtered. Kamehameha-nui fled to Alapa'i's canoe ... Alapa'i returned to Hawaii, taking Kamehameha-nui with him, and made ready to come back and overrun the place and take Ka-uhi prisoner.
>
> A whole year Alapa'i spent in preparation for the war with Maui. It was in 1738 that he set out for the war in which he swept the country. What was this war like? It employed the unusual method in warfare of drying up the streams of Kaua'ula, Kanaha, and Mahoma [sic] (possible reference to Kahoma?) (which is the stream near Lahainaluna). The wet taro patches and the brooks were dried up so that there was no food for the forces of Ka-uhi or for the country people. Alapa'i's men kept close watch over the brooks of Lolowalu, Ukumehame, Wailuku, and Honokawai. When Pele-io-holani [an O'ahu Island chief fighting on behalf of Maui and Ka-uhi] heard that Alapa'i was at Lahaina he gathered all his forces at Honokahua and Honolua. At Honokawai an engagement took place between the two armies, and the forces of Alapa'i were slaughtered and fled to Keaawawa. There Alapa'i heard that Pele-io-holani had but 640 men against Alapa'i's 8,440 from the six districts of Hawaii ... Pele-io-holani intended to unite his forces with those of Ka-uhi, but Alapa'i' men held Lahaina from Ukumehame to Mala on the north, and in attempting to aid Ka-uhi, Pele-io-holani became involved in difficulty. The hardest fighting, even compared with that at Napili and at Honokahua in Ka'anapali, took place on the day of the attack at Pu'unene ... The two ruling chiefs met there again, face to face, to end the war and became friends again, so great had been the slaughter on both sides ... At the end of the war Kamehameha-nui became ruling chief of Maui. Pele-io-holani retired to Ko'olau on Molokai ... Kamehameha-nui ruled Maui in peace and Alapa'i held the rule over Hawaii, to which he returned after affairs had quieted down on Maui. (S. Kamakau 1992:74-75)

Finally, during the wars of unification, Kamehameha landed and occupied the Lāhainā District from Launiupoko to Māla and all the parts of the lands that had been given over to food patches and cane fields were overrun by men from Hawai'i Island (S. Kamakau 1992:171). Kamehameha resided at Lāhainā for one year to equip his fleet with food and other provisions supplied by the lands of Maui, Moloka'i, Lāna'i, and Kaho'olawe (S. Kamakau 1992:188).

3.1.2 Early Post-Contact Period

In the whaling heyday, it was estimated that over fifty whalers were sometimes at anchor off Lāhainā at once (Alexander 1899:259). By the year 1844, Lāhainā recorded 326 whaling vessels at port with the number the following year increasing by over 50 vessels to 379 (Thrum 1912:8-9). According to Inez Ashdown (1963), it is during the whaling era that Pu'u Keka'a becomes known as "Black Rock", the commonly known name for the rocky promontory within the current project area. Ashdown (1963)describes both the origin of the placename of "Black Rock":

> During the years after the discovery of the Hawaiian Islands in 1778, foreigners taught some Hawaiians to fear "ghosts" and the "unknown." At Pu'u Keka'a, whalers set up kettles in which to try-out whale oil. They could not pronounce the proper name so they called the sacred hill as "Black Rock" and said it was "haunted by evil spirits."

It is told that King Kahekili who ruled of Maui ca. 1700's, visited Kā'anapali and to his dismay and anger, there was no feast waiting for him and his company as "the sacred taro patches had been neglected, the sacred fish-pond of Loko-i'a Kapu-kapu at the mouth of the Honokowai river practically empty of fish, and his people in a state of terror" (Ashdown 1963). Kahekili ascended Pu'u Keka'a to pray in company with his priests, and there he learned the causes of misery in the area. People had many illnesses which the local doctors could not understand or cure, and they also had learned to drink liquor. Drunkeness, disease and idleness had afflicted too many in the village of Keka'a. ... and in all Lahaina-loa. By order of the king, strong men were sent to destroy stills, to burn filthy, squalid homes, and to renew the village. Others were ordered to renew the taro patches and fishpond, the sweet-potato-hills, and then begin life anew. Ashdown (1963) goes on the describe the bravery and godliness of Kahekili in the following passages:

> King Kahekili, The Thunderer, aside from being a just ruler, a famed warrior who was never conquered by invaders, and a direct descendant of the "gods" of Maui, was also a champion of the game called lele-kawa, or leaping and diving from very high points into the sea or the streams. In those days, not even a king had the temerity to dive from the sacred soul-leaping stateion, Pu'u Keka'a. The kind decided to teach his people a good lesson in bravery. He told his people that he would take the leap-of-death, returned unharmed, and prove to them the spiritual-poer he possessed by trusting in the Everlasting Father-God.
>
> The people wailed with fright while their noble king walked calmly to the summit of Keka'a, stood silhouetted against the western-horizon, and dived.
>
> When he returned safely past the supposedly haunted Cave of Moemoe, above the little Bay of Sleep-everlasting, and up Wahine Pe'e beach which everyone now avoided, a great shout of joy rose from the people. Released from their fears, the people went to the sea, enjoyed their usual swimming and water-sports, and "cleansed" themselves of "evil spirits" in the beautiful sea.

With the unification of the Hawaiian Islands in 1791 under a single sovereign, followed by the arrival of the first Missionaries and first whaling vessel, the ship *Maro* of Nantucket, in 1820 (Andrews 1865:556; Morison 1922), western styled commerce and Christianization of the Native Hawaiian people swept across Lāhainā. The town of Lāhainā and the surrounding landings played a prominent role in the early economy of the Kingdom. The lands surrounding Lāhaina town were cultivated in commercial sugar (Gilmore 1931:198-203), while the whale trade, Irish potato trade (Gilman 1906), and establishment of the Lahaina Mission Station and Lahainaluna Seminary, drew people to the water front areas which ultimately resulted in a population rise (Haun and Henry

2001). This trend made Lāhainā one of the primary economic, religious and educational centers for the early Hawaiian Kingdom (S. Kamakau 1992:304).

The Reverend Richards writes in the *Missionary Herald*, October 1830, discussing religious matters at the missionary station of Lāhainā:

> The state of things at Lahaina, on the island of Maui, continues to be encouraging... Public worship on the Sabbath was established on the 18th of February, 1825. Then, ten persons were present – now more than as many hundreds... In every considerable village from one end of the island to the other, the people have erected a house for the worship of God. At Olualu, [Olowalu] a village eight miles distant from Lahaina, we have preached during the season, nearly thirty sermons to a congregation of five to six hundred. This and a single Sabbath at Kanepale, [Kā'anapali] a village equally distant from Lahaina in another direction, is all that we have been able to do for the people on this side of the island (Richards and Green 1831).

Census figures provided by Protestant missionaries throughout the Hawaiian Islands beginning in 1831 provide the earliest documentation of the size of the native population after the first decades of western contact. During the first census of Maui Island in 1831-1832, a total population of 8,415 was recorded for the Lāhainā District; which comprised 24% of the entire island population of 35,062 (Schmitt 1977). By the time of the next census in 1836, however, the Lahaina population had dropped to 5,234 comprising 22% of the Maui island population of 24,199 (Schmitt 1977).

By 1846, the population of Kā'anapali had grown to become a major town outside of Lāhainā. Reverend John S. Emerson wrote the following to describe these changes to supporters of the American Board of Commissioners for Foreign Missions in Boston:

> I have spent most of my Sabbaths at Kaanapali, and have held occasional meetings with the people during the week. The whole number of communicants is one hundred and twenty-nine. Twenty have been removed by death, and nine by letter; and as one has been suspended, there have been, in all, one hundred and fifty-nine from the first. Between July, 1844, and January, 1846, they paid for books $40.67, which sum was credited to the different societies. During the same time they have contributed for various benevolent objects $85.56.
>
> The schools in Kaanapali have further increased in excellence, during the past two years; while at the same time, the number in attendance has diminished. This diminution has been owing, in part, to the fact that many boys have left the schools, and gone on whaling voyages; but it is probably owing more to the gradual decrease in the population, which is obvious (Emerson 1847).

3.1.3 Mid-1800s and the Great Māhele

The most significant change in land-use patterns and land allocation came with The Great Māhele of 1848 and the privatization of land in Hawai'i. The establishment in 1839 by Kamehameha III (Kauikeaouli) of a Bill of Rights for the people of Hawai'i, followed by a formal constitution in 1840, hastened the shift of the Hawaiian economy from that of a subsistence-based economy to that of a market-based economy. During the Māhele, all of the lands in the Kingdom of Hawai'i were divided between *mō'ī* (king), *Ali'i* and *konohiki* (overseer of an *ahupua'a*), and *maka'āinana* (tenants of the land) and passed into the Western land tenure model of private ownership.

In 1848 the crown and the *ali'i* (royalty) received their land titles and awards for both whole *ahupua'a* and individual parcels within an *ahupua'a* which were then subsequently granted in 1850 (Alexander 1890:114). Crown Lands were lands defined as:

> ... private lands of His Majesty Kamehameha III., to have and to hold for himself, his heirs and successors forever; and said lands shall be regulated and disposed of according to his royal will and pleasure subject only to the rights of tenants. (Kingdom of Hawaii 1848)

At the death of Kamehameha IV, it was decided by the Supreme Court that ...under the confirmatory Act of June 7th, 1848, "the inheritance is limited to the *successors* to the *throne*," "the wearers of the crown which the conqueror had won," and that at the same time "each successive possessor may regulate and dispose of the same according to his will and pleasure as private property, in the manner as was done by Kamehameha III" (Alexander 1890:121). While Hanaka'ō'ō Ahupua'a was not claimed by the Crown, both Honokōwai to north and Wahikuli to south were retained as Crown Lands (see also Figure 8).

Lands were further partitioned and set aside as Government lands which were defined and managed as indicated below:

> ... those lands to be set apart as the lands of the Hawaiian Government, subject always to the rights of tenants. And we do hereby appoint the Minister of the Interior and his successors in office, to direct, superintend, and dispose of said lands, as provided in the Act ... (p)rovided, however, that the Minister ... shall have the power, upon the approval of the King in Privy Council, to dispose of the government lands to Hawaiian subject, upon such other terms and conditions as to him and the King in Privy Council, may seem best for the promotion of agriculture, and the best interests for the Hawaiian Kingdom ... (Kingdom of Hawaii 1848)

In 1850, most of the chiefs ceded a third of their lands to the Government in order to obtain an allodia title for the remainder and thus greatly increasing the Government land base (Alexander 1890:114). The designation of lands to be set aside as Government lands, paved the way for land sales to foreigners and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41-51).

As illustrated above, in designations of lands as either Crown or Government, and through all awards of whole *ahupua'a* and *ili*, the rights of the native tenants were expressly reserved, "*Koe na Kuleana o Kanaka*" (Reserving the Rights of Native Tenants) (Alexander 1890:114). In an Act ratified on August 6th, 1850, the gathering rights of the common people for personal use, which included the gathering of both terrestrial and marine resources, in addition to the right to water and the right of way on the lands of the Konohiki, were guaranteed and embodied in Section 10477 of the Civil Code (Alexander 1890:114-115). By this same Act, resolutions passed by the Privy Council granted fee simple titles, free of all commutation, with the exception of awards granted within the towns of Honolulu, Lāhainā, and Hilo, to all native tenants for their cultivated lands and house lots (hereafter referred to as *kuleana* land) (Alexander 1890:115). Claims of the native tenants, or *kuleana* land claims, were presented to and heard by the Land Commission whose duty was to:

> ...ascertain the nature and extent to each claimant's rights in land, and to issue an Award for the same which is *prima facie* evidence of title "and shall furnish as good and sufficient a ground upon which to maintain an action for trespass, ejectment or other real action

> against any other person or persons whatsoever, as if the claimant, his heirs or assigns had received a Royal Patent for the same." (Alexander 1890:110)

Testimony for *kuleana* lands often included claims for multiple *'ili*, or *apana*, located both *mauka* and *makai*. These claims were recorded under a single *helu*, or case number, and brought before the Land Commission for consideration. *Kuleana* land awards, or *kuleana* claims that were approved by the Land Commission, were granted to tenants of the land, native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners, who could prove occupancy on the parcels prior to 1845 (hereafter referred to as Land Commission Awards [L.C.A.]).

Land Commission Awards (LCAs) were granted by ministers representing the Kingdom of Hawaii's Department of the Interior. Native testimony to establish title to real property was recorded by Native Register - wherein claimants would provide traditional proof of ownership - and in like manner foreign testimony by Foreign Register - wherein boundary survey evidence would support traditional claims.

With regard to the current project area and immediate vicinity, unlike Honokōwai, which boasted of a heavily cultivated stream valley, Hanaka'ō'ō and the stream valleys of Wahikuli and Hāhākea do not appear to have been heavily populated prior to European contact. In 1850, with the exception of one un-awarded claim by Kumaewa (Helu 7759) within to Hahakea Gulch, the majority of Hanaka'ō'ō Ahupua'a, including the area of the proposed project, was awarded to Kamehameha V [Lot Kapuāiwa LCA 7115, 'Āpana 1].

The whaling industry in the Pacific Ocean reached its peak in 1859 and prices for whale oil collapsed five years later. Since the 1840's, the Hawaiian economy had been dependent primarily on supplying whale ships during their long layovers in the islands. With the number of ships arriving during the early 1860's dwindling, the population of Lāhainā Town and neighboring west Maui *ahupua'a* dependent on the prosperity of Lāhainā migrated to other parts of Maui and other islands. Government censuses during the second half of the 19th century document the diminishing population of West Maui and, presumably, Hanaka'ō'ō, now subsumed in an enlarged Lāhainā District. In 1853, 4,833 persons were recorded as living in the Lāhainā District. Twenty-five years later, in 1878, the total district population had dropped to 2,448; and by 1896, the number had reached 2,398 (Schmitt 1977:12-13).

With the decline of the whaling industry in the Pacific, the Hawaiian Islands attracted a new generation of managers, professionals and entrepreneurs who would reshape the landscape for western enterprises and pursuits. Prominent in this movement would be Messrs. Samuel T. Alexander and Henry Perrine Baldwin. S.T Alexander had been sent from his family home at Lahainaluna to study at Oahu College (Punahou School) and Williams College in Massachusetts. S.T. Alexander returned to Lahainaluna in 1862 as a teacher, and is credited with improving sugar cane and banana yields with his students there (Dean 1950).

Reverend Dwight Baldwin (1798-1886) had arrived in the Hawaiian Islands in 1831 and was stationed at Lāhainā between 1835 and 1870. During the early 1850's, Rev. Baldwin had been granted 2,675 acres of land in northwest Maui. This land holding would be the basis for enterprises expanding over areas of West Maui undertaken by his son, Henry Perrine Baldwin, during subsequent decades of the 19th century.

In the middle part of the 1800s, H.P Baldwin and S.T. Alexander would team up to run the Waihee Plantation and go on to establish a plantation at Ha'ikū. In 1876, H.P. Baldwin and S.T. Alexander started a project to bring water from east Maui to the dry leeward isthmus of central Maui. It was the first important irrigation project undertaken in Hawai'i, and demonstrated a process which would be repeated many times throughout the Hawaiian Islands (Hawaiian Sugar Planters' Association 1926). The system by which mountain water was brought from Honokōhau to the Pioneer Mill Company (PiMCO) fields in Lāhainā is modeled precisely on the principles developed by Alexander and Baldwin.

3.1.4 Sugar Production 1863-1918

The growing of sugar cane along the west coast of Maui required the development of sources for mountain water as well as the development of a shipping port. The Pioneer Mill Company was established as a partnership in 1863, between James Campbell, Henry Turton, and Benjamin Pittman. Using gravity flow water from mountain streams, the Pioneer Mill Company produced 500 tons of sugar in 1866 (Dorrance and Morgan 2000) . Production reached 1,000 tons by 1872 with production clearing over 10,000 tons of sugar a year by the turn of the century (Thrum 1901).

The successful installation of wells at Kā'anapali, Wahikuli, Māla and Waine'e in 1897 (Stearns and MacDonald 1942) effectively doubled the production of sugar of the Pioneer Mill Company (Gilmore 1931). Between 1908 and 1912, the Pioneer Mill was consistently shipping over 25,000 tons of sugar annually out of Kā'anapali Landing, a production increase of over 150 percent following the improved supply of irrigation water made available in the early 1900's (Thrum 1913).

The Pioneer Mill installed a simple galvanized iron flume in the Honokōwai Stream in 1898, but the mechanism by which arid coastal lands could receive mountain waters was to be perfected on Maui's western coastline with the building of the Honokahau Ditch in 1904. The Honokahau Ditch consisted of tunnels and flumes 14 miles long, and delivered 20 million gallons per day to the PiMCo fields. Wells and pumps at underground water sources located at Honkōwai, Kā'anapali, Hāhākea, Wahikuli, Kahoma, Lahaina, Olowalu, Ukumehame, and Pu'ukoli'i supplied additional water (Gilmore 1931).

A competing sugar venture was organized by King Kamehameha V [Lot Kapuāiwa] in 1871. The West Maui Plantation Company was formed under the pretense that the high prices of sugar set during the American Civil War would continue. Louisiana's sugar beet industry recovered in the mid-1860's, causing American sugar prices to fall. Although the terms of an 1876 Treaty of Reciprocity with the United States gave great stimulus to Hawaiian sugar producers, the West Maui Plantation Company could not overcome the lack of available water sources. The enterprise closed in 1878 (Dorrance and Morgan 2000) and the lands of Lot Kapuāiwa in Hanaka'ō'ō were eventually acquired by the Pioneer Mill Company.

3.1.5 Early to Mid-1900's

The following description of the Kā'ānapali Coastline in the early 20th Century, as viewed from the ocean, was included in a compilation of the many early coastal surveys that were conducted from the Hawaiian Islands up to the islands and reefs westward to Midway Islands:

> The coast from Lahaina to Kekaa Point is low, back of which the country is planted in sugar cane. The coast from Kekaa Point to Lipoa Point consists of a series of low bluffs and stretches of sand beaches, along which may be seen numerous clumps of algaroba

(kiawe) trees. So far as known, this section of the coast has no outlying dangers. The country slopes gently, is more or less cut up by shallow gulches, presents a brownish appearance, and is covered with short grass. Kaanapali Landing, on the northerly side of Kekaa Point, is marked by a red warehouse and a white oil tank, which are just inside the sand beach. Kaanapali is the terminus of a plantation railroad which handles most of the sugar from this district. The boat landing is alongside of a wharf' which has derricks on it. Off the end of the wharf are several mooring buoy-so Good anchorage can be found in 10 to 20 fathoms about a mile off the wharf in the vicinity of the mooring buoys. (United States of America Department of Commerce 1919:24)

The Kā'anapali Landing at Pu'u Keka'a was the main sugar-storage facility for the Pioneer Mill Company. A warehouse 115 by 335 feet had a capacity to store 14,000 tons of sugar (Figure 9). The Pioneer Mill Company railroad connected the mill, three miles distant, to the Kā'anapali Landing. All transportation to and from the landing was by rail. A molasses storage tank at the port of Kā'anapali held 2000 tons of molasses. A fuel storage tank at the port held 25,000 barrels of fuel oil to fire the steam-powered locomotives, pumps and power plants of the Pioneer Mill Company. A 20-ton steam-powered derrick was set into the bedrock at the seaward end of Kā'anapali Landing, protected by a concrete wall that rose ten feet above sea level (Territory of Hawaii 1910:40-42). An aqueous ammonia storage tank was also located at the port (Gilmore 1931).

A lighterage system handled with surf lines was used to bring freight ashore and to load freight into smaller boats (Territory of Hawaii 1910:40-42) Inter-island steamers made weekly stops at Kā'anapali, and the bulk freighters taking on sugar and delivering supplies. No outside freight was handled except by special arrangement as Pioneer Mill Company refused to take public freight from this landing (Territory of Hawaii 1910:42). *Mauka* of the landing, the Baldwin Packers Ltd, owners of Honolua Ranch, delivered pineapple feed bran to a large cattle holding pen, where beef cattle were fattened prior to shipment to O'ahu (The Maui Historical Society 1971).

With adequate water resources assured for the plantation, the village system by which the plantation housed its field labor, expanded greatly. By 1931, the Pioneer Mill Company maintained villages from Māhinahina (at the Honolua Weir) to Olowalu and by the turn of the century, according to plantation records, 40 villages were situated among the fields and pump stations. A plantation map dated 1918 shows the Honokōwai Village area, with colored sections separating leasehold, government, and pioneer Mill Company acreage. In Hanaka'ō'ō, the largest of the PiMCo villages, Pu'ukoli'i Village, was described by one of its residents as a "...self-contained community. We didn't travel often into Lāhainā because we had our own company store, our own Japanese school, and our own Aikido dojo. The village bus would take the laborers to work before sunrise, then come back to take the children to Kam III School in Lāhainā. We also had our own cemetery, and when someone died, they would carry the casket to the baseball field, have the service there, and afterward carry the casket to the cemetery at the edge of the baseball field" (Okimoto and Okimoto 2007).

3.1.6 Modern Land Use and the Construction of the Westin Maui Hotel

In the years immediately following statehood in 1959, the Kā'anapali area north of Lāhainā was master-planned as a resort destination. The parent company of the Pioneer Mill Company, American Factors [AmFac], developed the cane lands located in Kā'anapali into the Royal Kaanapali golf course and the first hotel along the coastline, the Sheraton Maui Hotel, opened on Kā'anapali Beach in 1963 (Figure 10). Following the development of the Ka'anapali Beach Hotel and the Whalers Shopping Village, in 1971, the Maui Surf Hotel opened at what is known today as the Westin Maui Resort & Spa's Ocean Tower (Fischer 2013) (figure). Owned by Interisland Resorts of Honolulu and Connecticut General Life Insurance Co., designed by Sam Chang Architect & Associates, and constructed by Pacific Construction Co., Ltd. and R.M. Takeyama, the Maui Surf Hotel consisted of a 12-Story building shaped like an "very elongated 's'" which housed 354 rooms, a ballroom, and bar on 12-acres of oceanfront property (Quayle 1971).

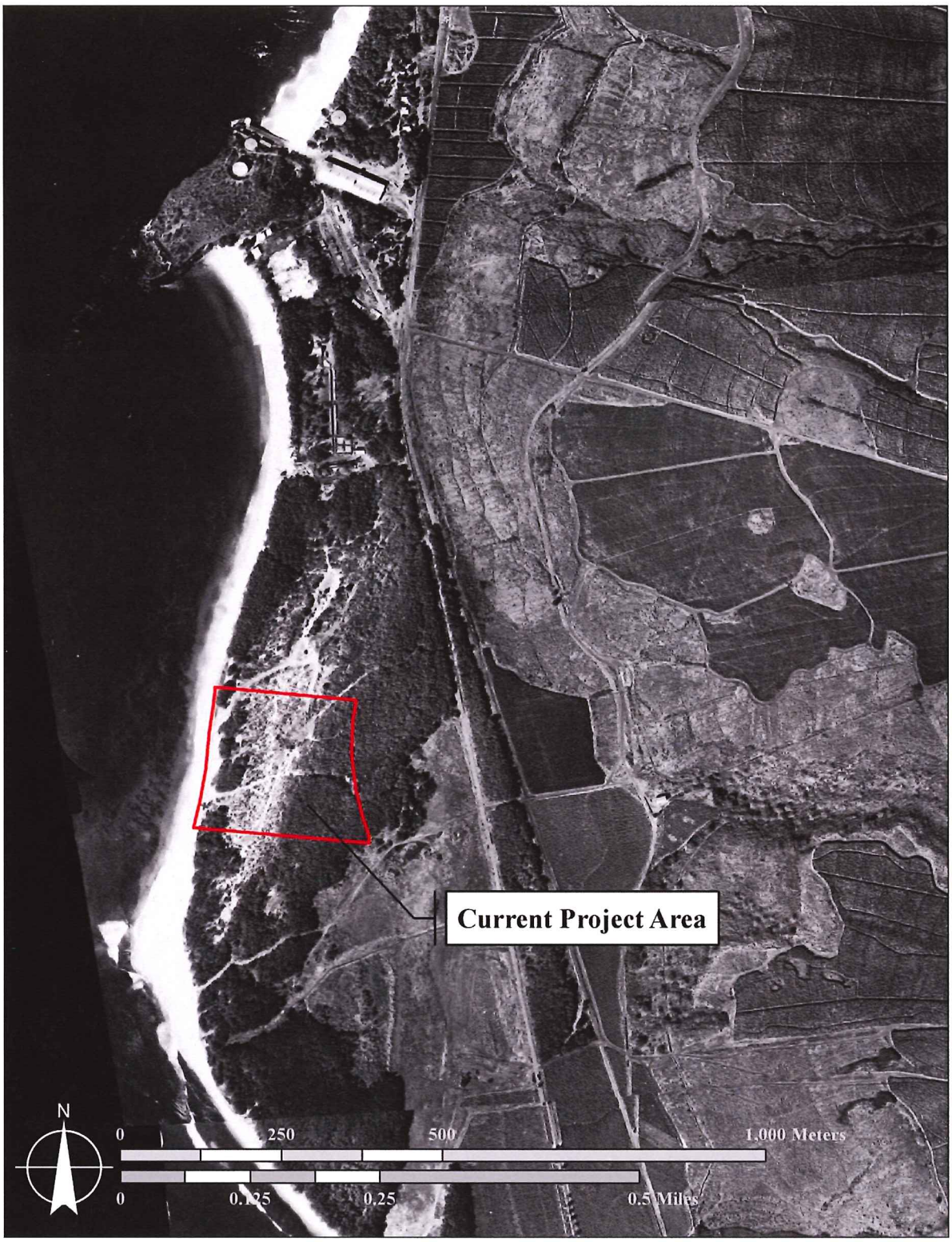


Figure 9. A portion of the Kā'anapali Shoreline in 1949 (School of Ocean and Earth Science Technology [SOEST] 1949) showing the location of the current project area in relation to the Pioneer Mill Co. facilities to the north and surrounding lands prior to resort and residential development.

Figure 10. A portion of the Kā'anapali Shoreline in 1963(School of Ocean and Earth Science Technology [SOEST] 1963) showing the location of the current project area in relation to the Sheraton Maui

Hotel to north, Royal Kaanapali Golf Course to the east and surrounding lands prior to resort development.

Figure 11. A portion of the Kā'anapali Shoreline in 1975 (School of Ocean and Earth Science Technology [SOEST] 1975) showing the built environment of the Maui Surf Hotel within the current project

> area, note Whalers Village Shopping Center to the north,. Royal Kaanapali Golf Course to the east, undeveloped lands to the south.

In 1987, the Maui Surf Hotel was redeveloped as the Westin Maui which included the construction of the 10-story, 209-room Beach Tower, new meeting rooms, convention facilities, restaurants, commercial spaces, a health and fitness spa, and a 25,00 sq. ft. swimming pool area; as well as, the renovation of the existing Maui Surf Hotel building (Fischer 2013) (see also Figure 6).

With the primary emphasis on tourism and the promotion of Lāhainā and Kā'anapali as a destination resort and vacation area, in addition to economic pressure from low sugar prices, AmFac was forced to phase out regional sugar cultivation and milling operations. The last sugar harvest for the Pioneer Mill Company occurred in 1999, with the mill itself closing in 2003 and thereby ending the chapter on the Sugar Era of West Maui (Kubota 2004b).

3.2 Previous Archaeological Research

The earliest archaeological studies along the leeward environments of Kā'anapali and Lāhainā Moku were a part of island-wide studies conducted in the early 1900's (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large scale architecture or traditional ceremonial *heiau* sites.

Winslow Metcalf Walker spent some of 1928 and half of 1929 on Maui, and was aided in his reconnaissance of the Lāhainā area by Dwight David Baldwin. Walker visited the Haluluko'ako'a Heiau (SIHP 50-50-03-11) and reported that the basalt stone work had been stripped from the structure for railroad track ballast. This *heiau* was located just north of a plantation camp (Kapunakea), in the *ahupua'a* of Wahikuli, and Walker reportedly collected legends connected with the *heiau* from informant J. Kahahana. Names and locations of the six *heiau* Walker recorded in the region of Lāhainā and Kā'anapali were assigned Walker site numbers 7 through 12 and are presented in the numerical order shown below:

1. **Halekumukalani Heiau**, (Walker Site 7) located in Halaka'a Ahupua'a, in Waine'e
2. **Apahua Heiau**, (Walker Site 8) Ku'ia Ahupua'a, at Waine'e
3. **Wai'ie Heiau**, (Site 9) Paunau Ahupua'a, at Kapaulu and Lahainaluna Road.
4. **Luakona Heiau**, (Site 10) just north of Lahainaluna Road in Kapaulu (Kelawea Camp)
5. **Haluluko'ako'a Heiau**, (Site 11) Wahikuli Ahupua'a, at the Māla Coconut Grove.
6. **Kahana Heiau**, (Site 12) in Māhinahina Ahupua'a, located at shore at Kahana Point

In 1937, John F.G. Stokes accumulated a number of historical references establishing beach sand dunes as a frequent place for human burial in the Hawaiian Islands and presented his findings to the Hawaiian Historical Society, stating:

> dune sepulture...was one of the regular mortuary practices and sites of such cemeteries are known in practically all the islands. They are generally remote from sites of ancient habitations (Stokes 1937:33).

The burials of the *maka'aina* were "all placed vertically in the knee-to-face or flexed position." Malo describes the manner of preparation:

> A rope was attached to the joints of the legs and then being passed about the neck was drawn taut until the knees touched the chest. The body was then done up in a rounded shape and at once closely wrapped in *tapa* and made ready for burial (Malo 1951:97)

Stokes (1937) described dune burials as occurring only a few inches below the surface of the sand, which would normally result in large-scale exposure of skeletal remains during the shifting of the dunes due to wind or storm erosion. Burials exposed in this manner were described previously in the region of Pu'u Keka'a by Fornander (1919d). Fornander assumed that the vast exposure of skeletal remains in the sands of Keka'a was because "this was the vicinity of several bloody battles that doubtless left their toll" and continues to explain:

> 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, 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 ground (Fornander 1919d:542).

Stokes (1937), however, did not agree that dune burials, where many hundreds of burials may be exposed, were the end-result of gigantic battles. He maintained that reports of massed conflicts were rare in the oral tradition of pre-contact Hawai'i. On the island of Maui, with the exception of large battle forces annihilated on the sand dunes of Central Maui in the Battle of Kakanilua, and the defeat of the massed armies of Maui by Kamehameha at the Battle of Kepaniwai at 'Īao, most stories of battles involve a series of skirmishes, during which the opposing forces would have been separated into small groups and scattered in many directions (Stokes 1937:36).

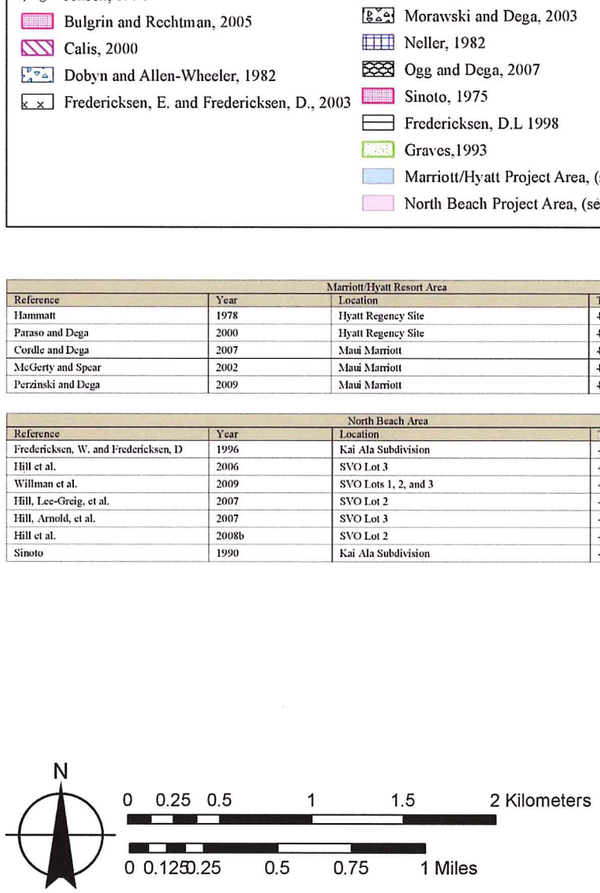
Stokes concluded his study of the presence of human skeletal remains within beach dunes as the result of normal pre-contact dune burials rather than the result of cataclysmic battles. Stokes established the universal manner in which these burial areas were normally uninhabited because the spirits of the dead were to be feared, and were known to linger near these cemeteries (Stokes 1937:33). As the westernmost portion of the current project area appears to overly Jaucus Sand Deposits (JaC) (see also Figure 5 and Figure 57), a sediment type known to be associated with culturally sensitive remains or human burial interments, both conclusions may be applicable to the present project area.

Between 1931 and 1972, only sporadic archaeological studies were undertaken in the Honokōwai area. There was an assignment of State Site numbers, with limited additional recording, to selected sites previously recorded by Walker in 1931, by Robert Connolly and Robert J. Hommon for the State of Hawai'i Inventory of Historic Places. Connolly's work for the State Historic Register Survey in 1973 revisited two previously documented sites, Luakona Heiau at Kelawea (Walker Site 10, State Inventory of Historic Property (SIHP) # 50-50-3-10) and Haluluko'ako'a Heiau at Māla (Walker Site 11, SIHP # 50-50-3-11). Following the passage of the National Historic Preservation Act in 1966 and Chapter 6E of the Hawai'i Revised Statutes which established the Historic Preservation Program in 1976, archaeological studies in the Lāhainā and Kā'anapali area occurred as a condition of the subdivision and development on a more frequent basis. In this vein, the lands surrounding the current project area have been subject to over 25 different investigations (Figure 12 and Table 3).

- Current Project Area
- Frederiksen, E., 2006
- Buffum and Spear, 2002
- Frederiksen, E., 2007
- Barrerra, 1988
- Frederiksen and Frey, 2008
- Griffin (editor), 1976
- Jensen and O'Claray, 1991
- Jensen, 1991
- Jensen, 1994
- Bulgrin and Rechtman, 2005
- Calis, 2000
- Dobyn and Allen-Wheeler, 1982
- Frederiksen, E. and Frederiksen, D., 2003
- Guerriero et al., 2005
- Havel and Dega, 2005
- Hill et al., 2008a
- Hommon, 1982
- Jensen and Mehalchick, 1992
- Jensen, 1989
- Jensen, 1990
- Kaschko, 1974
- Keau, 1981
- Kennedy and Denham, 1992
- Morawski and Dega, 2003
- Neller, 1982
- Ogg and Dega, 2007
- Sinoto, 1975
- Frederiksen, D.L 1998
- Graves,1993
- Marriott/Hyatt Project Area, (see table)
- North Beach Project Area, (see table)

Marriott/Hyatt Resort Area			
Reference	Year	Location	TMK
Hammatt	1978	Hyatt Regency Site	4-4-13:004, 005, 008
Paraso and Dega	2000	Hyatt Regency Site	4-4-13:004, 005, 008
Cordle and Dega	2007	Maui Marriott	4-4-013:001
McGerty and Spear	2002	Maui Marriott	4-4-013:001
Perzinski and Dega	2009	Maui Marriott	4-4-013:001

North Beach Area			
Reference	Year	Location	TMK
Fredericksen, W. and Fredericksen, D	1996	Kai Ala Subdivision	4-4-006:15
Hill et al.	2006	SVO Lot 3	4-4-014: 05 (por)
Willman et al.	2009	SVO Lots 1, 2, and 3	4-4-014:03, 04, 05 (por)
Hill, Lee-Greig, et al.	2007	SVO Lot 2	4-4-014:04 (por)
Hill, Arnold, et al.	2007	SVO Lot 3	4-4-014:05 (por)
Hill et al.	2008b	SVO Lot 2	4-4-014:04 (por)
Sinoto	1990	Kai Ala Subdivision	4-4-006:15



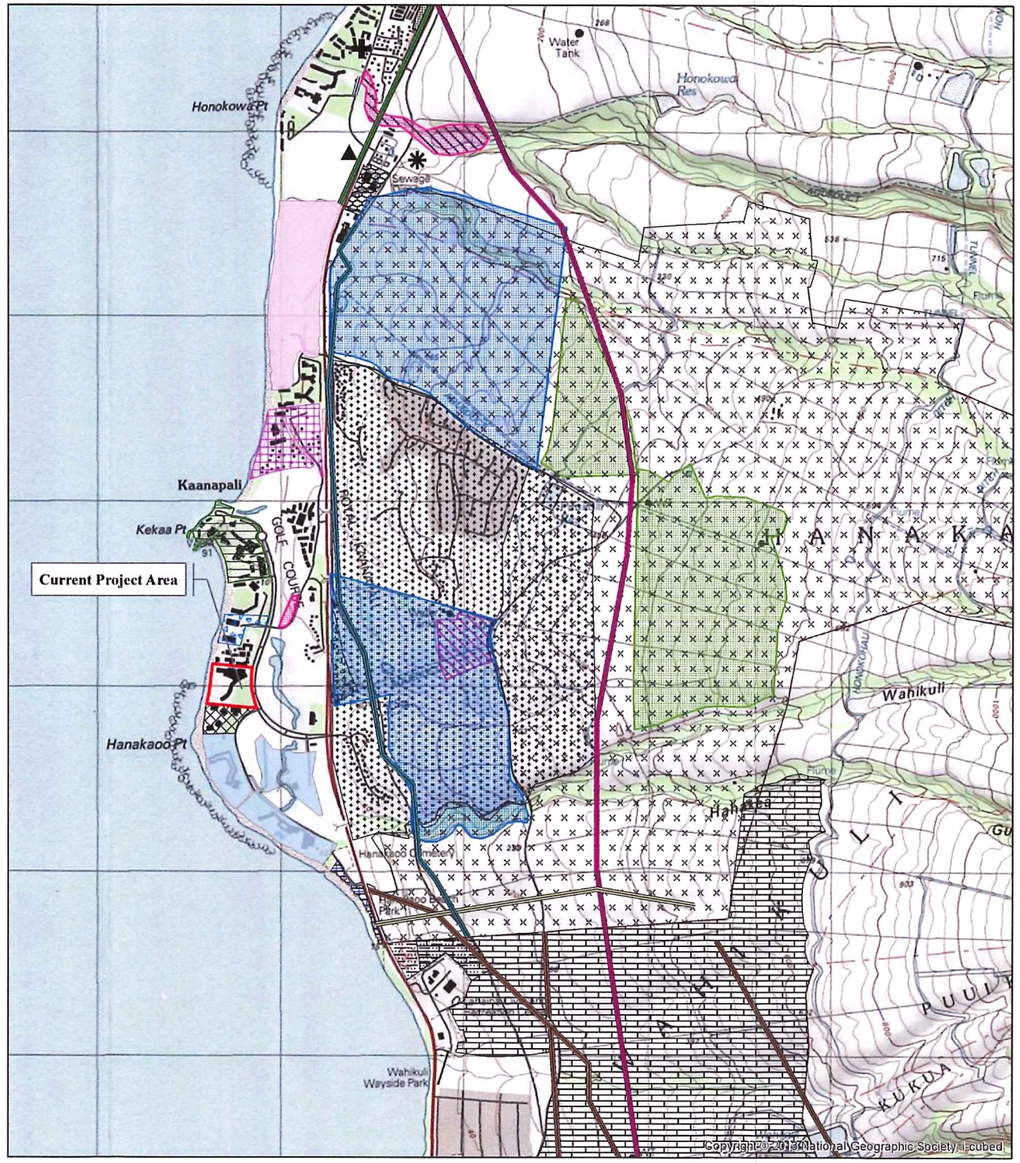


Figure 12. A portion of the 1992 Lāhainā 7.5-minute U.S.G.S. topographic quadrangle, current project area cross-hatched in red

Table 3. Timeline and Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (see also Figure 12)

REFERENCE	LOCATION	DESCRIPTION AND RESULTS
(Walker 1931)	Island-wide	Archaeological Survey: Focus on large-scale architecture and ceremonial sites. Specific to West Maui, identified 18 *heiau* from Ukumehame Valley to Honokohau Valley. Closest *heiau* (Walker Site 11) to the current project area was identified in Wahikuli Ahupua'a.
(Emory and Hommon 1972)	Island-wide	Report listing endangered archaeological sites within Maui County. Noted that "Honokōwai gulch has the greatest concentration of sites of the [Federal] reclamation project area." (p.40)
(Kaschko 1974)	Honolua watershed survey including Honokōwai Valley	Archaeological Walk-Through Survey: Noted as Site 6, re-identified a "complex of several low stone alignments and platforms, recorded by the State Historic Sites inventory in 1973 as site no. 50-50-03-1208".
(Sinoto 1975)	Honolua Watershed, Gulches and Valley Bottoms of Multiple Ahupua'a	Archaeological Field Examination: Examined 6 historic properties. SIHP 50-50-03-1208 in Honokōwai Gulch, SIHP -225 in Māhinahina Gulch, SIHP -1750 in Honokeana Gulch, SIHP -1748 in the north side of Nāpili 4-5 Gulch and SIHP–1749 in the south side of Nāpili 4-5 Gulch.
(Griffin 1976)	Honoapi'ilani Realignment: Honokōwai to 'Alaeloa Ahupua'a	Archaeological Survey and Salvage:
(Davis 1977)	Honokōwai Gulch	This investigation established Honokōwai Gulch as having been "intensively used for the cultivation of irrigated taro, and extensively modified with terraced pond-fields, habitation platform terraces and related structures." Davis listed 86 separate *'āpana* contained in 114 land grants in Honokōwai Ahupua'a, and described features observed in complexes SIHP -228, -229, -230 and -231.
(Hammatt 1978)	Hyatt Regency Hotel, Hanaka'ō'ō Ahupua'a	Archaeological Reconnaissance: Determined that the area had been adversely impacted with little to no probability of encountering *in situ* cultural deposits.
(Keau 1981)	Hāhākea Beach Park, Hanaka'ō'ō Ahupua'a	Archaeological Reconnaissance: Noted presence of the Grinidng Stone SIHP -1204 and fishing significance of the area. Recommended subsurface testing to further evaluate presence or absence of subsurface deposits.

REFERENCE	LOCATION	DESCRIPTION AND RESULTS
(Dobyns and Allen-Wheeler 1982)	Kā'anapali Ali'i Condominium, Hanaka'ō'ō Ahupua'a	Archaeological Monitoring: Identified 2 *in-situ* burials, 3 additional skulls and 2 groups of human skeletal fragments during Phase 2 grading and construction work in the *makai* portion of the parcel.
(Hommon 1982)	North Beach and South Beach Mauka, Hanaka'ō'ō Ahupua'a	Archaeological Reconnaissance: Recorded 10, multi-component historic properties within the gulches. These features included over 23 terraces, 3 probable road and trail segments, 3 walls, and one possible ceremonial feature.
(Neller 1982)	Hāhākea Beach Park Hanaka'ō'ō Ahupua'a	Archaeological Reconnaissance: Existing cemetery and the previously described Hanaka'ō'ō grindstones are noted. No significant historic properties identified during subsurface testing.
(Rosendahl 1987)	96-acre North Beach Development Area, Lots 1-4, Honokōwai Ahupua'a	Paul H. and Margaret L. K. Rosendahl conducted a subsurface archaeological reconnaissance survey of the 96-acre North Beach Development Area, concentrating on the shoreline dune system. SIHP 50-50-03-2696, (Rosendahl Site T-101) was the only site recorded, which was described as an "L-shape wall" measuring 31.5 m long, 2 m wide and 90 cm tall. Portions of the wall appeared to consist of bulldozer push, and no subsurface cultural deposits were observed following two core tests. A monitoring plan (PHRI 1987) covering the development of Lots 1-4 was approved by SHPD.
(Barrera 1988)	Honoapi'ilani Realignment, Multiple Ahupua'a	Archaeological Reconnaissance: Identified and unrecorded agricultural complex at Alternative C and Kahoma Stream, an unrecorded possible habitation terrace at Alternative A and Honokōwai Stream.
(Jensen 1990)	South Beach Mauka Development, Hanaka'ō'ō Ahupua'a	Archaeological Inventory Survey: Identified nine sites with 49 component features. Five were previously identified by Hommon (SIHP -2004 [late historic wall], 2006-2008 [three terraces, wall segment, historic road segment], and 2010 [wall]) in 1982. Jensen identified two agricultural complexes (SIHP -2489 and -2490) along the Hāhākea Stream.
(Sinoto 1990)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Surface Assessment: No significant historic properties identified during surface inspection.
(Jensen 1991)	Lahaina Bypass Section for Honoapi'ilani Highway realignment, Multiple Ahupua'a	Archaeological Inventory Survey: Relocated three previously identified sites (agricultural terraces and walls) and recorded one new historic property (walled enclosure).

REFERENCE	LOCATION	DESCRIPTION AND RESULTS
(Donham 1992)	'Au'au Channel	Artifact Recovery: Possible *ku'ula* stone recovered approximately 2.6 to 3.4 miles west of Hanaka'ō'ō Point at a depth range of 240-260 ft by a diver.
(Jensen and Mehalchick 1992)	Pu'ukoli'i Village, Hanaka'ō'ō Ahupua'a	Archaeological Inventory Survey: The Pu'ukoli'i Cemetery (SIHP 50-50-03-2893) was noted as not in the project area, and a previously identified pre-contact agricultural terrace (SIHP 50-50-03-2491) was re-evaluated as bulldozer push.
(Graves 1993)	Sheraton Maui Resort, Hanaka'ō'ō and Honokōwai Ahupua'a	Archaeological Inventory Survey: 15 backhoe test trenches produced no observable cultural material. No significant historic properties identified.
(Jensen 1994)	Lahaina Bypass Connector Roads, Hanakao'o and Paunau Ahupua'a	Archaeological Inventory Survey: No significant historic properties identified.
(E. M. Fredericksen et al. 1995)	Honokōwai Beach Park, Honokōwai Ahupua'a	Archaeological Inventory Survey: 19 backhoe trenches and 8 auger tests in the dune sands. No significant historic properties identified.
(W. M. Fredericksen and Fredericksen 1996)	Kai Ala Subdivision, North Beach Development Area, Honokōwai Ahupua'a	Archaeological Inventory Survey: No significant historic properties identified.
(D. L. Fredericksen 1998)	Sheraton Maui Resort, Hanaka'ō'ō and Honokōwai Ahupua'a	Archaeological Monitoring: Documented 9 random finds and 8 in-situ sets of human skeletal remains. The finds represented burials from two historic cemeteries at Pu'u Keka'a, which were subsequently reinterred in a preserve on the Sheraton Maui property.
(Calis 2000)	Adjacent to the Royal Ka'anapali Golf Course, Hanaka'ō'ō Ahupua'a	Archaeological Inventory Survey: No significant historic properties identified.
(Buffum and Spear 2002)	Mauka of Honokōwai Beach Park, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(McGerty and Spear 2002)	Maui Marriott Ocean Club, Hanaka'ō'ō Ahupua'a	Archaeological Inventory Survey: No significant historic properties identified.

REFERENCE	LOCATION	DESCRIPTION AND RESULTS
(E. M. Fredericksen and Fredericksen 2003)	Ka'anapali 2020 Development Area, Hanaka'ō'ō and Honokōwai Ahupua'a	Archaeological Inventory Survey: Identified 79 new historic properties within Hanaka'ō'ō, Honokōwai, Hahakea, and Wahikuli Gulches consisting of agricultural features (n=37), two of which may have included possible burials; ceremonial features (n=3); habitation features (n=20), one of which may have included a possible burial; isolated burial features (n=1); isolated rock art panels (n=9); and plantation era infrastructure (n=9).
(Morawski and Dega 2003)	Mauka of Honoapi'ilani Highway, Hanaka'ō'ō Ahupua'a	Archaeological Inventory Survey: No significant historic properties identified.
(Bulgrin and Rechtman 2005)	Adjacent to Ka'anapali Golf Course, Hanaka'ō'ō Ahupua'a	Archaeological Assessment: No significant historic properties identified.
(Guerriero et al. 2005)	Royal Lahaina Resort, Hanaka'ō'ō Ahupua'a	Archaeological Assessment: No significant historic properties identified.
(Havel and Dega 2005)	Mauka of Honokōwai Beach Park, Honokōwai Ahupua'a	Archaeological Assessment: No significant historic properties identified.
(E. M. Fredericksen 2006)	Mauka of Honoapi'ilani Highway, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(Hill et al. 2006)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(Paraso and Dega 2006)	Hyatt Regency Maui Resort, Hanaka'ō'ō Ahupua'a	Archaeological Assessment: Possible cultural layer – no SIHP number assigned, not recorded or investigated further as it fell outside of the study area.
(Cordle and Dega 2007)	Maui Marriot Vacation Club, Hanaka'ō'ō Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(E. M. Fredericksen 2007)	Mauka of Honoapi'ilani Highway, Hanaka'ō'ō/ Honokōwai Ahupua'a	Archaeological Assessment: No significant historic properties identified.
(Hill, Arnold et al. 2007)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Monitoring: Recorded a previously unidentified historic property, possible ko'a (fishing shrine), in the dune system fronting the open space area adjacent to the Westin Kā'anapali.
(Hill, Lee-Greig et al. 2007)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.

REFERENCE	LOCATION	DESCRIPTION AND RESULTS
(Ogg and Dega 2007)	Lahaina Wastewater Pump Station, Honokōwai Ahupua'a	Archaeological Assessment: No significant historic properties identified in the larger parcel (029), small parcel (033) not tested.
(E. M. Fredericksen and Frey 2008)	Ka'anapali Shores Roadway, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(Hill et al. 2008a)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(Hill et al. 2008b)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.
(Perzinski and Dega 2009)	Maui Marriot Vacation Club, Hanaka'ō'ō Ahupua'a	Archaeological Monitoring: Documented two historic properties comprised of multiple human burials (SIHP -6279 [5 *in situ* and numerous isolated elements] and 6586 [1 *in situ* and 1 previously disturbed]).
(Willman et al. 2009)	North Beach Development Area, Honokōwai Ahupua'a	Archaeological Monitoring: No significant historic properties identified.

3.2.1 Archaeological Studies of the Stream Valleys and Watershed Adjacent to and Mauka of the Current Project Area

The County of Maui, led by former mayor Elmer Cravalho in association with Dr. Kenneth P. Emory and Robert J. Hommon, produced a report listing "Endangered Hawaiian Archaeological Sites Within Maui County"(Emory and Hommon 1972). Within the Lāhainā District, including Kā'anapali, they recommended that several gulches be surveyed. Of these gulches, Honokōwai Gulch was noted as having "the greatest concentration of sites of the (U.S. Army Corps of Engineers') reclamation area". This observation led to the recommendation for archaeological survey of the valleys located along the Honoapi'ilani Highway roadway corridor.

The first of these surveys appears to have been performed by Michael Kaschko during an archaeological walk-through survey of specified areas in the Wailuku Flood Prevention Project and the Honolua Watershed (Kaschko 1974). The general settlement model proposed for Honokōwai Valley by Emory and Hommon (1972) in conjunction with archaeological data and the filing of Land Commission Awards, was supported by Connolly and Hommon in 1974. Kaschko's findings were tempered by the amount of destruction caused by years of commercial agricultural activities, and made no mention of settlement patterns. The Emory model predicted that most of the lower sections of Honokōwai Gulch and other gulches in the vicinity would be inhabited by populations dependant on wetland taro, and that temporary habitation sites would be distributed in the upper valley on slopes and stream flats (alluvial terraces) in areas where dryland agriculture occurred. Kaschko's survey in Honokōwai, Māhinahina, Pōhaku-Kā'anapali, Kahana, Ka'ōpala, Honokeana, Nāpili 4-5, and Nāpili 2-3 identified six archaeological sites. Each site was evaluated for further study, and each was assigned a Bishop Museum site number.

Aki Sinoto (1975) performed a walk-through field examination of six sites in the Honolua Watershed. He relocated and flagged sites located previously by Kaschko in 1974, and made further recommendations as to their importance. They were assigned State site numbers. These were: SIHP 50-50-03-1748, a "stone and earth rectangular platform located at the bottom of the slope on the north side of Nāpili 4-5 gulch" SIHP -1749, a "second rectangular platform located on the south slope of Nāpili 4-5" SIHP -1750, a "walled structure 5 meters south of the stream bed, near the *mauka* end of the reservoir, in Honokeana gulch" SIHP -217, a "cultural deposit located in the north bank of the main stream channel of Mahinahina gulch" SIHP -218, a "second, more extensive cultural deposit found in the north bank of the north branch of Mahinahina gully" and SIHP -1208, "a complex of several low stone alignments and platforms, located on the north slope of Honokowai gulch."

Research performed by Bertell Davis (1977) in association with his surface survey of Honokōwai Gulch listed 114 land grants in the *ahupua'a*, totaling 86 *'apana* (Indices of Land Commission Awards 1929). These historical references indicated the intense use of Honokōwai Valley for the "cultivation of irrigated taro". Davis' archaeological survey "found that the lower portion of the gulch had been extensively modified with terraced pond-fields, habitation platform terraces and related structures". "A brief summary of observed features includes stone-faced terraces for both irrigated and dry land agriculture, habitation platforms, field shelters, multiple retaining walls, free standing stonewalls, remnant diversion dams, irrigation channels (*'auwai*), and a possible agricultural shrine (*ko 'a ho 'oūlu 'ai*) [SIHP -228, -229, -230, and -231].

Using radiocarbon data, Hommon and Ahlo (1982) expanded on the early settlement pattern models to postulate that occupation of the Honolua Watershed gulches had probably occurred "several centuries prior to western contact", and that, owing to the large number of LCAs recorded within the gulches, the settlement pattern of the leeward coastline consisted of permanent and temporary habitation sites bounded by valley ridges and slopes. Hommon and Ahlo further described the Honokōwai area thus:

The Honokowai Petroglyphs Site (Site-1207) includes 38 and 45 petroglyphs, respectively. Most are human figures pecked, abraded and incised on boulders and bedrock outcrops. The Hanakao'o Grindstone (Site -1204) appears to have been an adze sharpening station. In general, the sites appear to evidence agricultural use of these gulches, as well as occupation by a rather small, sparse population. A detailed picture of the ancient land use of these gulches is precluded by the small number of sites found there. The Honoapi'ilani Highway Survey Area, for example, the most extensive of the survey areas, contained only 4 sites, including two walls, a trail and a midden deposit. The latter, Site -225, was the subject of intensive excavations and yielded radiocarbon dates that indicated occupation for several centuries prior to Western contact (1778).

Peter Jensen and Gemma Mehalchick (1992) conducted an archaeological inventory survey of 260 acres along Hāhākea Gulch slated for development by AmFac the owners of the Kā'anapali resort area. The project area included a portion of a former plantation village site, Pu'ukoli'i Village. It had once been the largest camp established by the Pioneer Mill Company. The Pu'ukoli'i Village cemetery (SIHP 50-50-03-2893) was not in the project area, and a previously identified pre-contact agricultural terrace (SIHP 50-50-03-2491) was re-evaluated as bulldozer push. Other than remnant plantation debris, no significant cultural material was observed.

Most recently, Xamanek Researches conducted an archaeological inventory survey of over 4,000 acres that covered three stream valleys and the dividing ridge areas directly *mauka* of the current project area (E. M. Fredericksen and Fredericksen 2003). During the course of the inventory fieldwork, a total of 81 new historic properties were identified within Hanaka'ō'ō, Honokōwai, Hahakea, and Wahikuli Gulches, the majority of which consisted of agricultural features and associated habitation features. Possible burial features were also identified within two of historic properties identified as agricultural complexes, one isolated habitation feature, and two overhang features. Like other stream valleys that experienced similar intensive pre-contact agricultural modifications and habitation, rock art panels were also a relatively frequent historic property type. Intensive commercial sugar cultivation notwithstanding, remnant materials from Pukoli'i Village were identified as a part of a surface scatter within the Xamanek Researches project area and the cemetery associated with the village was also re-identified as a part of the study.

3.2.2 Archaeological Studies of the Coastal Reaches Adjacent to the Current Project Area

Following the island-wide surveys, and though formal documentation has not been found at this time, it appears that some archaeological excavation conducted by the Bishop Museum and Maui Historical Society occurred during the construction of the Whalers Village Shopping Center in 1969 (Minutes of the Maui/Lanai Island Burial Council Meeting, Thursday February 23, 2006), the occurrence of which came to the forefront when an individual was charged with violating Archaeological Resources Protection Act following an attempt to sell a cranium that was stolen from the construction site in August of 1969 on eBay (ARPA) (Apgar 2004; Kubota 2004a). In

addition to the cranium, an affidavit filed by the federal investigator for the criminal case quoted the seller as saying "right next to this skeleton, there were some warrior artifacts ... like hatchets and stuff like that, but I was afraid to take those things, I left those in the sand" (Apgar 2004). While cranium was ultimately repatriated and reinterred on the property of the Whalers Village Shopping Center in 2008 (Minutes of the Maui/Lanai Island Burial Council Meeting, Thursday July 31, 2008), details regarding the disposition of the artifacts discussed in the affidavit and other potential findings have not been encountered at this time.

The earliest published archaeological work along the coastline appears to have been accomplished in 1981, by Charles Keau. Mr. Earl Neller then conducted subsurface testing within the Hāhākea Park, in Hanaka'ō'ō, in order to ascertain surface features reported by Charles Keau in his 1981 reconnaissance of the same project area. Their work was conducted adjacent to the Hyatt Regency Kā'anapali Resort, and noted the location of a "Chinese" cemetery and a previously identified set of two grindstones. No additional cultural material was observed by Neller.

Additionally in 1982, Susan Dobyns and Jane Allen-Wheeler completed a monitoring report of their work at the Kā'anapali Ali'i Condominium. Phase II grading in the construction area for four hotel towers revealed two *in-situ* burials, three additional skulls and two groups of human skeletal fragments. Six basalt flakes were collected and reburied with the human skeletal remains by the County of Maui. The location of the reburial was not disclosed in the monitoring report. During more recent archaeological monitoring work associated with renovation and construction activities, at least 12 burial finds (SIHP -6662 Features 1-12), both *in situ* and previously disturbed, as well as two probable intact burial pits, were identified in sandy sediments below imported fill within the courtyard area located on the *makai* side of the residential towers (Rotunno-Hazuka 2009b, 2013).

In 1987, Paul H. Rosendahl, Inc. conducted an archaeological reconnaissance survey that included subsurface testing within the 96-acre North Beach Development area. The investigation consisted of ten backhoe trenches, section profiles of two portions of the sand dune and approximately 75 soil cores. The resulting 1987 subsurface testing and survey report by Margaret L. K. Rosendahl (1987) did not identify any buried cultural deposits and/or burials. One surface site, SIHP 50-50-03-2696 was described as an "L-shaped wall" composed of large water-worn boulders that was measured 31.5 meters long, 2 m wide and 90 cm tall. The condition and location of this feature was further described as:

> Situated parallel to and immediately seaward of the cane haul road, with the shorter segment extending west (toward the ocean) off the south end of the longer segment. Roughly half of the shorter segment contains soil and sand within the boulder pile, which gives the segment the appearance of being pushed into place. The feature is in poor condition (Rosendahl 1987).

Jensen (1990) conducted an archaeological inventory survey of 340 acres of the South Beach Mauka Development Area. He identified nine sites containing 49 component features; seven of the nine sites had been previously identified by Hommon (SIHP -2004-2010) in 1982, which consisted of 18 pre-contact agricultural terrace remnants, 3 pre-contact short wall segments, and two historic road segments. Jensen identified -2489; an agricultural complex of terraces, a footpath and possible habitation and burial features along Hāhākea Stream, and -2490; an agricultural complex of walled terraces and enclosures further downstream

Peter M. Jensen (1991) conducted an archaeological inventory survey of a proposed roadway corridor, which represented a seven-mile-long realignment of the Honoapi'ilani Highway that was designed to bypass Lahaina Town. The roadway corridor proposal relocated the roadway one mile inland (*mauka*) of the existing Honoapi'ilani Highway. Three previously identified sites (comprised mainly of agricultural terraces and walls), and a new site (a walled enclosure) were recorded. These sites included SIHP 50-50-03-2480: an agricultural complex identified in Hāhākea Gulch that "contains relatively well-preserved habitation features", SIHP -2489 and -2490: that were described as "prehistoric agricultural complexes located at the confluence of two branches of the Hāhākea Gulch", and SIHP -2487: "located at the terminus of the ridge separating the two branches of the Honokōwai Stream"

Both Pu'u Keka'a and the Wharf at Ka'anapali have been previously assigned state inventory of historic places (SIHP) site numbers. Pu'u Keka'a is listed in the state site inventory as SIHP 50-50-03-1206 (SHPD LOG NO: 7721, DOC NO: 9303AG43; SHPD Maui Site Access Database) and the Ka'anapali Wharf is SIHP 50-50-03-2952 (SHPD LOG NO: 14406, DOC NO: 9504KD16). During the subsurface survey for the redevelopment of Sheraton Maui Resort located atop and at the base of Pu'u Keka'a, Donna K. Graves (1993) excavated a total of 15 backhoe trenches in three specified test areas (Areas 1-3). Each backhoe trench measured 5m by 0.75m and ranged depth from 1.7 to 2.9m below surface. While the subsurface survey did not reveal any cultural material, the author of the archaeological assessment report did note historic accounts regarding human remains observed during the initial construction of the Sheraton Maui Hotel and subsequent improvements and as such, the SHPD recommended archaeological monitoring during "activities involving below grade disturbance (SHPD LOG NO:9090; DOC NO:9308AG54 and SHPD LOG NO:13108; DOC NO:9411KD03). The subsequent monitoring program was carried out under the approved *Archaeological Monitoring Plan for the Sheraton-Maui Redevelopment Project* (D. L. Fredericksen and Fredericksen 1995) (SHPD LOG NO:14965; DOC NO:9507KD30).

Archaeological monitoring of the 1995 redevelopment project for the Sheraton Maui occurred over a two-year period from 1995 through 1997. Over the course of monitoring, a total of nine isolated human skeletal elements and eight casket burials (D. L. Fredericksen 1998) were identified and a burial preservation area was established during construction (SIHP 50-50-03-4136) (D. L. Fredericksen 1996). The isolated skeletal elements were all encountered in fill deposits between 18-30 cm below surface (cmbs). In one instance (RF 1), a portion of a human ilium had been identified in planter soils that were inadvertently intermixed with bovine faunal remnants (D. L. Fredericksen 1998:8).

With regard to the *in situ* historic era casket burials, there are two varying depositional and interment environments. Atop Pu'u Keka'a, the caskets were interred in pockets that were carved out of the bedrock at depths ranging from 50-80 cmbs then backfilled with sandy sediment (D. L. Fredericksen 1998:Figure 1 and Figure 4). Casket burials found at the base of Pu'u Keka'a were encountered at greater depths, between 80-200 cmbs, and in sandy deposits below fill (D. L. Fredericksen 1998:Figure 3 and Figure 5).

In addition to the above noted burial finds, three grave markers and one historic *imu* or cooking pit were identified during archaeological monitoring of the Sheraton redevelopment. Two marble headstones engraved with Japanese characters were encountered during construction work in a

location identified as Area 4 and buried within the burial preserve (D. L. Fredericksen 1998:23). Atop Pu'u Keka'a a cut granite base for a grave marker was identified by construction workers (D. L. Fredericksen 1998:23). At the time of the writing of the monitoring report, the granite base was planned to be used as the holder for the bronze plaque identifying the burial preservation area (D. L. Fredericksen 1998:25). Finally, an *imu* pit with *kiawe* wood charcoal and *imu* stones was identified near the beach in front of the Cliff Tower (D. L. Fredericksen 1998:23). As *kiawe* is an introduced tree species, it is likely that this *imu* was associated with early post-contact or plantation era activities.

Robert R. Hill, Joseph Arnold and Hallett H. Hammatt (2007) monitored the hand excavation of irrigation trenches within the beach dune system fronting the 10-acre open space area. A remnant historic property was identified during the course of hand clearing *kiawe* trees on the beach dune. SIHP 50-50-03-6275 made up of three associated features: Feature A, a remnant pre-contact fishing shrine, or *ko'a* consisting of a small rectangular platform measuring 1.6 m by 1.4 m by 0.32m high; Feature B, a remnant 2m by 1.5 m paved area constructed of *'ili'ili*, or basalt pebbles; and Feature C, a discrete concentration of water rounded coral located at the base of the dune (Hill, Arnold et al. 2007:46).

Most recently, seven *in situ* human burials (SIHP 50-50-03-6279 Features B-E and -6586 Features A and B) and over 2,700 isolated and previously disturbed skeletal elements (SIHP -6279 Feature A) were identified during archaeological monitoring of construction work at the Maui Marriott Vacation Club (Perzinski and Dega 2009). The *in situ* burials were identified within Jaucus sand deposits below imported fill layers and/or disturbed sediment while the previously disturbed skeletal elements of Feature A of SIHP -6279 were identified within the fill and disturbed deposits (less than 20 cm below surface to over 2 m below surface) (Perzinski and Dega 2009:14-24). The disturbed nature of both the skeletal elements of Feature A and associated sediments matrix were postulated to be the result of previous hotel construction work (Perzinski and Dega 2009:21). Prior to the finds identified in 2009, a human burial was identified during excavation for pool installation in the center of the Maui Marriott Vacation Club hotel complex (SIHP 50-50-03-4985) (Perzinski and Dega 2009:10; Rotunno-Hazuka 2009b). According to Lisa Rotunno-Hazuka of Archaeological Services Hawai'i (personal communication), the burial find contained both previously disturbed skeletal elements and one *in situ* find within sandy sediments.

3.3 Background Summary and Predictive Model

Based on traditional knowledge and historic records researched for this study (see Section 3.1.1.1 Mo'olelo and Traditional Accounts 3.1.1.2 Subsistence and Habitation, and 3.1.1.3 Politics and Warfare), as well as archaeological evidence and interpretations (see also Section 3.2 Previous Archaeological Research), we know that the marine resource rich coastal area was highly used during the time period before western contact as evidenced. It also appears that the Hawaiian population prior to Western contact expanded into the stream valleys of Honokōwai and to some extent Hanaka'ō'ō where heavy rainfall in the upper stream valleys made irrigation systems for wetland taro possible. While Hanaka'ō'ō may not have been heavily populated, the adjacent Honokōwai Ahupua'a featured a perennial stream with an average daily flow of over 2,500,000 gallons (Stearns 1942). As such, the well watered stream valleys would have provided a reliable water source for successful agricultural pursuits from the headwaters to the seaward mouth of the stream as evidenced by documentation of pre-contact and early post-contact period *lo'i kalo*

(irrigated terraces for wetland taro) within Honokōwai Valley between 800 and 1,000 feet in elevation (Davis 1977; Emory and Hommon 1972; E. M. Fredericksen and Fredericksen 2003; Jensen 1991; Kaschko 1974).

Based on available archaeological evidence and interpretations, extensive hotel and resort development notwithstanding, the following site type expectability is proposed for the coastal region of Hanaka'ō'ō. Temporary habitation related to marine exploitation and/or agriculture pursuits (Paraso and Dega 2006; Rosendahl 1987), smaller ceremonial features (Hill, Arnold et al. 2007; Jensen 1990), and other activity areas (Neller 1982) may have dotted the coastline. Within the current project area, and given the built environment, such features would be represented by sub-surface cultural material deposits. Traditional knowledge, historic era observation, and archaeological studies have also demonstrated that traditional Hawaiian burial practices were carried out in the near shore sand dunes of the Kā'anapali Shoreline (Ashdown 1947; Dobyns and Allen-Wheeler 1982; Fornander 1919d, e; Kalakaua 1888; Neller 1982; Perzinski and Dega 2009; Rotunno-Hazuka 2009a, b) and therefore, human interments may be present within sandy deposits underlying the current project area.

Section 4 Results of Fieldwork

An archaeological investigation of three areas of direct effect within the overall project (APE), comprised of a total of 1.34 acres (see also Section 2 Methods), was conducted over a period of 8 days, March 13th through 21st, 2013, by archaeologists Jonas Madeus, B.A. and Katie Sprouse, B.A. under the direct supervision of Tanya L. Lee-Greig, M.A. and Hallett H. Hammatt, Ph.D. A total of 16 person days were required to complete the fieldwork for this study. For ease of discussion, the results of this archaeological investigation are divided into three distinct areas representing each area of direct effect: 1) Tropical Restaurant & Ono Bar Expansion, 2) Ballroom Expansion, and 3) Parking Structure (Figure 13, see also Figure 4).

4.1 Tropica Restaurant and Ono Bar Expansion

The Tropica Restaurant and Ono Bar is located on the ground level of the Beach Tower building. Improvement plans include both interior renovation, as well as, expansion toward the pool deck area to the south and outdoor seating toward the west (see also Figure 4) which would require the demolition of the rock mound landscaping feature that camouflages two hotel operations structures in order to make way for the construction of decking or landscaping as appropriate (see project description in Section 1.1 Project Background). An inspection of the this expansion area was conducted March 18, 2013. Results of the inspection shows that this area has been heavily modified to accommodate a hardscape dining area with a water feature and beach views along the western side (Figure 14) and hard and landscaped area to the south (Figure 15).

The mound located at southwestern corner of the restaurant and bar is landscaped with royal palms, coconut trees, flowering hibiscus and other shrubs and grasses and accommodates hardscape features such as low stone walls, paved pathways, ground lighting, and stairs (Figure 16). While closer examination of exposed sediment shows a sand-loamy sand matrix (Figure 17), examination of historic aerial photos indicates that the mound which covers the hotel operations structures was likely constructed during the renovation and improvement project carried out in the late 1980's (Figure 18 and Figure 19).

As can be expected, no surface indications of significant historic properties were identified during the pedestrian inspection. Additionally, due to extensive built environment of the restaurant and bar expansion area (see Figure 14 through Figure 16) and high density visitor foot traffic, neither GPR survey nor subsurface testing of the areas of potential ground disturbance was feasible during the course of this study.

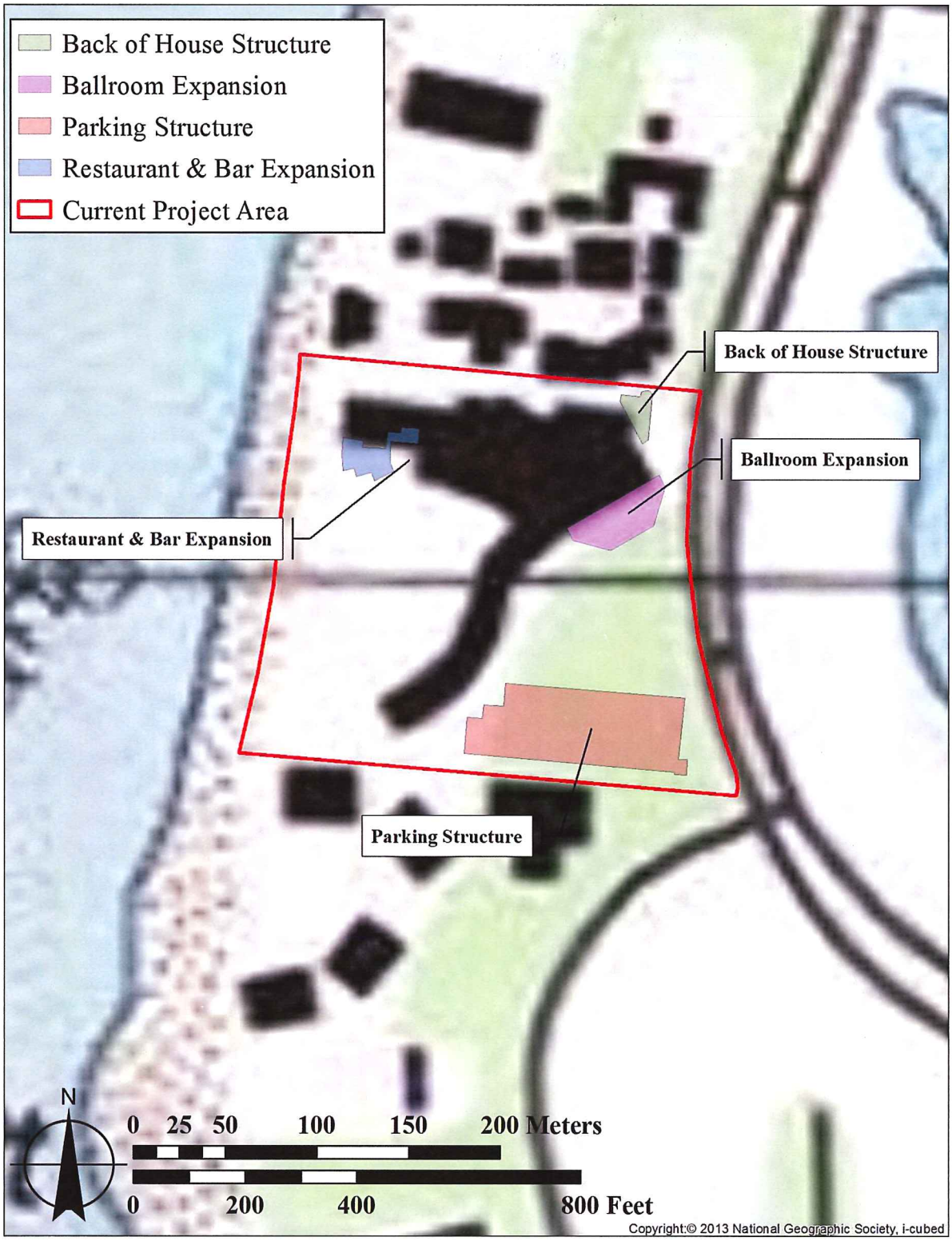


Figure 13. A portion of the 1992 Lāhainā 7.5-minute U.S.G.S. topographic quadrangle, showing areas of direct impact and overall project area outlined in red

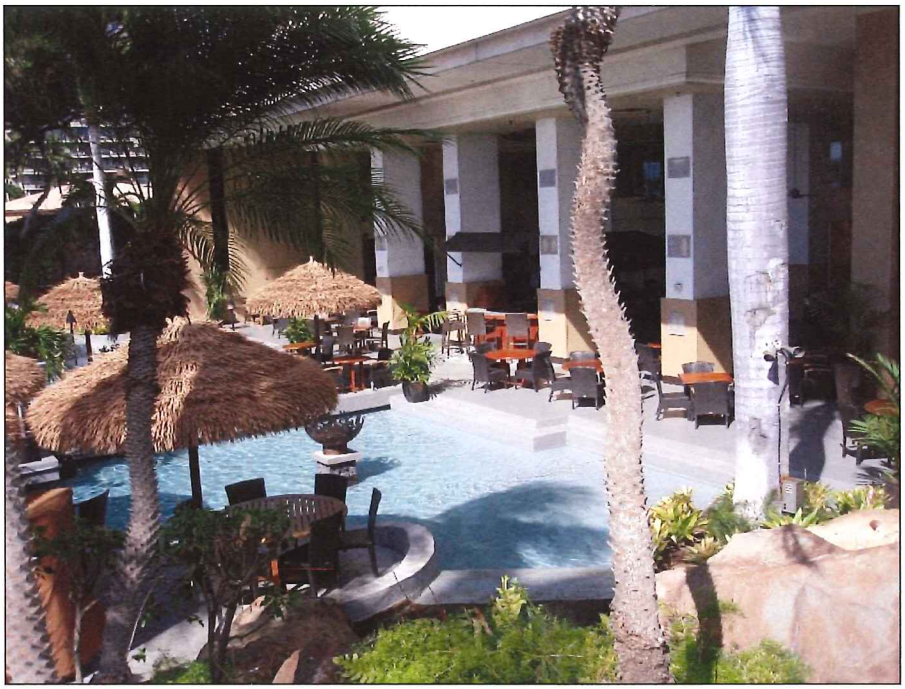


Figure 14. Tropical Restaurant outdoor dining area, view to north.

Figure 15. Ono Bar outdoor dining area, view to north-northeast.

Figure 16. Landscaped mound indicated for removal during renovation and expansion of the restaurant and bar, view to southeast.

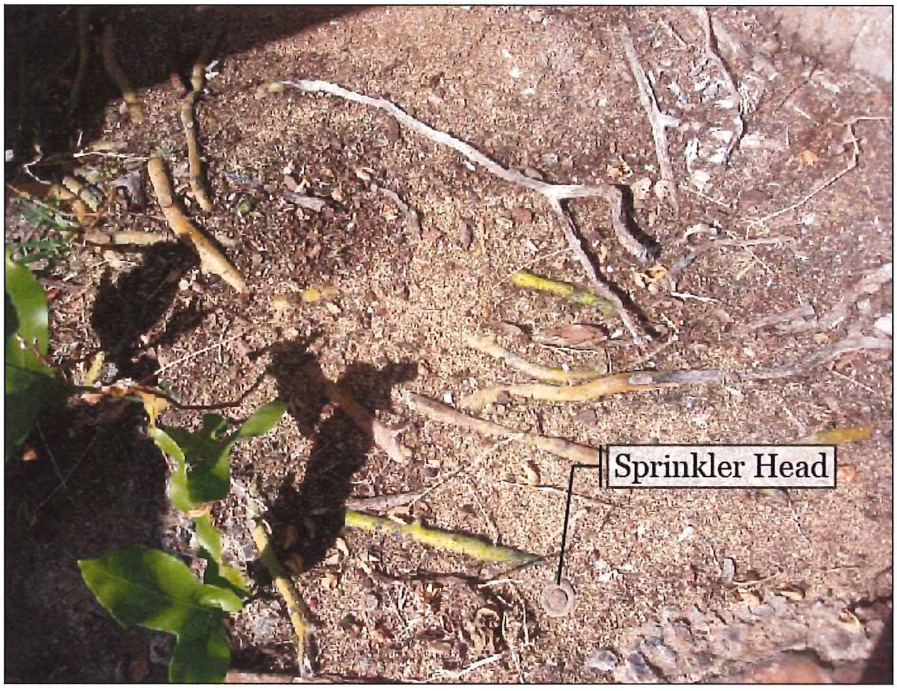


Figure 17. Exposed sediments within the mound along the southwest corner of the restaurant and bar.

Figure 18. SOEST (1975) aerial photo showing approximate location of the restaurant and bar expansion area (shaded in blue) in relation to the rounds of the Westin Maui Resort & Spa in1975.

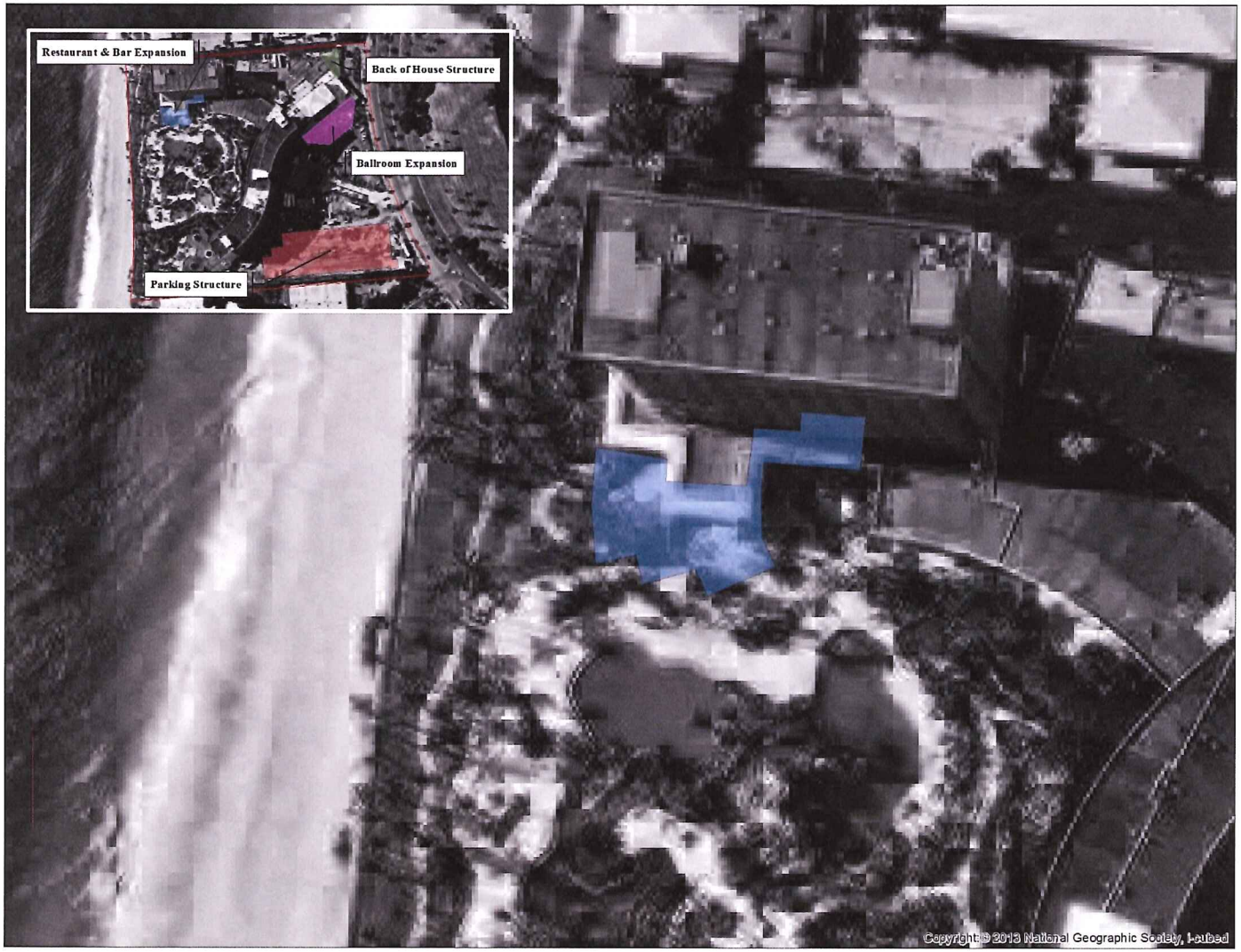


Figure 19. SOEST (1987) aerial photo showing approximate location of the restaurant and bar expansion area (shaded in blue) in relation to the rounds of the Westin Maui Resort & Spa in 1987.

4.2 Ground Penetrating Radar (GPR) and Subsurface Testing Results

Given the recent history of development in the current project area, and as the built environment of the area slated for expansion of the ballroom and construction of a new multi-level parking area consisted of a fairly level asphalt parking lot, a remote sensing survey of the lot was carried out through the use of ground penetrating radar as a means to guide the subsurface testing program for the current archaeological study (see Section 2 Methods). The GPR fieldwork was conducted on December 2nd and 3rd , 2012 by GPR Specialist Jon Tulchin, B.A. of CSH O'ahu Office and Archaeologist Jonas Madeus, B.A. of CSH Maui Office (see also Section 2.1.1 for detailed methods). A total of 14 grids were surveyed, all of which focused on accessible areas within the current parking lot (Figure 20 through Figure 22).

The results of the GPR survey indicated the potential presence of subsurface objects and/or disturbances (e.g. utility lines, backfilled excavations, tree roots, etc.) throughout the area as indicated by concentrations of high reflectivity in GPR slice maps and profile (see also Appendix B GPR Survey). This GPR data was then utilized in the development of the subsurface testing sampling strategy. Trenches were excavated in areas determined by GPR to contain homogeneous deposits which were more likely to represent undisturbed/naturally deposited sediments, and therefore have a higher probability of containing traditional Hawaiian cultural deposits. These homogeneous deposits are represented in GPR data as areas of low reflectivity, indicated as gray areas Figure 23.

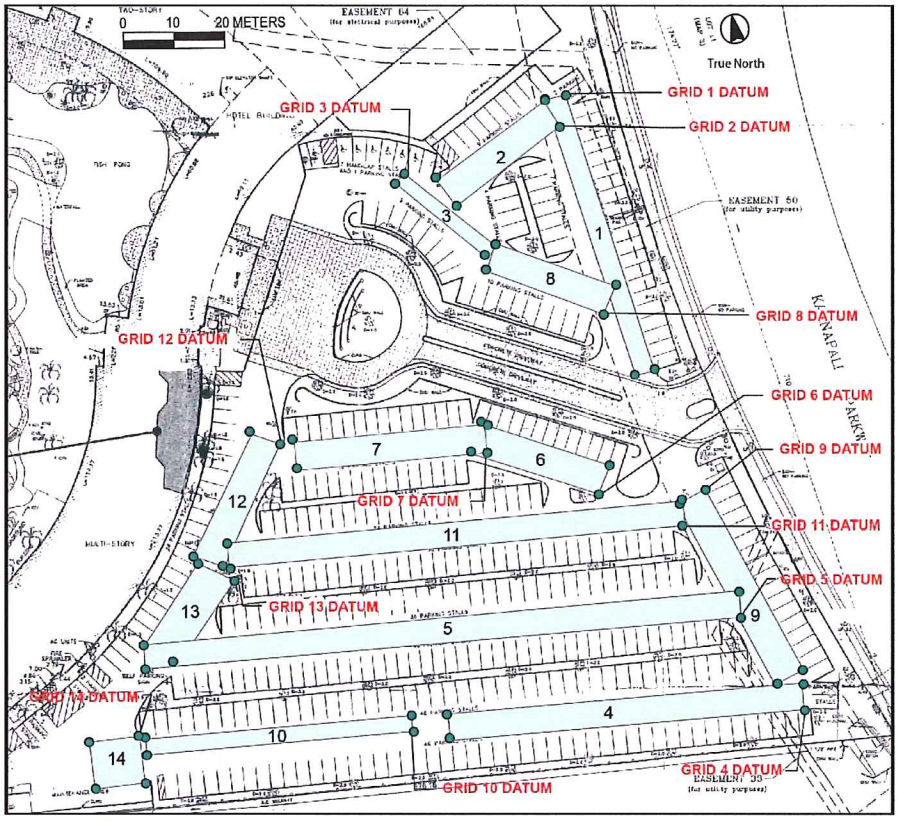


Figure 20. 1998 Westin Maui Resort & Spa Site Plan showing locations of GPR survey grids.

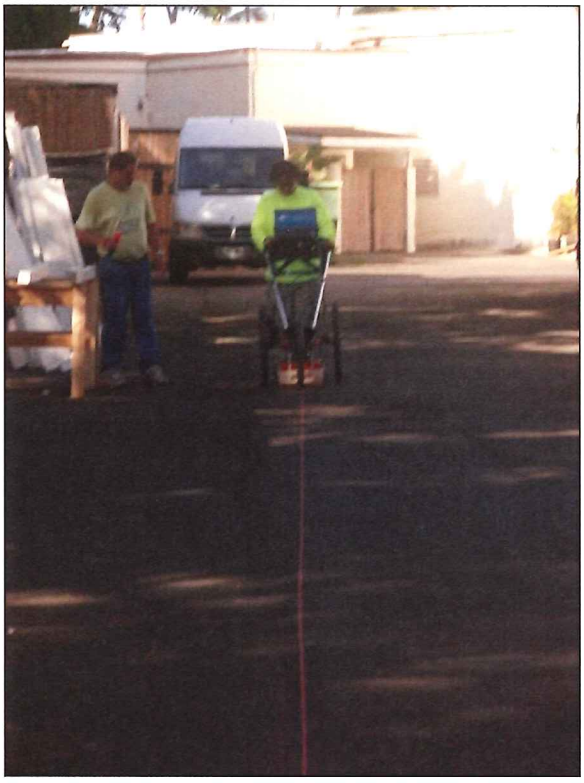


Figure 21. GPR survey of Grid 10, view to west.

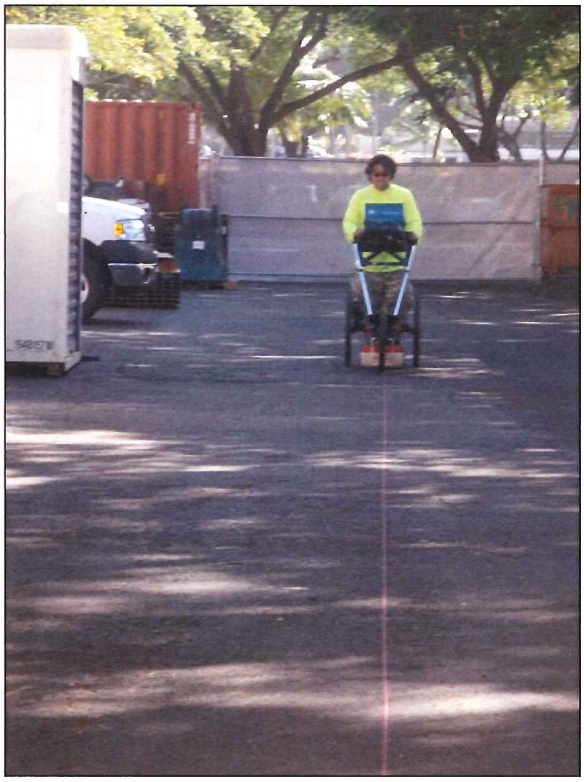


Figure 22. GPR survey of Grid 10, view to east.

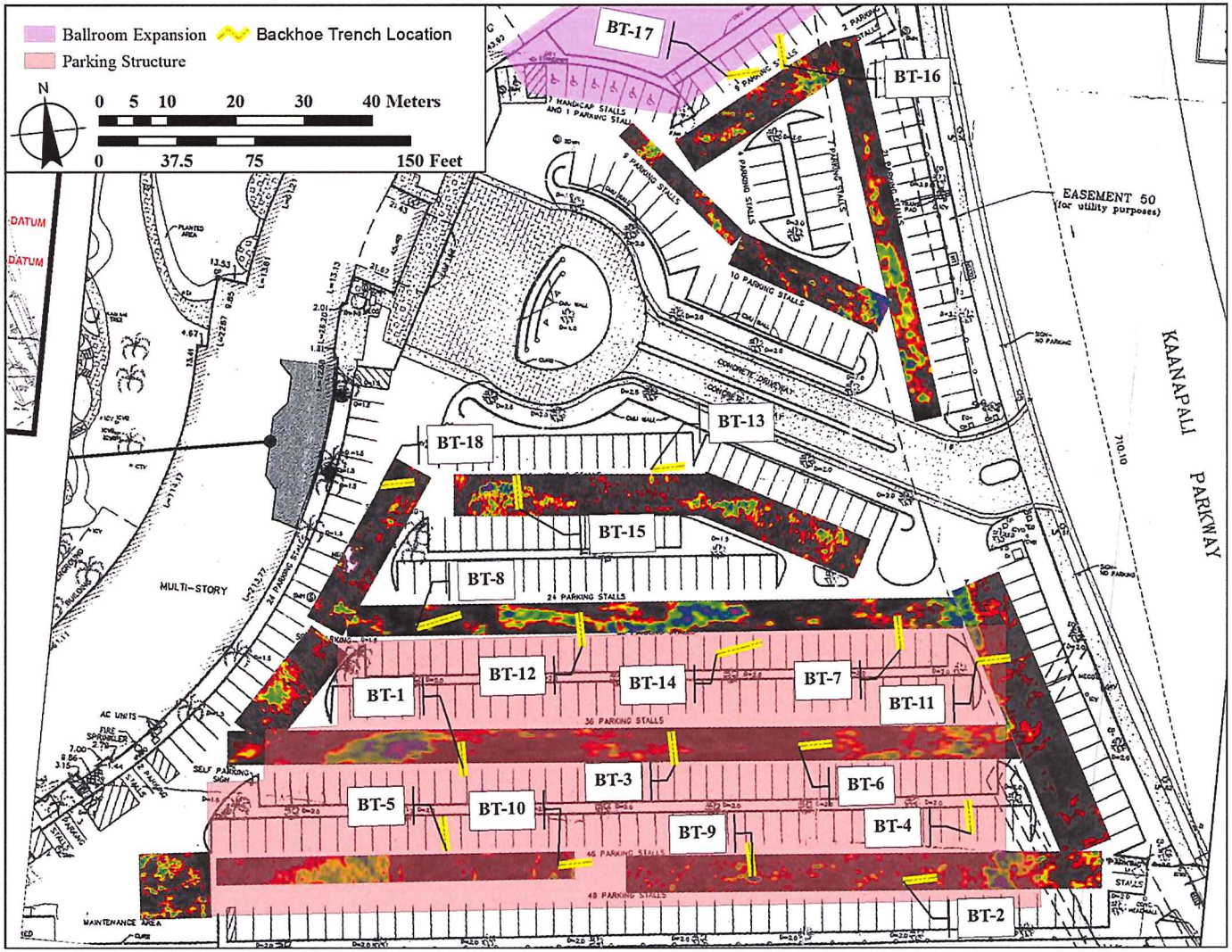


Figure 23. 1998 Westin Maui Resort & Spa Site Plan showing GPR time slice overlay at the 75cmbs interval in relation to backhoe test locations (BTs), red to lavender coloration indicates low to high reflectivity respectively (note that BT-13, -15, and -18 are not located within, or directly adjacent to, the proposed areas of direct effect and therefore not investigated during the current study).

4.3 Ballroom Expansion Area

The proposed expansion of the ballroom, located on the northeastern side of the property, would consist of extending into and enclosing the outdoor area used for pre-function gatherings (see also Figure 4). Like the Tropical Restaurant and Ono Bar Expansion area, the Ballroom Expansion Area posed significant challenges for carrying out subsurface testing as the entire pre-function area was enclosed by a CMU wall with narrow entry ways (Figure 24 and Figure 25). The height of the CMU wall, in addition to the narrow entry ways precluded the ability to conduct mechanical subsurface testing in the immediate area of direct effect. In order to gain some understanding of the subsurface conditions in the area of direct effect, it was possible to test in the parking area directly adjacent to and south of the enclosing CMU wall.

Figure 24. Ballroom Expansion Area, view to east-northeast.

Two backhoe trenches (BT-16 and BT-17) were excavated on the southern side of the CMU wall enclosing the proposed Ballroom Expansion Area and situated as close to the area of direct effect as possible while attempting to avoid encountering existing utility and electrical lines (Figure 23). As can be expected in the upper layers of the trench, the asphalt layer and underlying gravel base course thickness was fairly consistent. The asphalt layer (Stratum Ia) measured 5 cm thick while the gravel base course (Stratum Ib) ranged from 18-22 cm thick in this area. A fill sequence, consisting of four to five layers of gravelly silt loams and silty clay loams, as well as, a mixed crushed cinder layer identified between 63 and 90 cmbs followed the upper macadam layers to a depth range of 83 to 130 cmbs. Layers that appeared to consist of intact original sediments deposits were encountered at 83 cmbs in BT-16 and 130 cmbs in BT-17. The following sediment descriptions will discuss the stratigraphy of the underlying deposit in the area directly adjacent to the Ballroom Expansion Area.

Figure 25. Ballroom Expansion Area, view to south-southwest.

4.3.1 Backhoe Trench 16 (BT-16)

Backhoe Trench 16 (BT-16) measured approximately 0.8m wide by 5m long and was oriented in a north-south direction (Figure 26). A total of eight stratigraphic layers consisting of macadam layers (Strata Ia and Ib) overlying an imported fill sequence (Strata Ic through Ig) and followed by an apparent alluvial deposit (Stratum II) representing the original soils were observed within the soil profile (see soil description below). Of particular interest is the presence of a highly compacted crushed cinder layer (Stratum Ig), approximately 25 cm thick and identified between 65 to 70 cmbs. As the excavation of this layer was difficult due to the compact nature of the cinder, it seems probable that this layer had been previously compacted using a roller. No historically significant subsurface features or cultural material deposits were observed. Excavation of this trench was terminated at maximum depth of 167 cmbs.

Figure 26. BT-16, overall view to north.

Soil Description for BT-16 (Figure 27 and Figure 28)

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-23 cmbs)	Gravel base course
Stratum Ic (23-30 cmbs)	Fill horizon; 10YR 3/2, very dark grayish brown silty loam; crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; no roots; compacted. No cultural material or features were observed.
Stratum Id (23-50 cmbs)	Fill horizon; 10YR 4/2, dark grayish brown gravelly sandy clay; moderate crumb structure; fine to medium size; hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots; compacted, No cultural material or features were observed.

Stratum Ie (47-60 cmbs) Fill horizon; 5YR 4/1, dark gray gravelly silt; strong, crumb structure; medium to coarse size; friable moist consistency; non plastic; weak cementation; terrigenous origin; no roots; compacted. No cultural material or features were observed.

Stratum If (50-70 cmbs) Fill horizon; 10YR 2/2, very dark brown gravelly sandy clay; strong, crumb structure; fine to medium size; friable moist consistency; slightly plastic; terrigenous origin; clear lower boundary; smooth topography; no roots; compacted. No cultural material or features were observed.

Stratum Ig (65-90 cmbs) Fill horizon; 2.5YR 3/4, dark reddish brown crushed cinder/silt; strong crumb structure; coarse to very coarse size; very hard dry consistency; non plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; no roots; No cultural material or features were observed.

Stratum II(83-167cmbs) B Horizon; 7.5YR 3/1 very dark gray stony gravelly silty clay; moderate crumb structure; fine size; friable moist consistency; slightly plastic; weak cementation; mixed origin; lower boundary not visible; no roots; 35-45% boulder inclusions This stratum is a possible alluvial deposit. No cultural material or features were observed.

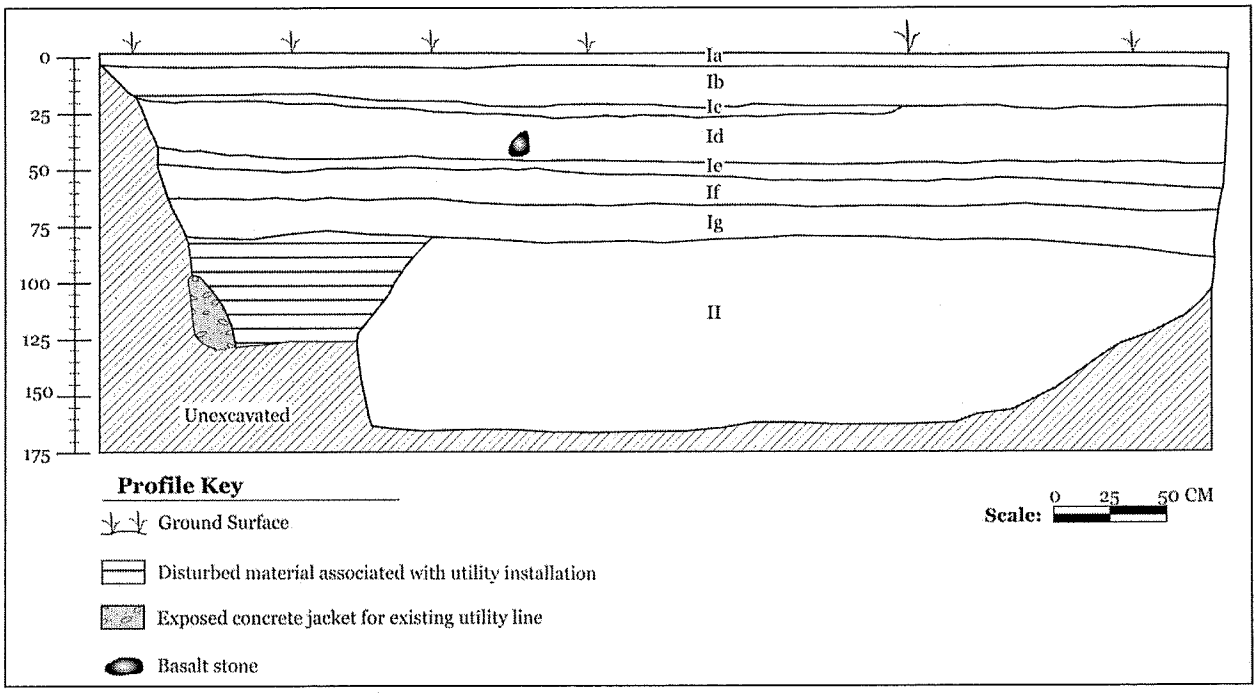


Figure 27. BT-16 east wall soil profile.

Figure 28. Representative section of BT-16, east wall profile.

4.3.2 Backhoe Trench 17 (BT-17)

Backhoe Trench 17 (BT-17) measured approximately 0.8m wide by 5m long and was generally oriented in an east-west direction (Figure 29). A total of nine stratigraphic layers (see soil description below) consisting of macadam layers (Strata Ia and Ib) overlying an imported fill sequence (Strata Ic through If) and followed by the apparent alluvial deposit (Stratum II) observed within BT-16. Two distinctive strata, consisting of black sandy loam (Stratum III) and light yellowish brown sand (Stratum IV) was observed below the alluvial deposit. Stratum III sediments likely represent the transition from alluvium to sand as the sediment content is mixed while Stratum IV likely represents the substratum that is typical of a representative profile for EaA soils as described by Foote and others (1972:29). An electrical line was encountered in the eastern portion BT-17 at approximately 122 cmbs with a discrete sediment change consisting loamy sand underlying the base course layer (Stratum 1b) and representing previous utility trench excavation and backfill at this location (Figure 30 and Figure 31). Like BT-16, a crushed cinder layer, approximately 25 cm thick was observed and recorded as Stratum Ie in this excavation trench between 55 to 63 cmbs. No historically significant subsurface features or cultural material deposits were observed. Excavation of this trench was terminated at maximum depth of 170 cmbs.

Figure 29. BT-17, overall view to east.

Figure 30. Exposed electrical line at eastern terminus of BT-17, note soil difference surrounding the line.

Soil Description for BT-17 (Figure 31 and Figure 32)

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-27 cmbs)	Gravel base course
Stratum Ic (25-65 cmbs)	Fill horizon; 5YR 3/1, very dark gray gravelly sandy clay; strong blocky structure; fine to medium size; very hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; common fine to medium size roots. This stratum contains modern trash. No significant cultural material or features were observed.
Stratum Id (37-63 cmbs)	Fill horizon; 10 YR 2/2, very dark brown gravelly sandy clay; strong crumb structure; medium size; very hard dry consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; broken/discontinuous topography; common medium size roots. This stratum contains modern trash. No cultural material or features were observed.
Stratum Ie (55-80 cmbs)	Fill horizon; 2.5YR 3/3, dark reddish brown crushed cinder gravelly silt; strong crumb structure; medium to coarse size; firm moist consistency; non plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; no roots; 80-90% gravel and cobble inclusions. No cultural material or features were observed.
Stratum If (75-107 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown stony sandy clay; moderate to strong crumb structure; fine to medium size; friable moist consistency; plastic; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.
Stratum II(130-155 cmbs)	B horizon; 7.5YR 3/1, very dark gray silty clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; irregular topography; no roots. This stratum is likely an alluvial deposit. No cultural material or features were observed.
Stratum III(157-170cmbs)	C Horizon; 5YR 2.5/1 black sandy loam; weak granular structure; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; abrupt lower boundary; broken/discontinuous topography; no roots. This stratum is semi compacted with organic staining. No cultural material or features were observed.

Stratum IV(170 cmbs) C Horizon; 10YR 6/4 light yellowish brown sand; weak structureless single grain fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. This stratum was observed at the bottom of trench but was not excavated. No cultural material or features were observed.

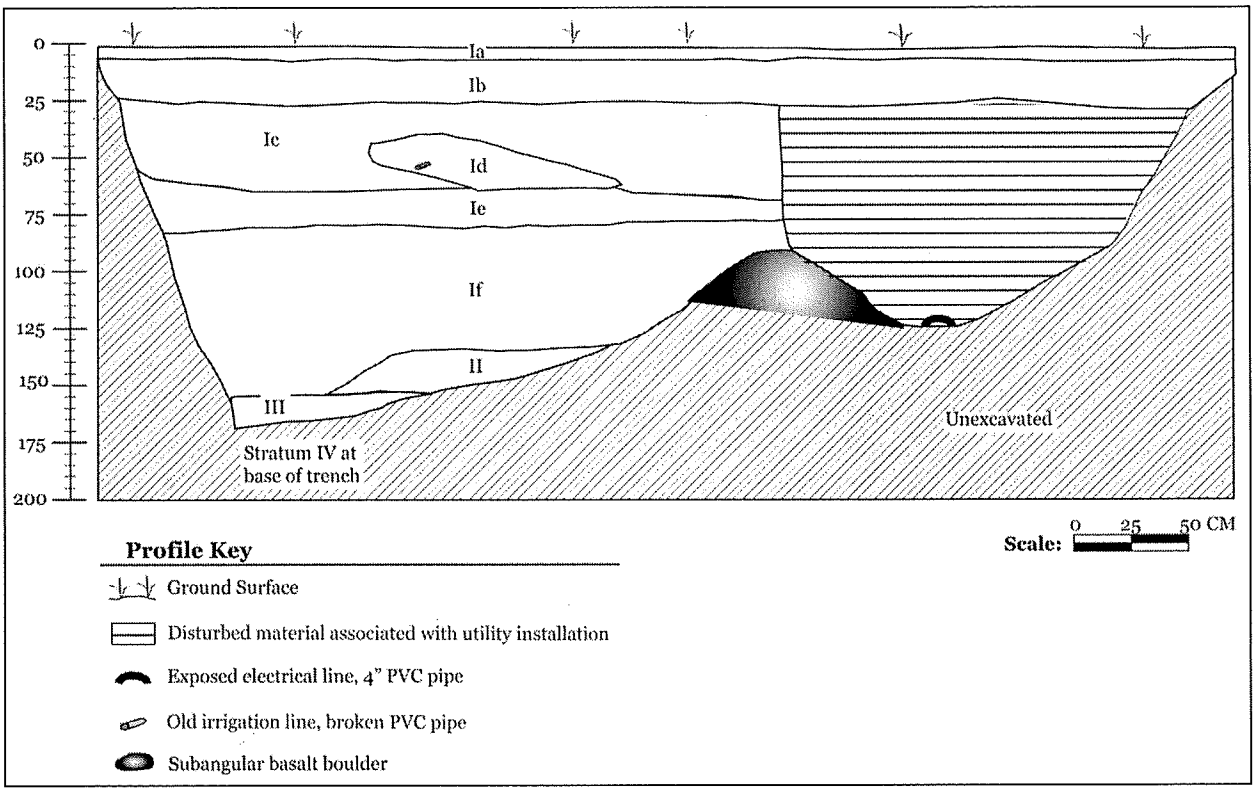


Figure 31. Trench BT-17 north wall soil profile

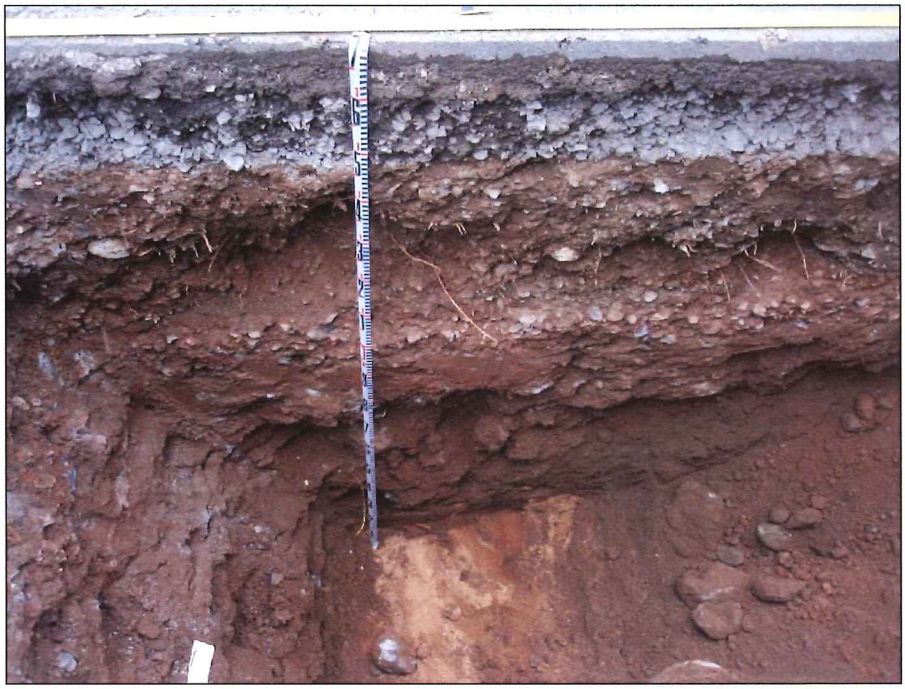


Figure 32. Western section of BT-17, north wall, showing complete stratigraphic profile.

4.4 New Back of the House Structure

As a part of the overall master plan improvements, a new back of the house structure is proposed for an area located directly adjacent to the current convention center and in the north-eastern corner of the project parcel (see also Figure 4). This structure will consist of a single story and cover a total area of approximately 3,070 sq. ft. A pedestrian inspection of this location was conducted on December 26, 2013. The results of the inspection shows that this area has been heavily modified to accommodate the laundry services for hotel operations (Figure 33 through Figure 35). This modifications include the placement of a concrete slab to support a shaded area constructed of metal beams supporting a roof structure of corrugated aluminum sheeting, as well as the presence of industrial storage containers and open sheds. A centrally located drainage grate and the existence of a water meter covers in the area (Figure 35 and Figure 36) indicates a likely presence of an extensive subsurface drainage and water system to support the laundry services of the hotel. These surface findings led to a decision to not test the area due to the high probability of encountering and disrupting waterlines and other electrical utilities.

Figure 33. Overview, new back of the house structure location, view to south.

Figure 34. Overview, new back of the house structure location, view to west.

Figure 35. Overview, new back of the house structure location, view to northwest.

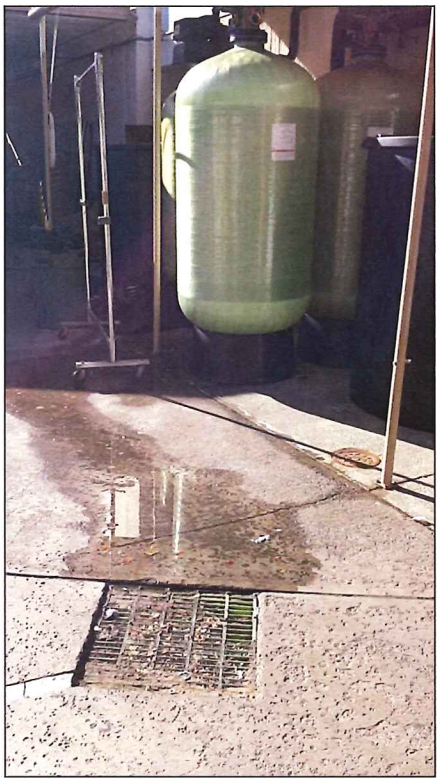


Figure 36. Close up of drainage grate and a water meter cover centrally located at the new back of the house structure location.

4.5 Proposed Parking Structure Area

The new multi-level parking structure is proposed for construction in the southern portion of the self-parking area adjacent to the boundary with the Kā'anapali Ali'i Condominiums (see also Figure 4). The area of direct effect consists of a roughly paved parking lot with vegetated medians and hardscape structures consisting of curbing and lighting. A total of 13 backhoe trenches (BTs -1 through -12 and BT-14) were excavated within and directly adjacent to the location of the proposed parking structure (Figure 23). Like BTs-16 and -17, the trenches excavated in this area included two upper macadam layers (Strata Ia and Ib) consisting of an asphalt layer measuring 5 cm thick followed by a gravel base course that ranged in thickness from 15 to 22 cm. A fill sequence, consisting of four to five distinct layers of sandy clay loam, sandy clay, clay, and silt. The cinder layer observed in BTs-16 and -17 adjacent to Ballroom Expansion Area was only observed in BTs-1, -3, and-12 with the upper boundary encountered at a depth range of 30 to 63 cmbs. Overall, the fill in this area ranged in depth from 90 to 160 cmbs indicating a rather extensive amount of previous disturbance. The original substratum, consisting of a single grain sandy loam/sandy clay matrix, was recorded as Strata II through VII with excavations reaching a maximum depth of 190 cmbs in BT-12. The following descriptions are representative of the subsurface conditions in the area proposed for the construction of the new parking structure and discusses the sediment stratigraphy observed in the backhoe trenches beginning the north section and moving from east to west (see Appendix A for complete soil descriptions of all exploratory trenches excavated during the study).

4.5.1 Backhoe Trench 8 (BT-8)

Backhoe Trench 8 (BT-8) measured approximately 0.8m wide by 5m long and was oriented in a general east-west direction (Figure 37). Six stratigraphic layers consisting of macadam layers (Strata Ia and Ib) overlying an imported fill sequence (Strata Ic through If) that extents to a depth of 170 cmbs (Figure 38; see detailed soil description below) were identified within this exploratory test trench. Strata Ic through Ie contain gravels, cobbles, and modern rubbish, while Stratum If contains very large basalt boulders, PVC pipe, and smooth wire. Original sediment deposits were not encountered within this trench which terminated at 170 cmbs.

Figure 37. BT-8, overall view to east.

Soil Description for BT-8 (Figure 38 and Figure 39)

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-20 cmbs)	Gravel base course
Stratum Ic (20-58 cmbs)	Fill horizon; 10YR 3/2, very dark grayish brown sandy clay; strong blocky structure; medium size; moist friable consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; many medium roots. No cultural material or features were observed.
Stratum Id (45-73 cmbs)	Fill horizon; 10YR 3/1, very dark gray sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; broken/discontinuous topography; no roots; gravel, cobble and modern trash inclusions. No significant cultural material or features were observed.
Stratum Ie (62-130 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; wavy topography; no roots; modern trash, 20-55% boulder, cobble and subangular pebble inclusions. No significant cultural material or features were observed.

Stratum If (84-170 cmbs) Fill horizon; 5YR 3/1, very dark gray sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; mixed origin; lower boundary not visible; no roots; subangular boulder, cobble and modern trash inclusions. No significant cultural material or features were observed.

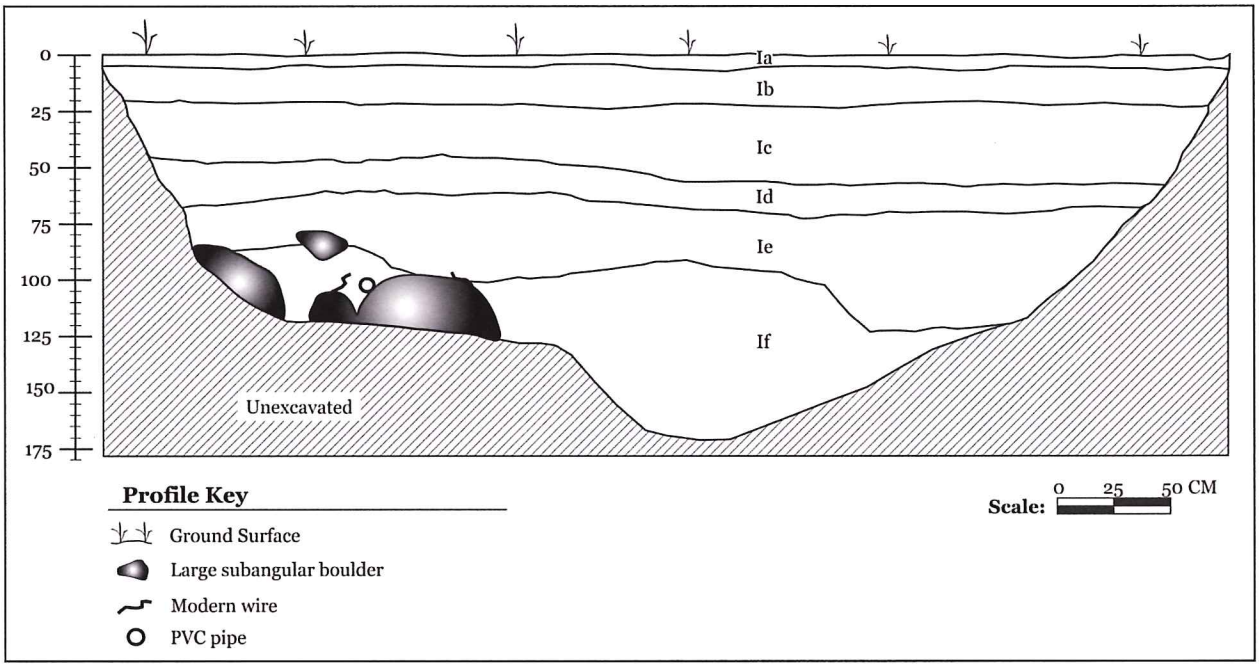


Figure 38. BT-8, north wall soil profile.

Figure 39. BT-8, representative section of the north wall profile, view to north.

4.5.2 Backhoe Trench 11 (BT-11)

Backhoe Trench 11 (BT-11) measured approximately 0.8m wide by 5m long and was oriented in a general east-west direction (Figure 40). A total of eight stratigraphic layers were observed in the profile of this exploratory test trench (see detailed soil description below). The upper macadam strata consisted of a 5 cm to 8 cm thick asphalt layer (Stratum Ia) overlying a gravel base course (Stratum Ib) which ranged in thickness from 25 cm to 27 cm. Multiple fill episodes were positively identified below the macadam (Strata Ic through Ie) to a maximum depth of 90cmbs, and are likely associated with the increased elevation of the parking lot in relation to the elevation of Kā'anapali Parkway to the east. These fill layers consisted of dark reddish brown and very dark brown sandy clay loams. An old metal irrigation valve and broken pieces of pipe and wire were observed within the fill at 40 cmbs. Stratum II appears to be an alluvial deposit, that has undergone little to no pedogenesis or soil development, with some intermixing with the underlying sandy substratum (Stratum IV). This layer is characterized by mottled sandy loam with subrounded and subangular cobbles and small boulders throughout. What appears to be an old drainage, measuring 105 cm wide by 70 cm deep, cuts into Stratum II and Stratum III in the north wall at the approximate center of the trench (Figure 41). Based on the position of the apparent drainage cut in the north wall in relation to the corresponding cut in the south wall, it appears that the drainage was oriented in a northwest-southeast direction. Stratum IV consists of pale brown sand with naturally occurring corals, calcium carbonate nodule and shell fragments mixed in.

Figure 40. BT-1, overall view to east-northeast.

Soil Description for BT-11 (Figure 41 and Figure 42)

Stratum Ia (0-8 cmbs)	Asphalt
Stratum Ib (5-27 cmbs)	Gravel base course
Stratum Ic (20-40cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay loam; friable, moist consistency; slightly plastic; mixed origin; clear lower boundary; broken/discontinuous topography. Irrigation pipe recorded within the matrix. No significant cultural material or features were observed.
Stratum Id (20-40 cmbs)	Fill horizon; 10YR 2/2, very dark brown clay loam; moderate to strong crumb structure; fine to medium size; friable consistency; slightly plastic; mixed origin; abrupt lower boundary; broken/discontinuous topography; common, no roots. No cultural material or features were observed.
Stratum Ie (30-128 cmbs)	Fill horizon; 5YR 2.5/2, dark reddish brown sandy clay loam; moderate crumb structure; medium size; friable moist consistency; slightly plastic; mixed origin; diffuse lower boundary; wavy topography; few, fine roots. No cultural material or features were observed.
Stratum II (35-133 cmbs)	C Horizon; 5YR 3/3, dark reddish brown sandy loam; moderate crumb structure; medium size; friable moist consistency; non plastic; mixed origin; clear lower boundary; broken/discontinuous topography; no roots. No cultural material or features were observed.
Stratum III (100-125 cmbs)	C Horizon; 5YR 3/3, dark reddish brown sandy clay; medium size; friable moist consistency; slightly plastic; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.
Stratum IV (100-157 cmbs)	C Horizon; 10YR 6/3 pale brown sand; structure less single grain; fine to medium size; friable moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; few, fine to medium roots. No cultural material or features were observed.

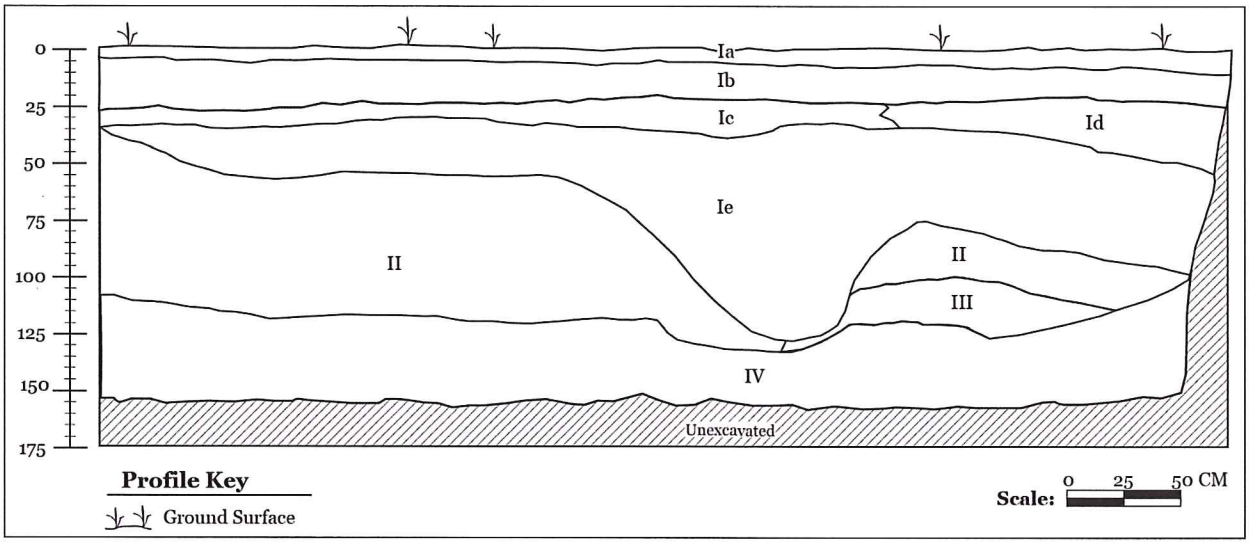


Figure 41. BT-11 north wall soil profile.

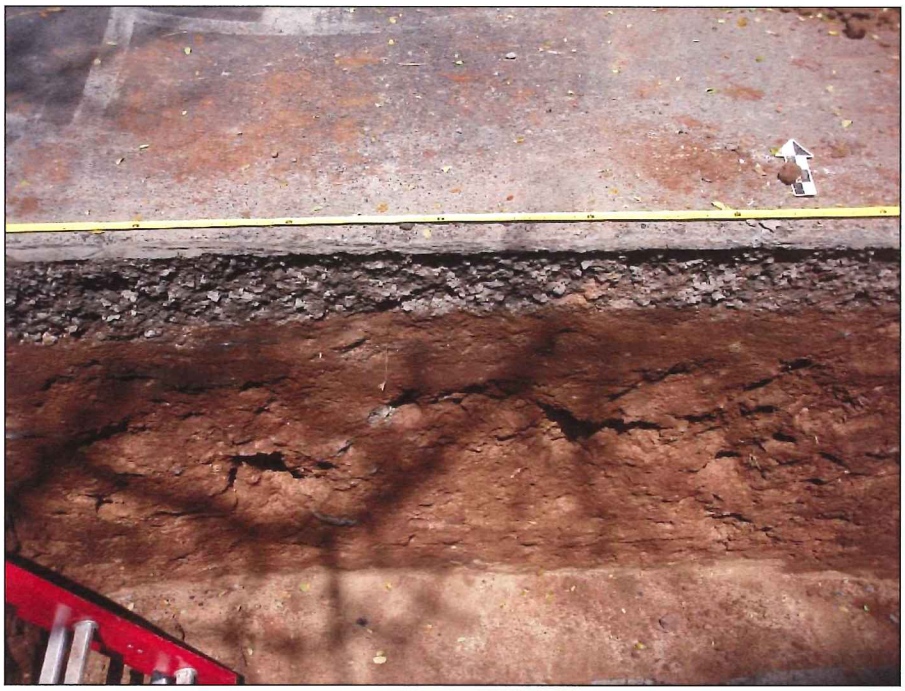


Figure 42. BT-11, representative section of the north wall profile, view to north.

4.5.3 Backhoe Trench 6 (BT-6)

Backhoe Trench 6 (BT-6) measured approximately 0.8m wide by 5m long and was oriented in a general east-west direction (Figure 43). A total of eight stratigraphic layers were observed in the profile of this exploratory test trench (see detailed soil description below). Consistent with other test trenches within the parking lot, the upper layers consisted of an asphalt layer (Stratum Ia) and an associated gravel base course layer (Stratum Ib). Four distinct fill layers (Strata Ic through If) underlie the macadam. Both Stratum Ic and Id consist of sandy clay layers of varying color, while

Stratum Ie is a sandy clay containing very large subrounded, rounded and subangular cobbles and boulder and Stratum If is a sand fill. Stratum II consists of a dark reddish brown sandy loam which appears to be a mix of alluvial sediments and the sandy substratum (Stratum III). While charcoal and burnt roots were observed in this layer, root size is more indicative of the larger *kiawe* trees that were present prior to resort development of this area (see also Section 3.1.5 Early to Mid-1900's and Figure 9).

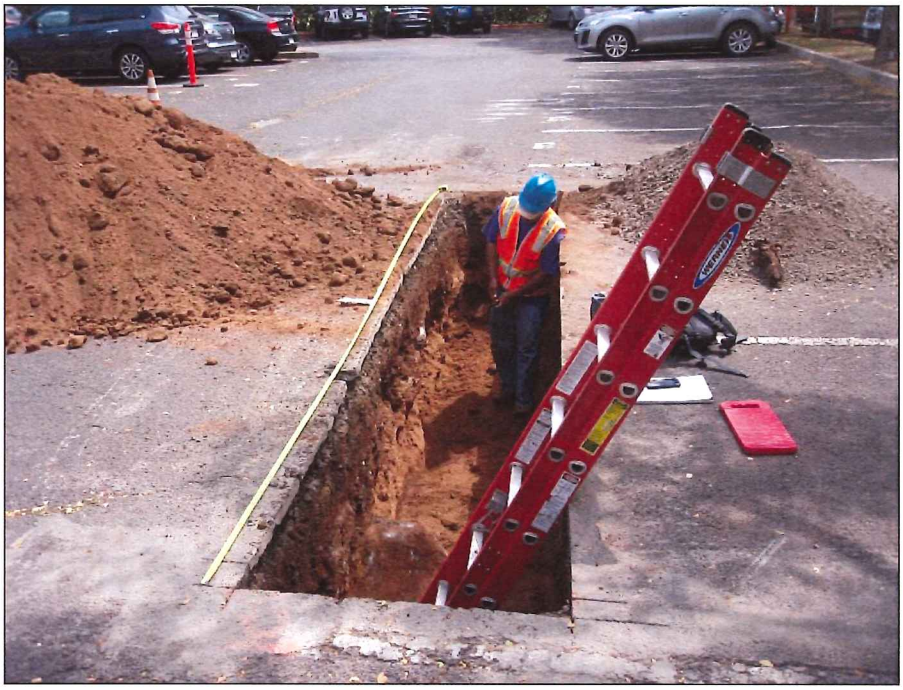


Figure 43. BT-6, overall view to east.

Soil Description for BT-6 (Figure 44 and Figure 45)

Stratum Ia (0-7 cmbs)	Asphalt
Stratum Ib (5-23 cmbs)	Gravel base course
Stratum Ic (20-25 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong columnar structure; medium size; hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots; compacted with 20% gravel inclusions. No cultural material or features were observed.
Stratum Id (25-37 cmbs)	Fill horizon; 5YR 2.5/1, black sandy clay; strong columnar structure; medium size; hard dry consistency; slightly plastic; mixed origin; clear lower boundary; smooth topography; no roots. This stratum was very compacted, mottled with red clay and grayish brown sand with sub-rounded/rounded boulder inclusions. No cultural material or features were observed.

Stratum Ie (35-80 cmbs) Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate crumb structure; medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; irregular topography; no roots; sub-rounded/rounded boulder inclusions. No cultural material or features were observed.

Stratum If (73-127 cmbs) Fill horizon; 5YR 5/3, dark reddish brown sandy clay; strong to moderate granular structure; medium size; loose moist consistency; non plastic; mixed origin; clear lower boundary; wavy topography; no roots. This stratum was a loose to semi compacted deposit with very large subangular boulders, rounded marine shell and coral inclusions. No cultural material or features were observed.

Stratum II (100-145 cmbs) B horizon; 5YR 3/3, dark reddish brown sandy loam; weak crumb structure; fine size; loose moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; wavy topography; no roots; charcoal (likely burned kiawe trees), rounded marine shell and coral inclusions. No cultural material or features were observed.

Stratum III (135-174cmbs) C Horizon; 10YR 6/4 light yellowish brown sand; weak structure less single grain; coarse size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

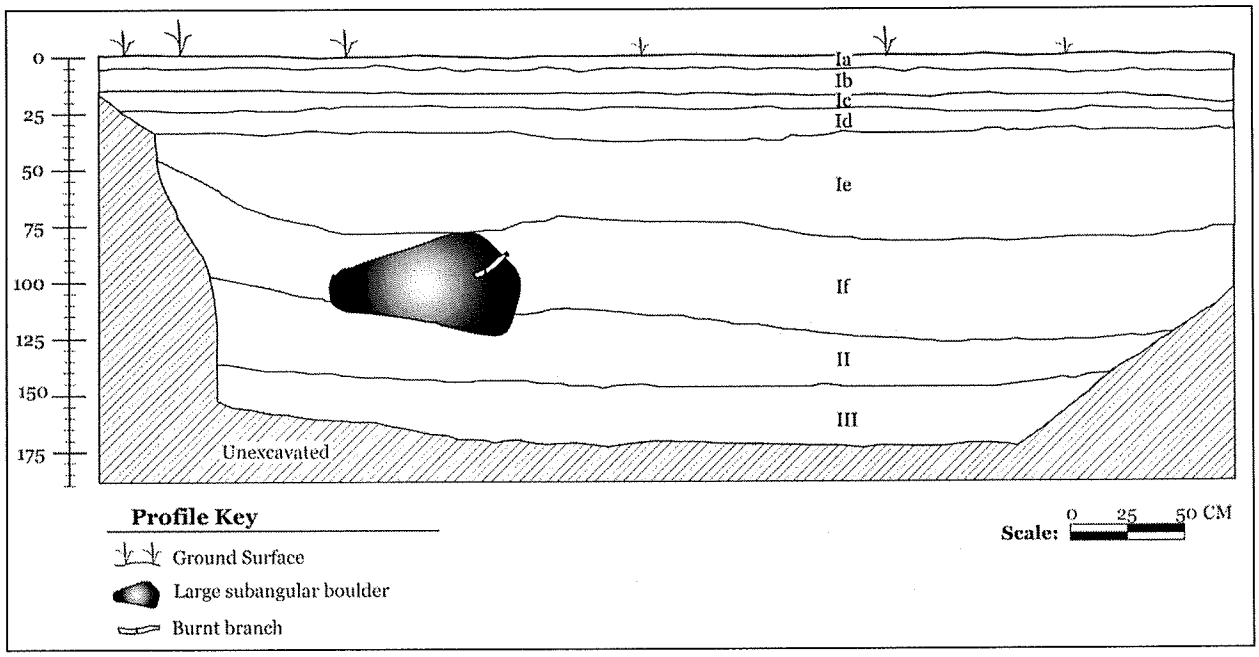


Figure 44. Trench BT-6 northwest wall soil profile.

Figure 45. Eastern section of BT-6, north wall.

4.5.4 Backhoe Trench I (BT-1)

Backhoe Trench 1 (BT-1) measured approximately 0.8m wide by 5m long and was oriented in a general north-south direction (Figure 46). A total of seven stratigraphic layers were observed in the profile of this exploratory test trench (see detailed soil description below) with the upper two layers consisting of the typical macadam layers identified throughout the parking lot area overlying an imported fill sequence. The fill layers, Strata Ic through If, extend to a maximum depth of 145cmbs (Figure 47). Between Stratum Ib and Ic is developing root mat, likely present due to the accumulation of moisture at the boundary of the two layers. Strata Ic and Id consists of sandy clay of varying color followed by a reddish brown silt layer (Stratum Ie) with a high cinder content similar to the cinder layers identified in BT-16 and BT-17 near the Ballroom Expansion area. Finally, Stratum If of the fill sequence consisted of a semi-compacted dark reddish brown sandy clay with 40-45% small to large boulders content. Underlying the fill sequence, at approximately 138 cmbs, is an apparent naturally occurring sand deposit documented as Stratum II. Excavation of this test trench terminated at 160 cmbs; no historically significant subsurface features or cultural material deposits were observed.

Figure 46. BT-1, overall view to southeast.

Soil Description for BT-1 (Figure 47 and Figure 48)

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-20 cmbs)	Gravel base course
Stratum Ic (20-34 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; with common roots. No cultural material or features were observed.
Stratum Id (27-43 cmbs)	Fill horizon; 5YR 3/1, very dark gray sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.
Stratum Ie (35-62 cmbs)	Fill horizon; 5YR 4/4, reddish brown silt; moderate to strong granular structure; coarse size; friable moist consistency; non plastic; weak cementation; terrigenous origin; abrupt lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum If (60-145 cmbs) Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate crumb structure; fine size; friable moist consistency; slightly plastic; weak cementation; mixe origin; abrupt lower boundary; smooth topography; no roots. No cultural material or features were observed. The semi compacted fill horizon contained 40-45% boulder, cobble and pebble inclusions.

Stratum II (135-160 cmbs) C horizon; 7.5YR 4/4, brown sandy loam; weak granular structure; fine size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

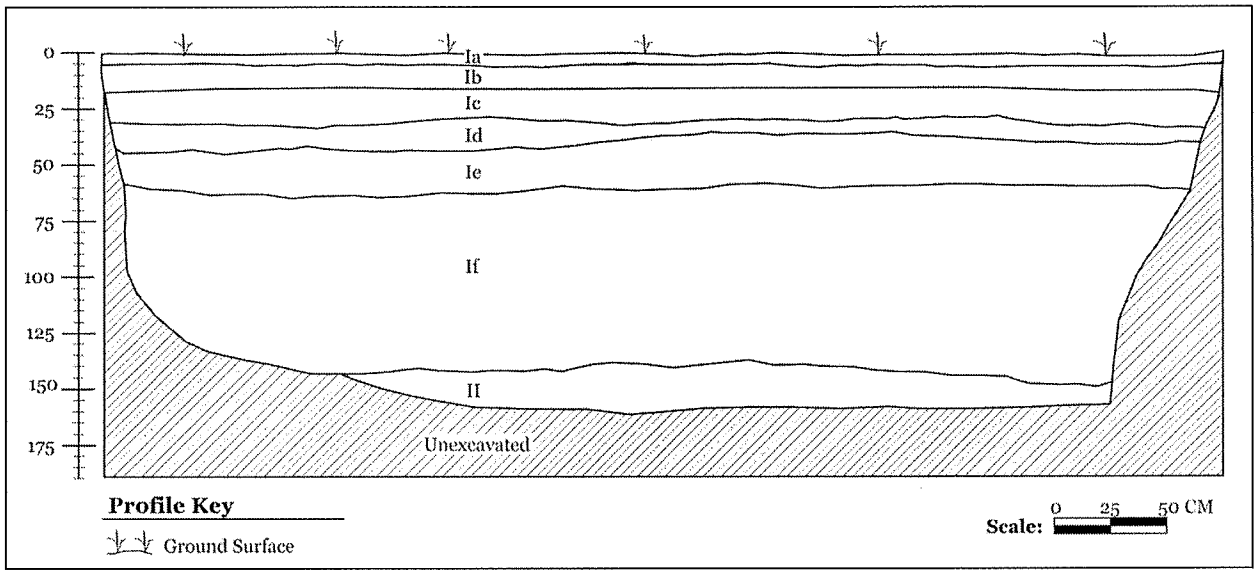


Figure 47. Trench BT-1 east wall soil profile

Figure 48. North section of BT-1, east wall profile, view to east.

4.5.5 Backhoe Trench 2 (BT-2)

Backhoe Trench 2 (BT-2) measured approximately 0.8m wide by 5m long and was oriented in a general east-west direction (Figure 49). A total of six stratigraphic layers were observed in the profile of this exploratory test trench (see detailed soil description below) with the upper two strata consisting of the typical macadam layers identified throughout the parking lot area overlying an imported fill sequence (Strata Ic and Ic) extending to a maximum depth of 130 cmbs and followed by the original alluvial deposit (Stratum II) and underlying sandy substratum (Stratum III) (Figure 50). Stratum Ic represents the backfill of a previously excavated pipeline trench. The pipeline itself was encountered at 75 cmbs within the Ic fill and encased in sand. It appears the same material that was used as fill below Stratum Ic was excavated and put back over the pipe as it is difficult to discern a difference in the Ic and Id materials. Stratum II is the original surface layer, similar in characteristics to Stratum II of BT-6 and consists of charcoal and burnt organic material (roots). Below the buried original surface is a naturally occurring coastal sand deposit (Stratum III) containing coral and shell fragments, naturally deposited. The burnt layer appears to have been related to a large area burn episode as it covers floor of trenches as evident at same depth in BT-4. No historically significant features or cultural material deposits were encountered in this test trench.

Figure 49. BT-2, overall view to northeast.

Soil Description for BT-2 (Figure 49 and Figure 50)

Stratum Ia (0-6 cmbs)	Asphalt
Stratum Ib (5-23 cmbs)	Gravel base course
Stratum Ic (17-95 cmbs)	Fill horizon; 10YR 7/3, very pale brown sand; moderate to strong grade structure less single grain; fine to medium size; hard dry consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; no roots. This fill was in a utility trench for a PVC pipe containing electrical wires.. No cultural material or features were observed.
Stratum Id (17-130 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; wavy topography; no roots. This fill contained rebar, and metal. No significant cultural material or features were observed.
Stratum III(110-155 cmbs)	A horizon; 5YR 3/1, very dark gray sandy silt; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; wavy topography; no roots. Charcoal, although present, was determined to be non cultural originating from burnt branches and trees. No cultural material or features were observed.

Stratum IV(145-170 cmbs) C horizon; 7.5YR 5/4, brown sand; structureless single grain; moderate grade; coarse size; very friable moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

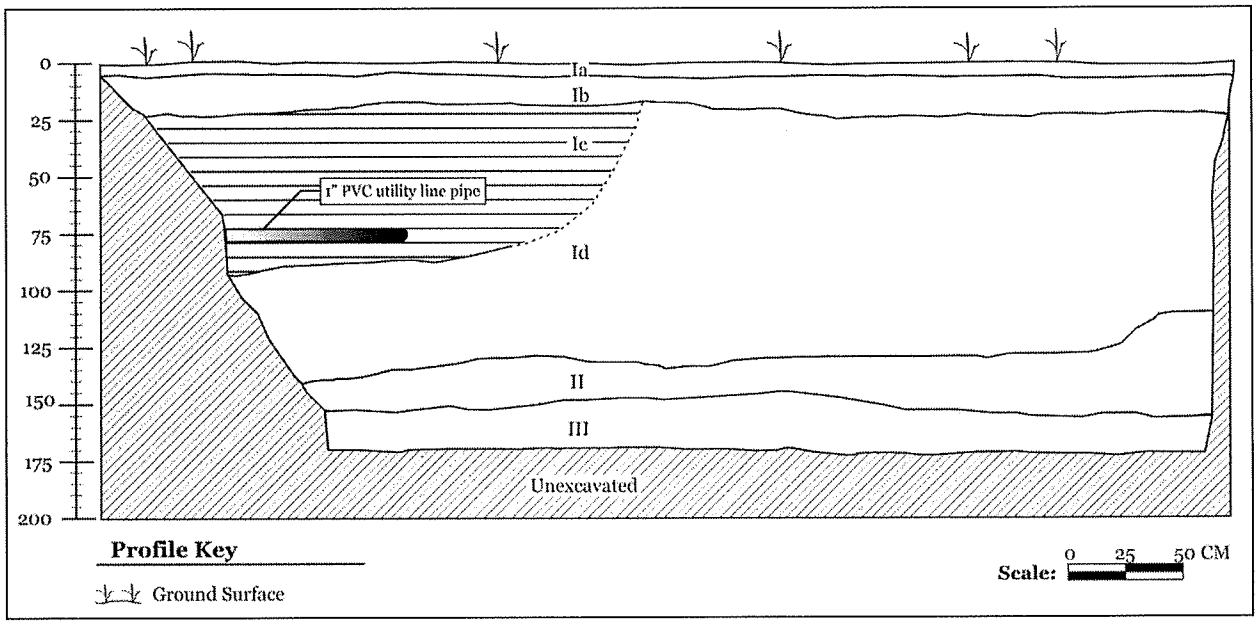


Figure 50. BT-2 north wall soil profile.

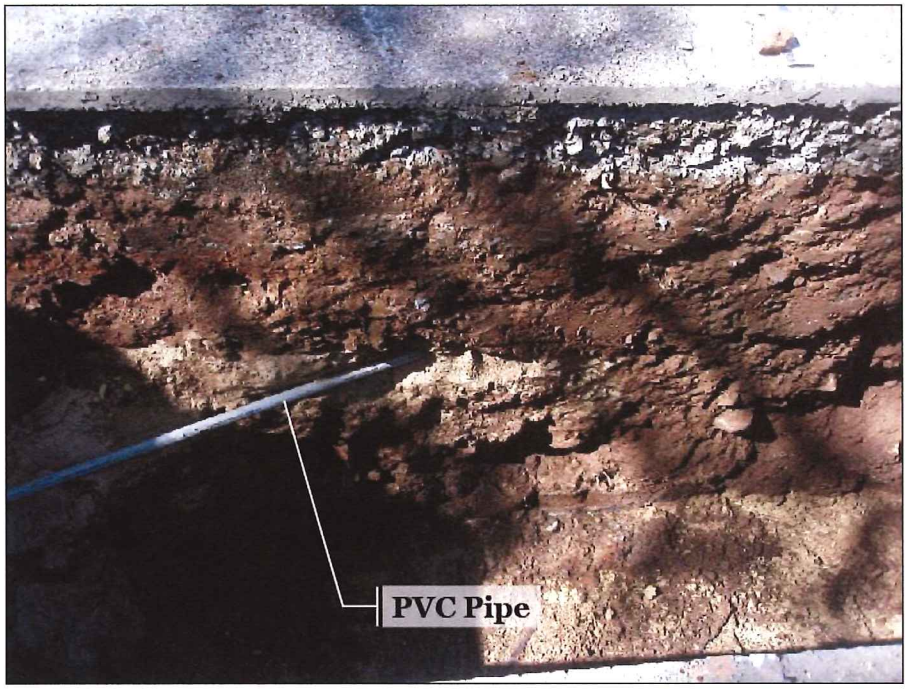


Figure 51. Western section of BT-2, north wall profile also showing *in situ* location of the PVC pipline (left of frame), view to north.

4.5.6 Backhoe Trench 5 (BT-5)

Backhoe Trench 5 (BT-5) measured approximately 0.8m wide by 5m long and was oriented in a general north-south direction (Figure 52). A total of nine stratigraphic layers were observed in the profile of this exploratory test trench (see detailed soil description below) with the upper two layers consisting of the typical macadam layers identified throughout the parking lot area overlying an imported fill sequence (Strata Ic through If) and intact C Horizon sediments (Strata II through IV) (Figure 55). Stratum Ic consists of a layer of concrete near surface originally thought to be an concrete jacket for a fiber optic or electric line (see also Figure 52).. Investigation of the trench sidewalls concluded that the concrete was likely discard from the original hotel construction as rubbish consisting of Styrofoam take-out boxes and plastic utensils were found in associated with the concrete layer. Unfortunately, the backhoe encountered difficulty in continuing excavation in the southern section of this trench due to the composition of the concrete and degree of sediment compaction. As a result, approximately 2.5m of the overall 5m long trench was not excavated below the 25cm depth (Figure 54). Stratum Id consists of gravel and cobble fill contains some waterworn cobbles overlying Stratum Ie, an additional concrete layer. Stratum If fill consists of a sandy clay fill containing very large boulders overlying Stratum II sediments which appear to be secondary Aeolian sand deposit characterized by thinly bedded sand stratigraphy. Stratum III represents the buried A-horizon of the original ground surface followed by a culturally sterile natural sand deposit (Stratum IV) typical of the coastal sand in this area. Excavation in the northern portion of this exploratory test trench terminated at approximately 180cmbs.

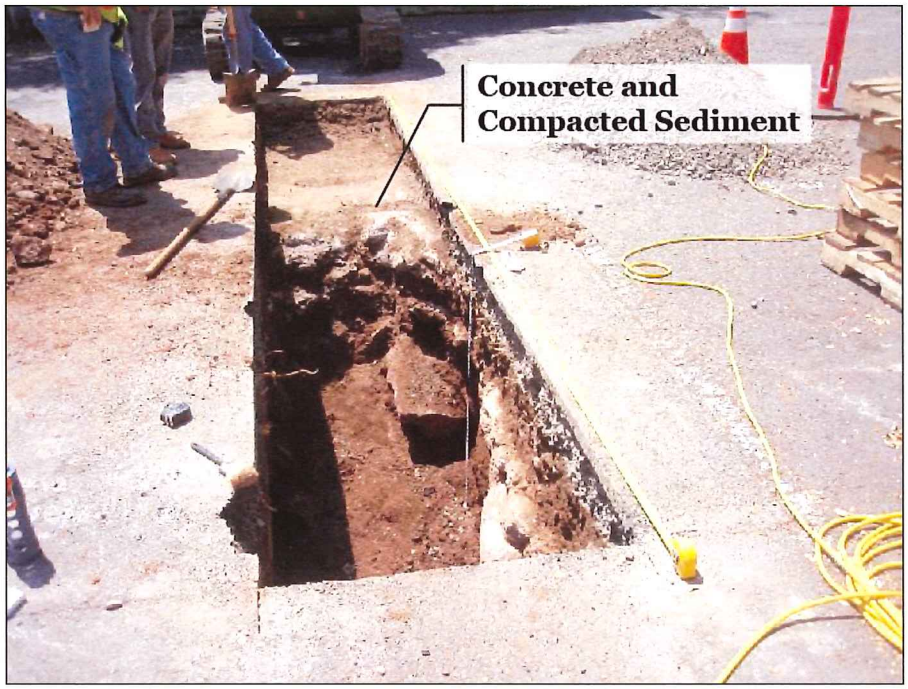


Figure 52. BT-5, overall view to south.

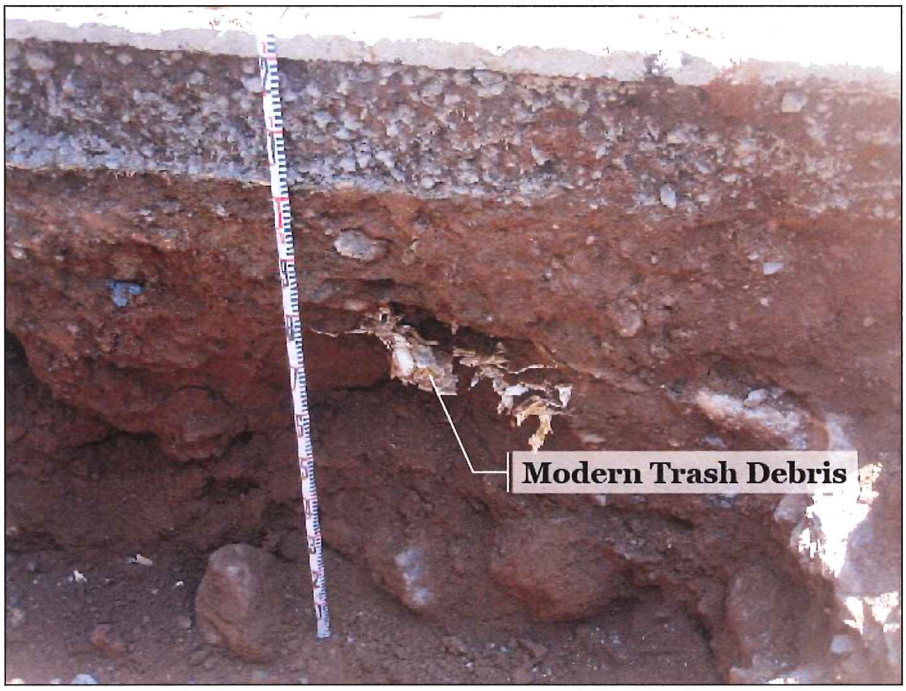


Figure 53. BT-5, east wall, showing depth of modern trash debris associated with the concrete layer.

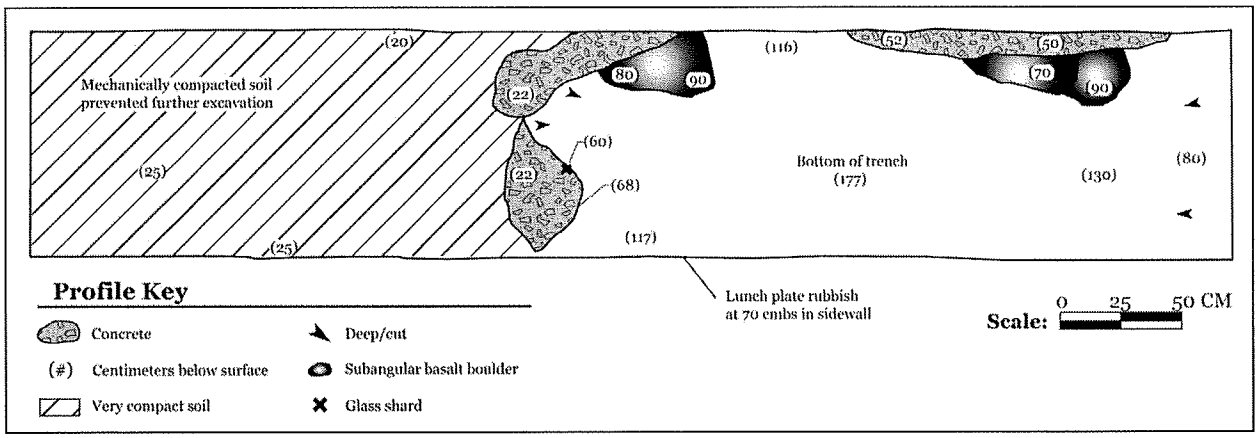


Figure 54. Trench BT-5 planview

Soil Description for BT-5 (Figure 55 and Figure 56)

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-25 cmbs)	Gravel base course
Stratum Ic (23-35 cmbs)	Concrete and basalt cobble fill
Stratum Id (25-38 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; few, fine to medium roots; modern trash inclusions. No significant cultural material or features were observed.
Stratum Ie (47-70 cmbs)	Concrete, gravel and basalt cobble fill
Stratum If (60-134 cmbs)	Fill horizon; 5YR 3/3, dark reddish brown sandy clay; strong to moderate crumb structure; fine to medium size; friable moist consistency; plastic; mixed origin; clear lower boundary; smooth topography; few, fine roots; boulder, cobble, and modern trash inclusions. No cultural material or features were observed.
Stratum II (152-170 cmbs)	C Horizon; 10YR 4/6 dark yellowish brown sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; abrupt lower boundary; irregular topography; few fine roots. No cultural material or features were observed.
Stratum III(170-177 cmbs)	C Horizon; 10YR 3/1 very dark gray sandy loam; weak granular structure; fine size; loose moist consistency; non plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.
Stratum IV (177-180 cmbs)	C Horizon; 10YR 6/3 pale brown sand; weak structureless single grain; medium size; loose moist consistency; non plastic; weak

cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

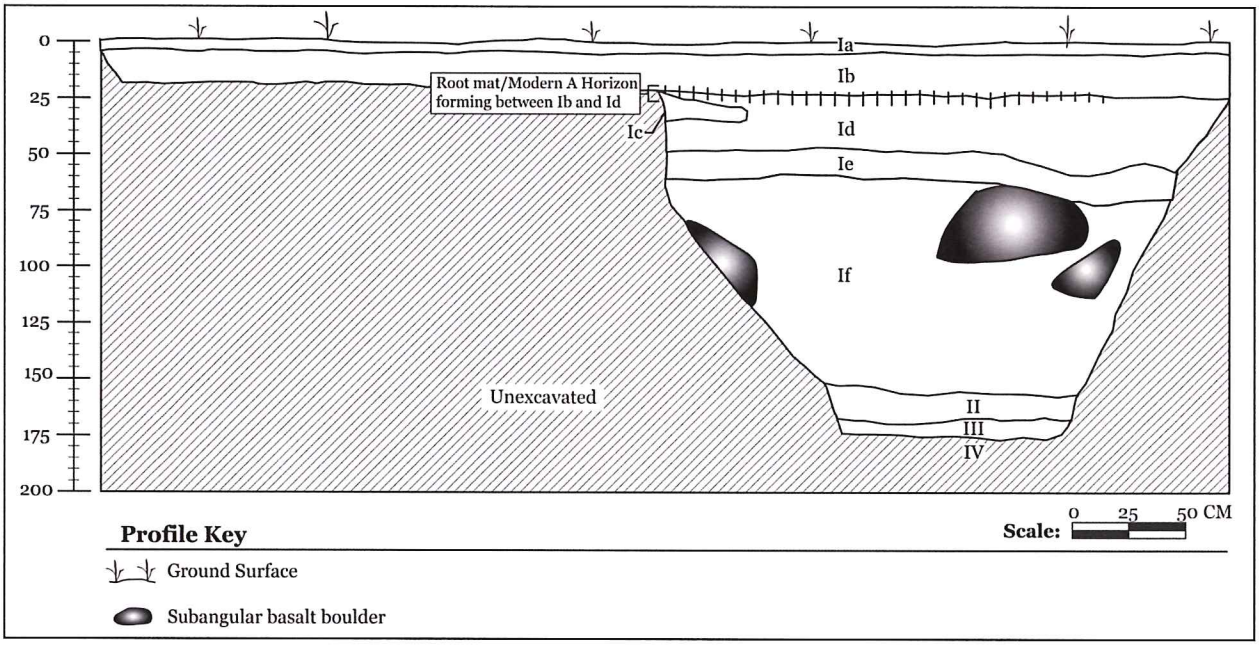


Figure 55. Trench BT-5 west wall soil profile.

Figure 56. Northern section of BT-5, west wall, showing all stratigraphic layers encountered.

Section 5 Summary and Interpretation

Prior to this, Fornander (Fornander 1919d:540)states that the region of Keka'a, "was the capital of Maui when Ka'alaneo was reigning over West Maui." Although archaeological evidence of coastal habitation for this specific area of Maui is scarce, Fornander assures us that "there were a great many people here." Based on the traditional knowledge and historic records researched for this study (see Section 3.1.1.1 Mo'olelo and Traditional Accounts 3.1.1.2 Subsistence and Habitation, and 3.1.1.3 Politics and Warfare), as well as archaeological evidence and interpretations (see also Section 3.2 Previous Archaeological Research), we know that the marine resource rich coastal area was highly used during the time period before western contact as evidenced. It also appears that the Hawaiian population prior to Western contact expanded into the stream valleys of Honokōwai and to some extent Hanaka'ō'ō where heavy rainfall in the upper stream valleys made irrigation systems for wetland taro possible. While Hanaka'ō'ō may not have been heavily populated, the adjacent Honokōwai Ahupua'a featured a perennial stream with an average daily flow of over 2,500,000 gallons (Stearns 1942). As such, the well watered stream valleys would have provided a reliable water source for successful agricultural pursuits from the headwaters to the seaward mouth of the stream as evidenced by documentation of pre-contact and early post-contact period *lo'i kalo* (irrigated terraces for wetland taro) within Honokōwai Valley between 800 and 1,000 feet in elevation (Davis 1977; Emory and Hommon 1972; E. M. Fredericksen and Fredericksen 2003; Jensen 1991; Kaschko 1974).

Following Western contact, and with the development of commercial sugar ventures, much of the lands of near-shore Hanaka'ō'ō Ahupua'a was extensively developed for sugar cane cultivation beginning in the 1880's and likely eliminating any surface indications of traditional Hawaiian agriculture and habitation along the soil rich plains just *mauka* of the coastal strip. With resort development of the Hanaka'ō'ō shoreline during the 1960's and into the modern era, any remnant archaeological surface features would have likely been eliminated as well. This premise is supported by the results of the current study as no historically significant pre-contact or post-Western contact sites or features were identified on the surface within the current project area. Subsurface testing also resulted in a negative finding, as the areas subject to investigation, illustrated a history of previous disturbance and fill events that are likely associated with the initial construction of the Maui Surf Hotel in the early 1970's and follow up re-development construction associated with the renovation and expansion of the current Westin Maui Resort & Spa in the mid to late 1980's.

An approximate 20-30cm thick cinder layer was encountered in four out 15 trenches total (BT-1, -3, -12, and -16) at a depth of 30 to 65cmbs. Based on the presence and compaction of this buried layer, it is thought that this cinder layer, as well as the fill sediments below may be associated with the early construction of the Maui Surf Hotel. It is also likely that fill layers above the depth of the cinder layer are related with the redevelopment of the grounds for the Westin Maui Resort and Spa and more specifically associated with raising the elevation of parking lot area above the current elevation of the Kā'anapli Parkway. It also is notable that the original ground surface was encountered at between 80 to 100cmbs and for the most part, within the area adjacent to the Ballroom Expansion as well as the eastern section of the Proposed Parking Structure Area, consistent with the USDA soil description and typical profile associated with Ewa Silty Clay 0-3% Slopes (EeA) (Foote et al. 1972:30) (see also 1.3.1 Natural Environment and Figure 5). The

sediment of the western portion of the Proposed Parking Structure Area, however, appears to be a transitional area where the EeA soil and sediments intermix with the Jaucus Sand deposits (JaC) as evident in BT-2 and BT-6 where there is a burnt layer of kiawe roots likely representing a larger burn episode, as well as, evidence of a buried A Horizon in the northern section of BT-5 (see also Section 4.5 Proposed Parking Structure Area).

The results of the current study, and more specifically the subsurface testing program, clearly illustrates the history of development as well a probable timeline for associated ground disturbing activities. This archaeological investigation did not identify any *in situ* historically significant cultural materials in a sub-surface context and resulted in no significant historic properties identified.

Section 6 Project Effect and Mitigation Recommendations

6.1 Project Effect

Under Hawai'i state historic preservation legislation, the only two possible effect determinations for a given project under historic preservation review are "no historic properties affected" and "effect, with proposed mitigation commitments" (HAR Chapter 13-284-7). While the current study did not positively identify an *in situ* historically significant sites or features, previous work on lands directly adjacent to the current project area have been known to encounter culturally sensitive human burial remains in a previously disturbed context (Perzinski and Dega 2009:10; Rotunno-Hazuka 2009b, 2013), as well as, within older fill deposits associated with early development of the Kā'anapali Resort Area (D. L. Fredericksen 1998:8; Hill, Arnold et al. 2007:46). It is worth reiterating that safety constraints prevented subsurface testing at the proposed Tropica Restaurant and Ono Bar Expansion Area and it should be further noted that this area does appear to fall within Jaucas Sand deposits, a sediment type known to contain a high probability for encountering traditional human burial interments (Figure 57). Additionally, as mentioned above, culturally sensitive human remains have been identified in previously disturbed contexts and fill deposits on adjacent properties. As result, it cannot be assumed that highly disturbed sediments in this area of Hanaka'ō'ō eliminates the possibility of encountering culturally sensitive remains. In this respect, it should be further noted the area proposed for construction of a new back of the house structure was not tested due to the limiting subsurface constraints presented by the likely presence of extensive subsurface utilities. Considering the above, a project effect determination of "potential for effect, with proposed mitigation" is recommended.

6.2 Mitigation Recommendations

Given the above discussion, archaeological monitoring of all ground disturbing activities associated with the proposed project is recommended as an identification and mitigation measure per HAR 13-279-3.

6.3 Disposition of Materials

All of the data gathered and generated during the course of this inventory survey are currently being curated and housed (Reference CSH Job Code: HANAKAOO 4) at the Maui Office of Cultural Surveys Hawai'i, Inc., 1860 Main Street, Wailuku, HI 96793 with copies on file at the main office of Cultural Surveys Hawai'i, Inc. at 41-1537 Kalanianaole Hwy # 200, Waimanalo, HI 96795-1185.

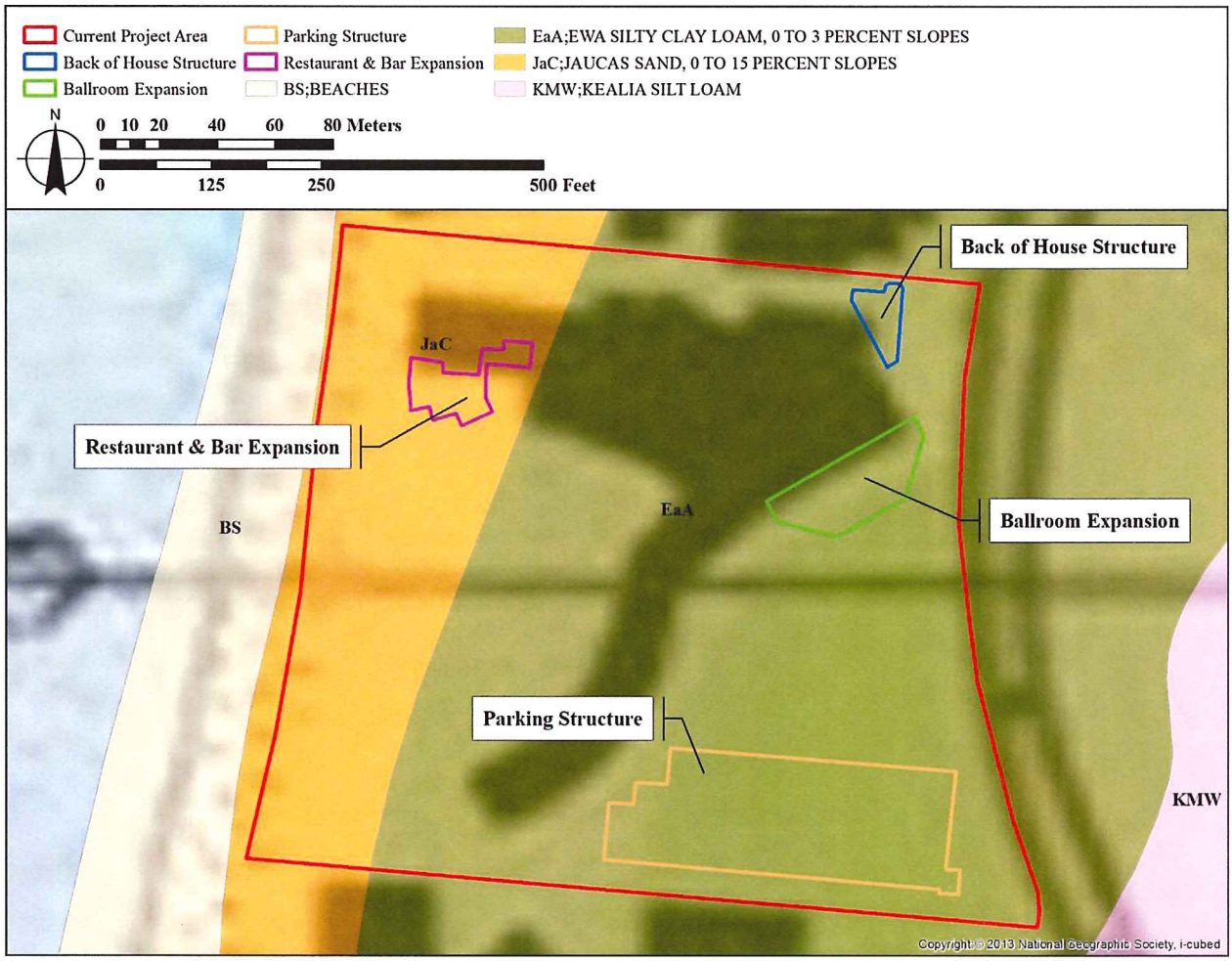


Figure 57. A portion of the 1992 Lahaina 7.5-minute USGS topographic quadrangle, showing the current project area (outlined in red) an areas of direct effect relative to the local soil series (U.S. Department of Agriculture 2001).

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Trench # BT-1

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-20 cmbs) Gravel base course

Stratum Ic (20-34 cmbs) Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; with common roots. No cultural material or features were observed.

Stratum Id (27-43 cmbs) Fill horizon; 5YR 3/1, very dark gray sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum Ie (35-62 cmbs) Fill horizon; 5YR 4/4, reddish brown silt; moderate to strong granular structure; coarse size; friable moist consistency; non plastic; weak cementation; terrigenous origin; abrupt lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum If (60-145 cmbs) Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate crumb structure; fine size; friable moist consistency; slightly plastic; weak cementation; mixe origin; abrupt lower boundary; smooth topography; no roots. No cultural material or features were observed. The semi compacted fill horizon contained 40-45% boulder, cobble and pebble inclusions.

Stratum II (135-160 cmbs) C horizon; 7.5YR 4/4, brown sandy loam; weak granular structure; fine size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

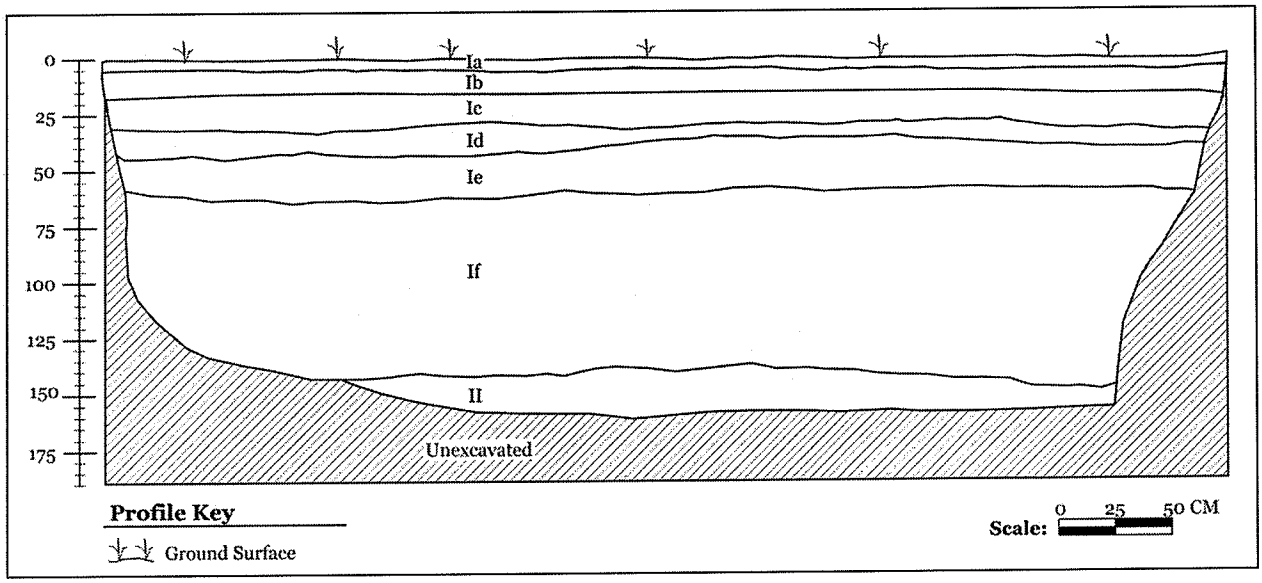


Figure A- 1. Trench BT-1 east wall soil profile

Trench # BT-2

Soil Description

Stratum Ia (0-6 cmbs) Asphalt

Stratum Ib (5-23 cmbs) Gravel base course

Stratum Ic (17-95 cmbs) Fill horizon; 10YR 7/3, very pale brown sand; moderate to strong grade structureless single grain; fine to medium size; hard dry consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; no roots. This fill was in a utility trench for a PCV pipe containing electrical wires.. No cultural material or features were observed.

Stratum Id (17-130 cmbs) Fill horizon; 5YR 3/2, dark reddish brown sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; wavy topography; no roots. This fill contained rebar, and metal. No significant cultural material or features were observed.

Stratum III(110-155 cmbs) A horizon; 5YR 3/1, very dark gray sandy silt; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; wavy topography; no roots. Charcoal, although present, was determined to be non cultural originating from burnt branches and trees. No cultural material or features were observed.

Stratum IV(145-170 cmbs)C horizon; 7.5YR 5/4, brown sand; structureless single grain; moderate grade; coarse size; very friable moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

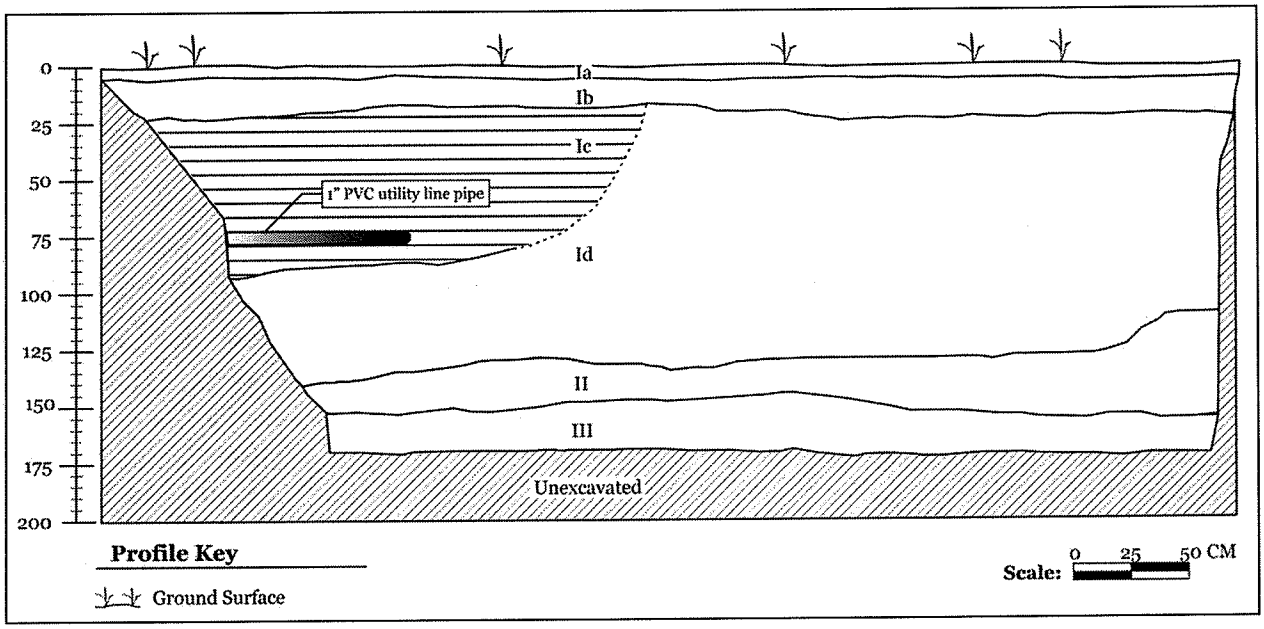


Figure A- 2. Trench BT-2 north wall soil profile

Trench # BT-3

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-20 cmbs) Gravel base course

Stratum Ic (20-40 cmbs) Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; fine to medium size; hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; many medium to coarse size roots. No cultural material or features were observed.

Stratum Id (30-50 cmbs) Fill horizon; 2.5YR 3/6, dark red gravelly silt; moderate granular structure; coarse size; friable moist consistency; non plastic; weak cementation; terrigenous origin; abrupt lower boundary; broken/discontinuous topography; no roots. No cultural material or features were observed within this crushed cinder fill horizon.

Stratum Ie (35-90 cmbs) Fill horizon; 5YR 3/3, reddish brown sandy clay; moderate to strong crumb structure; fine to medium size; friable moist consistency; plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. This stratum was compacted and contained large subangular/rounded boulder and cobble inclusions. No cultural material or features were observed.

Stratum II (80-105 cmbs) A horizon; 5YR 3/1, very dark grey sand; structureless single grain; moderate grade; fine to medium size; very friable moist consistency; non plastic; weak cementation; marine origin; abrupt lower boundary; irregular topography; no roots. Burned organic inclusions were recorded and a soil sample was taken from this stratum. No cultural material or features were observed.

Stratum III (97-123 cmbs) C Horizon; 10YR 6/3 pale brown sand; structureless single grain; weak grade; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum IV(115-125 cmbs)C Horizon; 5YR 3/4 dark reddish brown silty sand; weak grade structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. Probable flood/storm deposit. No cultural material or features were observed.

Stratum V(125-145 cmbs) C Horizon; 10YR 6/3 pale brown sand; weak grade; structureless single grain; fine size; loose moist consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum VI(140-150 cmbs)C Horizon; 5YR 3/2 dark reddish brown silty sand; weak granular structure; fine size; loose moist consistency; non plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. Probable flood/storm deposit. No cultural material or features were observed.

Stratum VII(145-160 cmbs)C Horizon; 10YR 6/3 pale brown sand; weak grade; structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

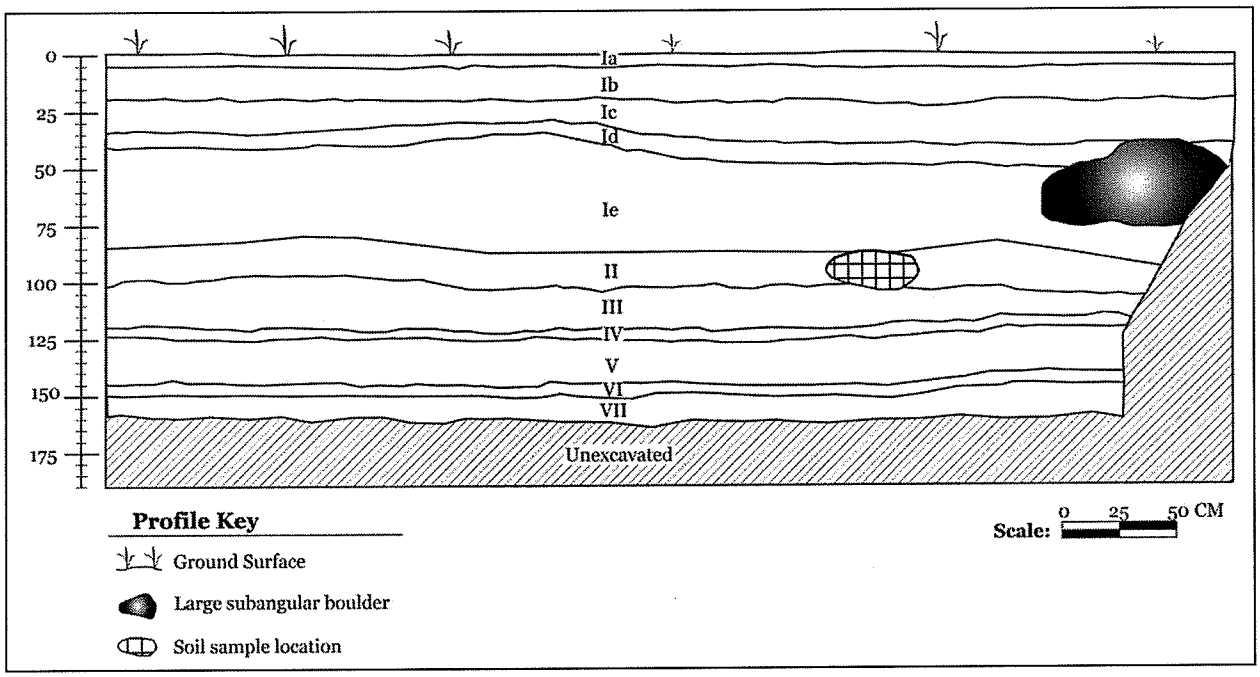


Figure A- 3. Trench BT-3 east wall soil profile

Trench # BT-4

Soil Description

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-24 cmbs)	Gravel base course
Stratum Ic (20-30 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots, 60 to 75 % gravel inclusions. No cultural material or features were observed.
Stratum Id (25-35 cmbs)	Compacted gravel fill.
Stratum Ie (25-60 cmbs)	Fill horizon; 5YR 3/4, dark reddish brown sandy clay; strong crumb structure; medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. This stratum was a compacted with 50 to 60% gravel inclusions. No cultural material or features were observed.
Stratum If (52-67 cmbs)	Fill horizon; 5YR 3/1, very dark grey sandy clay; strong crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.
Stratum Ig (60-120 cmbs)	Fill Horizon; 5YR 3/2 dark reddish brown sandy clay; moderate granular structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; wavy topography; no roots; 40 to 45% boulder, cobble, and pebble inclusions. No cultural material or features were observed.

Stratum II (120-150 cmbs) A horizon; 5YR 3/1, very dark grey sandy loam; moderate crumb structure; fine to medium size; friable moist consistency; non plastic; weak cementation; mixed origin; clear lower boundary; wavy topography; no roots. Charcoal was recorded in this stratum and a soil sample was taken. No cultural material or features were observed.

Stratum III (145-175 cmbs) C Horizon; 7.5YR 5/4 brown sand; weak to moderate structureless single grain; medium to coarse size; weakly coherent very friable moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; smooth topography; no roots. No cultural material or features were observed.

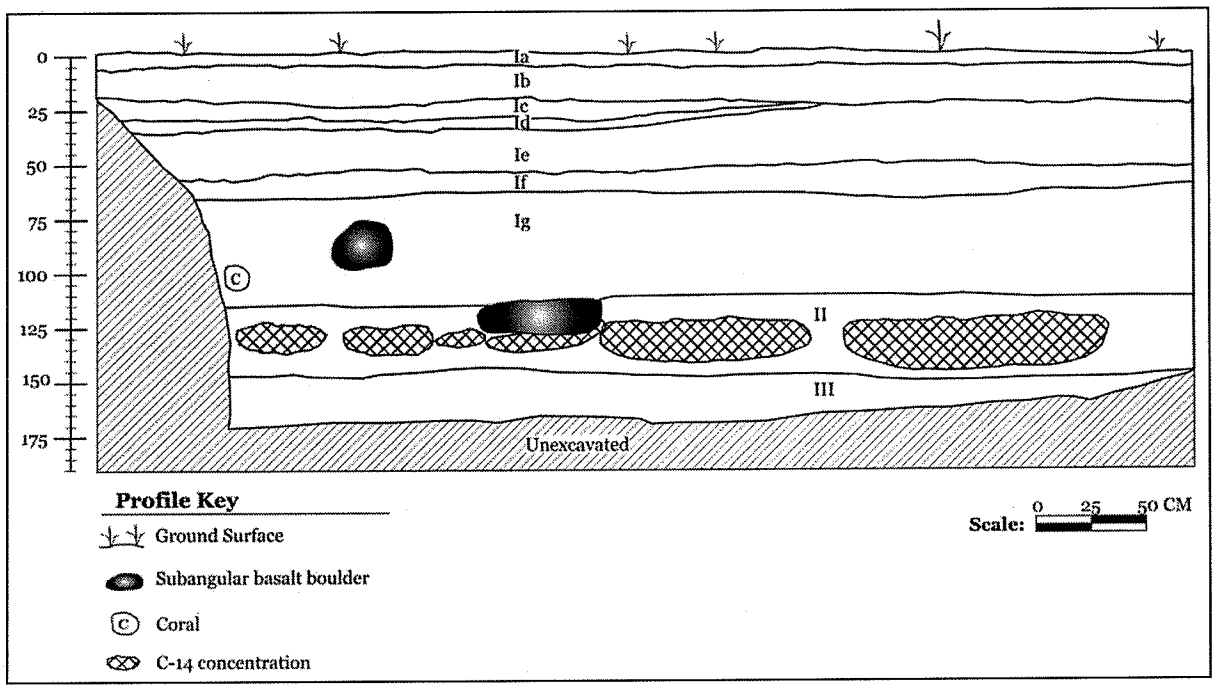


Figure A- 4. Trench BT-4 east wall soil profile

Trench # BT-5

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-25 cmbs) Gravel base course

Stratum Ic (23-35 cmbs) Concrete and basalt cobble fill

Stratum Id (25-38 cmbs) Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; few, fine to medium roots; modern trash inclusions. No significant cultural material or features were observed.

Stratum Ie (47-70 cmbs) Concrete, gravel and basalt cobble fill

Stratum If (60-134 cmbs) Fill horizon; 5YR 3/3, dark reddish brown sandy clay; strong to moderate crumb structure; fine to medium size; friable moist consistency; plastic; mixed origin; clear lower boundary;

smooth topography; few, fine roots; boulder, cobble, and modern trash inclusions. No cultural material or features were observed.

Stratum II (152-170 cmbs) C Horizon; 10YR 4/6 dark yellowish brown sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; abrupt lower boundary; irregular topography; few fine roots. No cultural material or features were observed.

Stratum III(170-177 cmbs) C Horizon; 10YR 3/1 very dark gray sandy loam; weak granular structure; fine size; loose moist consistency; non plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum IV (177-180 cmbs) C Horizon; 10YR 6/3 pale brown sand; weak structureless single grain; medium size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

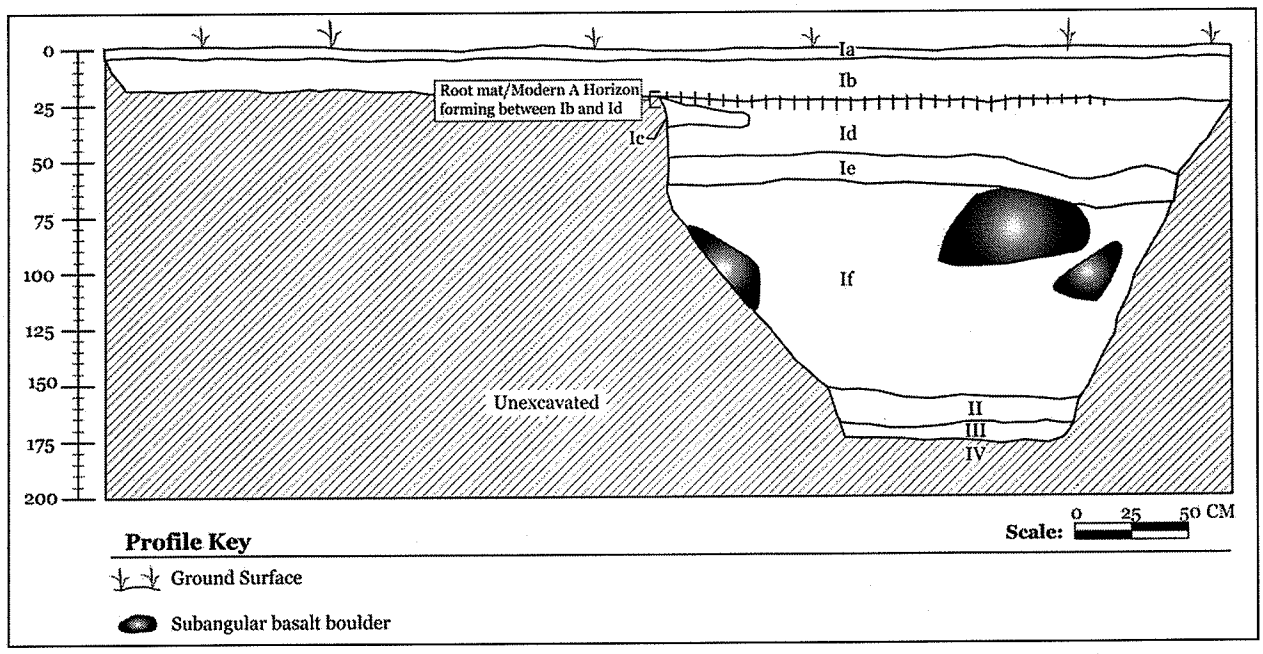


Figure A- 5. Trench BT-5 west wall soil profile

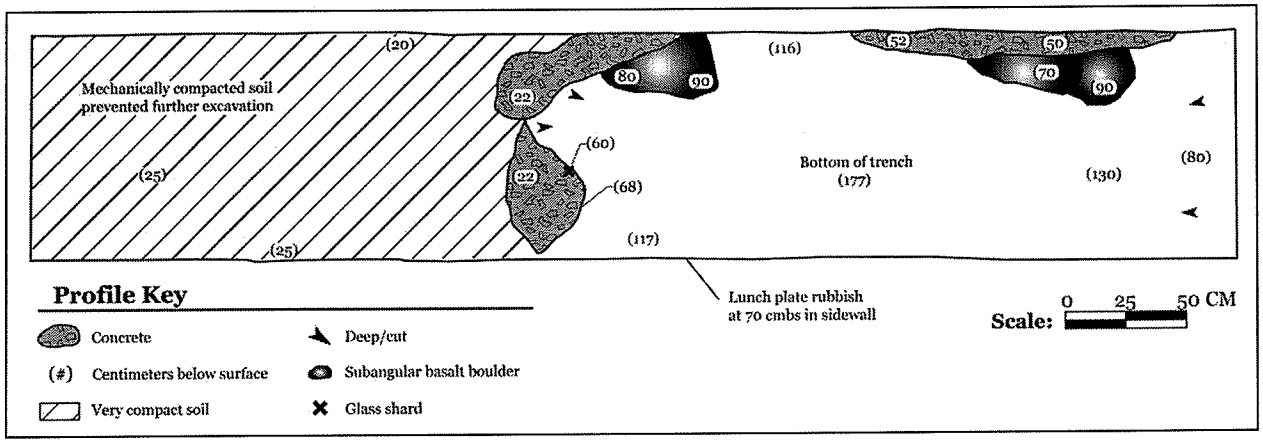


Figure A- 6. Trench BT-5 planview

Trench # BT-6

Soil Description

Stratum Ia (0-7 cmbs)	Asphalt
Stratum Ib (5-23 cmbs)	Gravel base course
Stratum Ic (20-25 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong columnar structure; medium size; hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots; compacted with 20% gravel inclusions. No cultural material or features were observed.
Stratum Id (25-37 cmbs)	Fill horizon; 5YR 2.5/1, black sandy clay; strong columnar structure; medium size; hard dry consistency; slightly plastic; mixed origin; clear lower boundary; smooth topography; no roots. This stratum was very compacted, mottled with red clay and grayish brown sand with sub-rounded/rounded boulder inclusions. No cultural material or features were observed.
Stratum Ie (35-80 cmbs)	Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate crumb structure; medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; irregular topography; no roots; sub-rounded/rounded boulder inclusions. No cultural material or features were observed.
Stratum If (73-127 cmbs)	Fill horizon; 5YR 5/3, dark reddish brown sandy clay; strong to moderate granular structure; medium size; loose moist consistency; non plastic; mixed origin; clear lower boundary; wavy topography; no roots. This stratum was a loose to semi compacted deposit with very large subangular boulders, rounded marine shell and coral inclusions. No cultural material or features were observed.
Stratum II (100-145 cmbs)	B horizon; 5YR 3/3, dark reddish brown sandy loam; weak crumb structure; fine size; loose moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; wavy topography; no roots; charcoal (likely burned kiawe trees), rounded marine shell and coral inclusions. No cultural material or features were observed.
Stratum III (135-174cmbs)	C Horizon; 10YR 6/4 light yellowish brown sand; weak structureless single grain; coarse size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

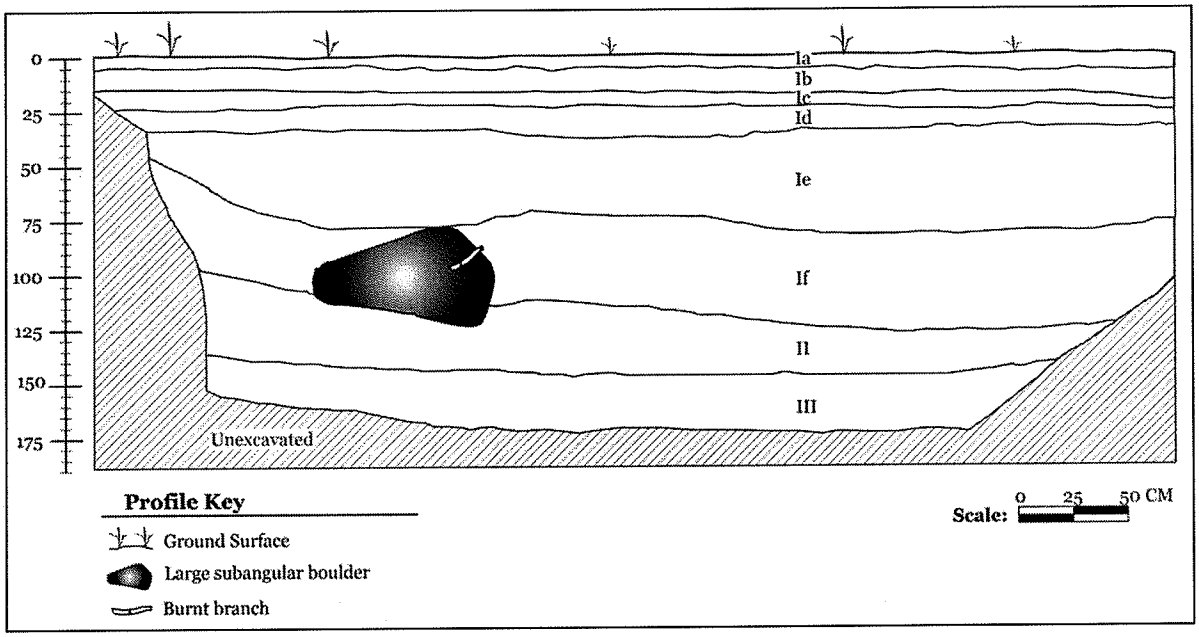


Figure A- 7. Trench BT-6 northwest wall soil profile

Trench # BT-7

Soil Description

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-27 cmbs)	Gravel base course
Stratum Ic (25-43 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; few fine roots; 30 to 35% gravel inclusions. No cultural material or features were observed.
Stratum Id (35-60 cmbs)	Fill horizon; 5YR 4/4, reddish brown sandy clay; strong blocky structure; medium to coarse size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots; 35-45% gravel inclusions. No cultural material or features were observed.
Stratum Ie (50-100 cmbs)	Fill horizon; 5YR 2.5/2, dark reddish brown sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; wavy topography; no roots; modern trash, 40-45% boulder, cobble (some water worn) and pebble inclusions.. No cultural material or features were observed.
Stratum If (65-114 cmbs)	Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; lower boundary not visible; no roots. No cultural material or features were observed. The semi compacted fill horizon contained 40-45% boulder, cobble and pebble inclusions.

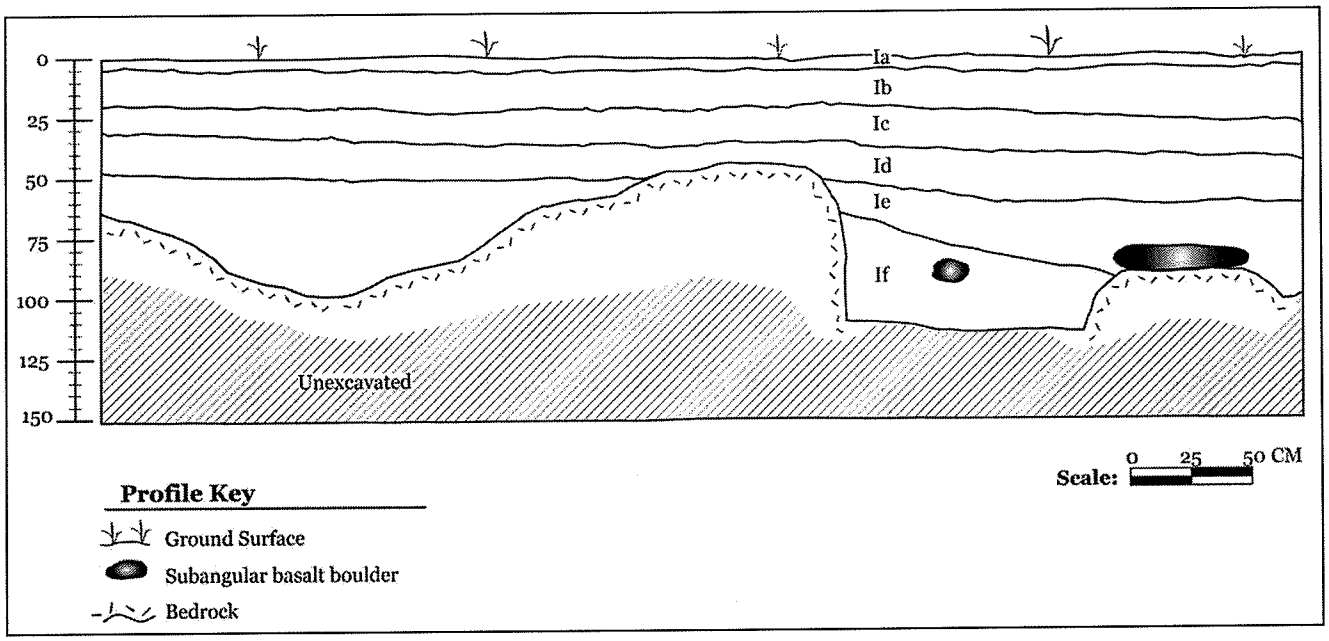


Figure A- 8. Trench BT-7 east wall soil profile

Trench # BT-8

Soil Description

Stratum Ia (0-5 cmbs)	Asphalt
Stratum Ib (5-20 cmbs)	Gravel base course
Stratum Ic (20-58 cmbs)	Fill horizon; 10YR 3/2, very dark grayish brown sandy clay; strong blocky structure; medium size; moist friable consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; many medium roots. No cultural material or features were observed.
Stratum Id (45-73 cmbs)	Fill horizon; 10YR 3/1, very dark gray sandy clay; strong blocky structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; broken/discontinuous topography; no roots; gravel, cobble and modern trash inclusions. No significant cultural material or features were observed.
Stratum Ie (62-130 cmbs)	Fill horizon; 5YR 3/2, dark reddish brown sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; wavy topography; no roots; modern trash, 20-55% boulder, cobble and subangular pebble inclusions. No significant cultural material or features were observed.
Stratum If (84-170 cmbs)	Fill horizon; 5YR 3/1, very dark gray sandy clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; mixed origin; lower boundary not visible; no roots; subangular boulder, cobble and modern trash inclusions. No significant cultural material or features were observed.

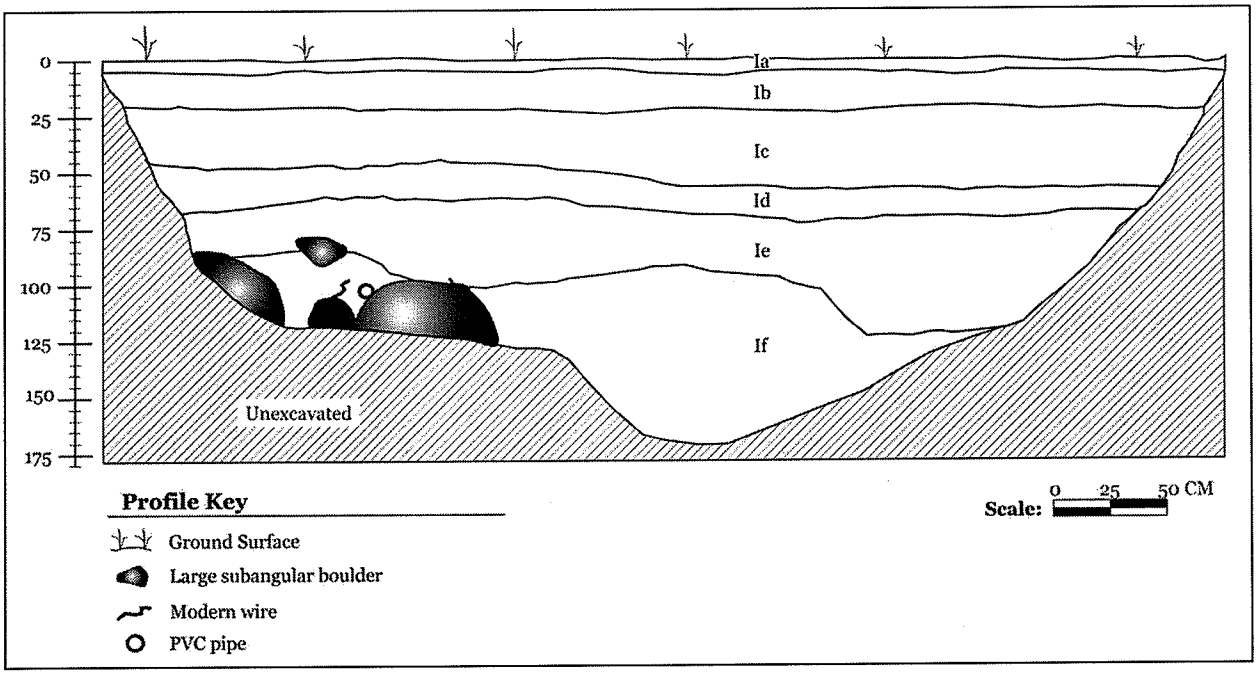


Figure A- 9. Trench BT-8 north wall soil profile

Trench # BT-9

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-27 cmbs) Gravel base course

Stratum Ic (25-50cmbs) Fill horizon; 5YR 4/3, dark reddish brown sandy clay; strong blocky structure; fine to medium size; very hard dry consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; smooth topography; common, fine roots; modern trash inclusions. No significant cultural material or features were observed.

Stratum Id (35-110 cmbs) Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate to strong crumb structure; fine to medium size; friable moist consistency; plastic; weak cementation; mixed origin; abrupt lower boundary; smooth topography; common, fine roots. This stratum contained modern trash in addition to 10 to 20% sub angular boulder and cobble inclusions a few of which were water worn. No significant cultural material or features were observed.

Stratum II (77-110 cmbs) C horizon; 2.5YR 3/6, dark red sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; abrupt lower boundary; broken/discontinuous topography; common, fine roots. This stratum is a transition layer between Stratum-Id and III containing loose sand with no inclusions. A Charcoal lens was present at the top of this layer but no cultural material or features were observed.

Stratum III(90-127 cmbs) C horizon; 10YR 4/6, dark yellowish brown sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; few, fine roots. No cultural material or features were observed.

Stratum IV(125-135 cmbs) C Horizon; 10YR 3/1 very dark gray sandy loam; weak granular structure; fine size; loose moist consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; few, fine roots. No cultural material or features were observed.

Stratum V (130-170 cmbs) C Horizon; 10YR 6/3 pale brown sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; few, fine to medium roots. No cultural material or features were observed.

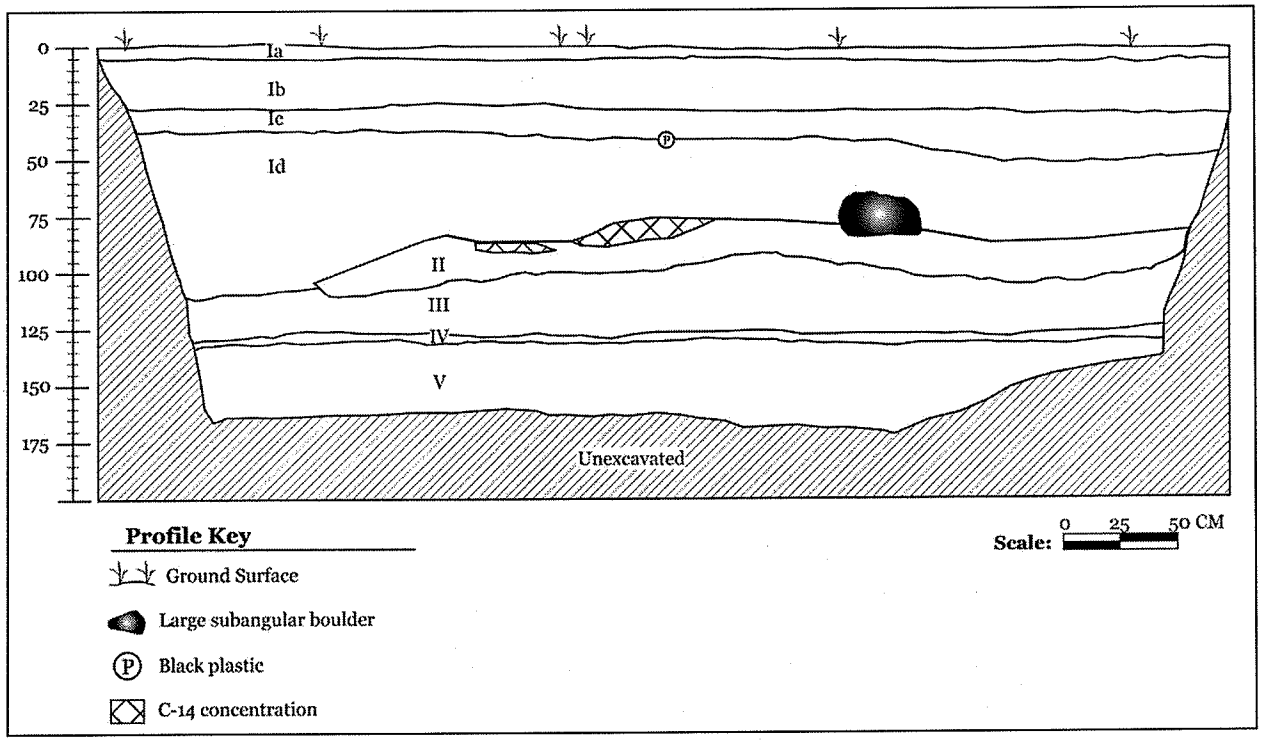


Figure A- 10. Trench BT-9 north wall soil profile

Trench # BT-10

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-27 cmbs) Gravel base course

Stratum Ic (27-40 cmbs) Fill horizon; 5YR 3/2, dark reddish brown sandy clay; strong blocky structure; fine to medium size; friable consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; smooth topography; common, fine roots; modern trash observed; cobble and gravel inclusions. No significant cultural material or features were observed.

Stratum Id (37-155 cmbs) Fill horizon; 5YR 3/3, dark reddish brown sandy clay; moderate to strong crumb structure; fine to medium; hard dry consistency; plastic; weak cementation; mixed origin; few, fine roots; subangular cobble, boulder and modern trash inclusions. No significant cultural material or features were observed.

Stratum II (145-155 cmbs) C horizon; 10YR 4/6, dark yellowish brown sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

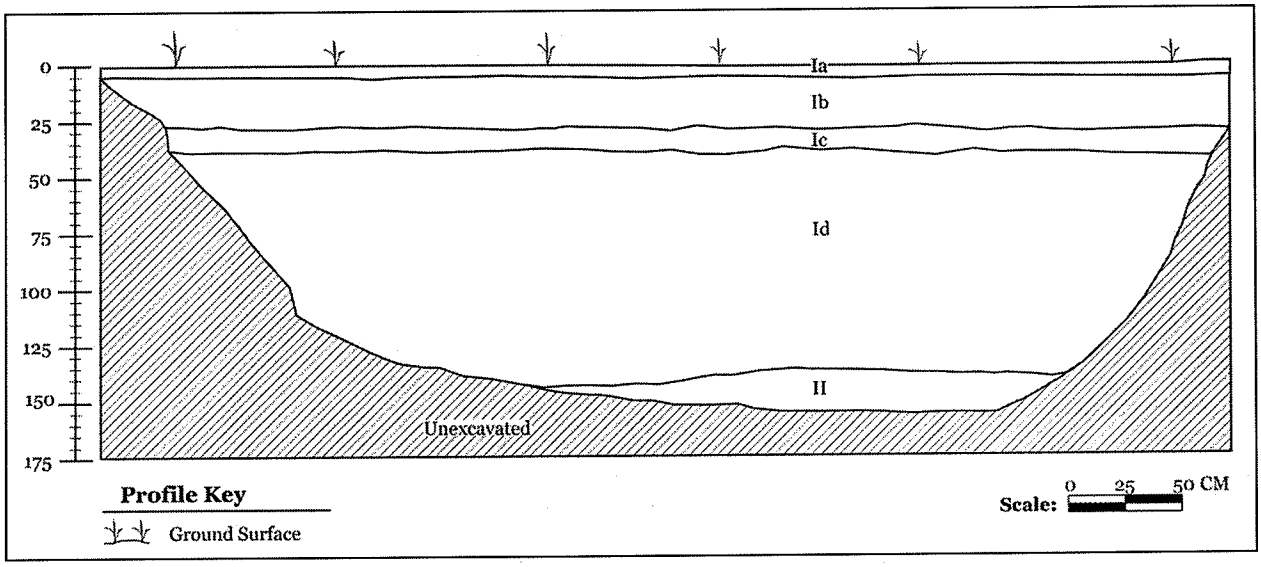


Figure A- 11. Trench BT-10 south wall soil profile

Trench # BT-11

Soil Description

Stratum Ia (0-8 cmbs) Asphalt

Stratum Ib (5-27 cmbs) Gravel base course

Stratum Ic (20-40cmbs) Fill horizon; 5YR 3/2, dark reddish brown sandy clay loam; friable, moist consistency; slightly plastic; mixed origin; clear lower boundary; broken/discontinuous topography. Irrigation pipe recorded within the matrix. No significant cultural material or features were observed.

Stratum Id (20-40 cmbs) Fill horizon; 10YR 2/2, very dark brown clay loam; moderate to strong crumb structure; fine to medium size; friable consistency; slightly plastic; mixed origin; abrupt lower boundary; broken/discontinuous topography; common, no roots. No cultural material or features were observed.

Stratum Ie (30-128 cmbs) Fill horizon; 5YR 2.5/2, dark reddish brown sandy clay loam; moderate crumb structure; medium size; friable moist consistency; slightly plastic; mixed origin; diffuse lower boundary; wavy topography; few, fine roots. No cultural material or features were observed.

Stratum II (35-133 cmbs) C horizon; 5YR 3/3, dark reddish brown sandy loam; moderate crumb structure; medium size; friable moist consistency; non plastic; mixed origin; clear lower boundary; broken/discontinuous topography; no roots. No cultural material or features were observed.

Stratum III (100-125 cmbs) C Horizon; 5YR 3/3, dark reddish brown sandy clay; medium size; friable moist consistency; slightly plastic; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum IV (100-157 cmbs) C Horizon; 10YR 6/3 pale brown sand; structure less single grain; fine to medium size; friable moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; few, fine to medium roots. No cultural material or features were observed.

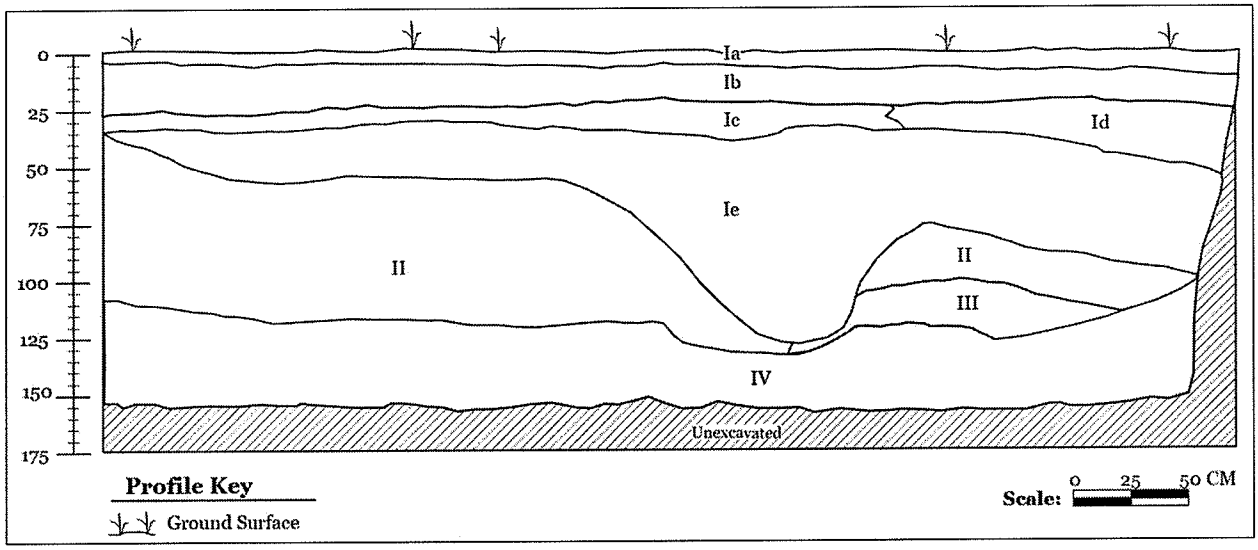


Figure A- 12. Trench BT-11 north wall soil profile

Trench # BT-12

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-24 cmbs) Gravel base course

Stratum Ic (20-60cmbs) Fill horizon; 10YR 3/3, dark reddish brown sand silt; strong columnar structure; friable, moist consistency; non-plastic; mixed origin; abrupt lower boundary; broken/discontinuous topography; gravel inclusions; No cultural material or features were observed.

Stratum Id (42-57 cmbs) Fill horizon; 10YR 3/2, very dark grayish brown sandy clay; strong blocky structure; medium size; very hard dry consistency; weak cementation, slightly plastic; mixed origin; abrupt lower boundary; broken/discontinuous topography; no roots; gravel inclusions. Modern trash including a 1980 Coca Cola can observed.

Stratum Ie (63-90 cmbs) Fill horizon; 2.5YR 3/3, dark reddish brown sandy silt; strong grade; medium size; firm moist consistency; non-plastic; mixed origin; clear lower boundary; smooth topography; no roots, cinder inclusions. No cultural material or features were observed.

Stratum If (70-160 cmbs) Fill horizon; 5YR 3/2, dark reddish brown clay; strong structureless massive; fine to medium size; hard dry consistency; plastic; terrigenous origin; clear lower boundary; smooth topography; no roots, boulder inclusions. No cultural material or features were observed.

Stratum Ig (77-158 cmbs) Fill Horizon; 5YR 4/3, reddish brown clay; strong, structureless massive, fine size; sticky wet consistency; weak cementation; plastic; terrigenous origin; clear lower boundary; smooth topography; no roots, cobble and boulder inclusions. No cultural material or features were observed.

Stratum II(150-190 cmbs) C Horizon; 10YR 3/1 very dark gray silty sand; weak granular structure; medium to coarse size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

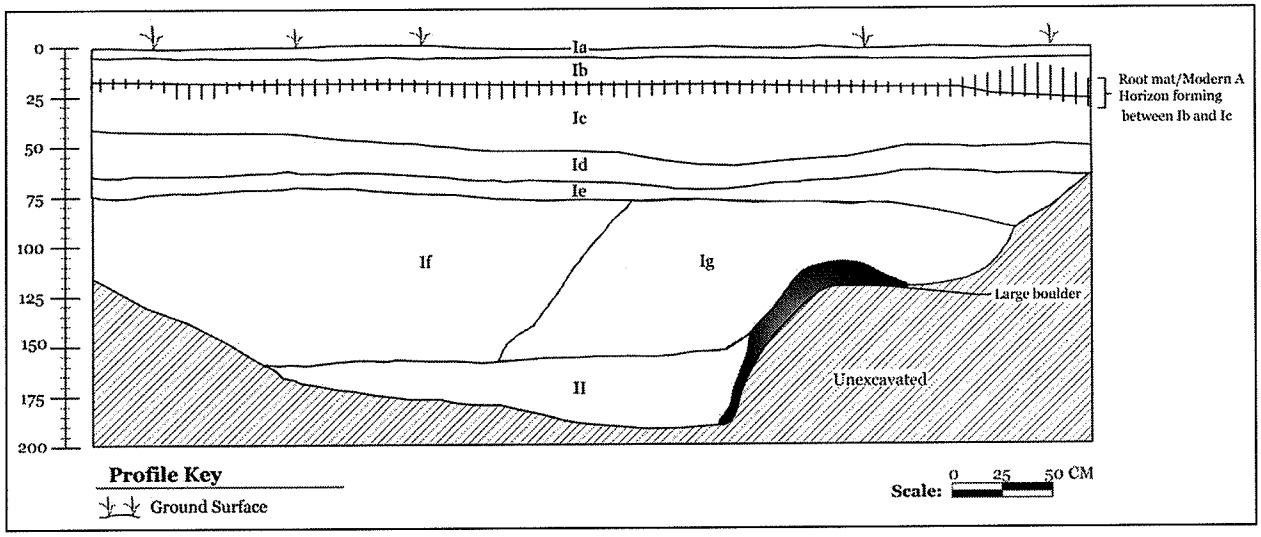


Figure A- 13.. Trench BT-12 east wall soil profile

Trench # BT-14

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-20 cmbs) Gravel base course

Stratum Ic (20-65 cmbs) Fill horizon; 5YR 3/1, very dark gray clay loam; strong columnar structure; medium size; friable moist consistency; slightly plastic; weak cementation; terrigenous origin; abrupt lower boundary; smooth topography; no roots; 10% cobble and boulder inclusions. No cultural material or features were observed.

Stratum Id (64-75 cmbs) Fill horizon; 2.5YR 3/3, dark reddish brown sandy silt; moderate to strong crumb structure; medium to coarse size; friable moist consistency; non plastic; terrigenous origin; clear lower boundary; smooth topography; no roots. This stratum was very compacted, No cultural material or features were observed.

Stratum Ie (70-95 cmbs) Fill horizon; 2.5YR 3/2, dusky red sandy clay; strong, columnar structure; medium to coarse size; friable moist consistency; slightly plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; few medium size roots; This stratum was very compacted with 20% gravel inclusions. No cultural material or features were observed.

Stratum II (95-117 cmbs) Indeterminate horizon; 10YR 5/4, dark red sandy loam; weak, granular structure; fine to medium size; loose moist consistency; non plastic; mixed origin; diffuse lower boundary; broken/discontinuous topography; no roots. This stratum may be the original surface A horizon. No cultural material or features were observed.

Stratum III(90-153 cmbs) C horizon; 10YR 5/4, yellowish brown sand; weak structureless single grain; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; clear lower boundary; smooth topography; common medium size roots; No cultural material or features were observed.

Stratum IV(153-163cmbs) Indeterminate Horizon; 5YR 3/1 very dark gray sandy loam; weak granular structure; fine to medium size; loose moist consistency; non plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots. This stratum is a possible flood deposit. No cultural material or features were observed.

Stratum V(163-180cmbs) C Horizon; 10YR 6/4 yellowish brown sand; structureless single grain; medium to coarse size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. No cultural material or features were observed.

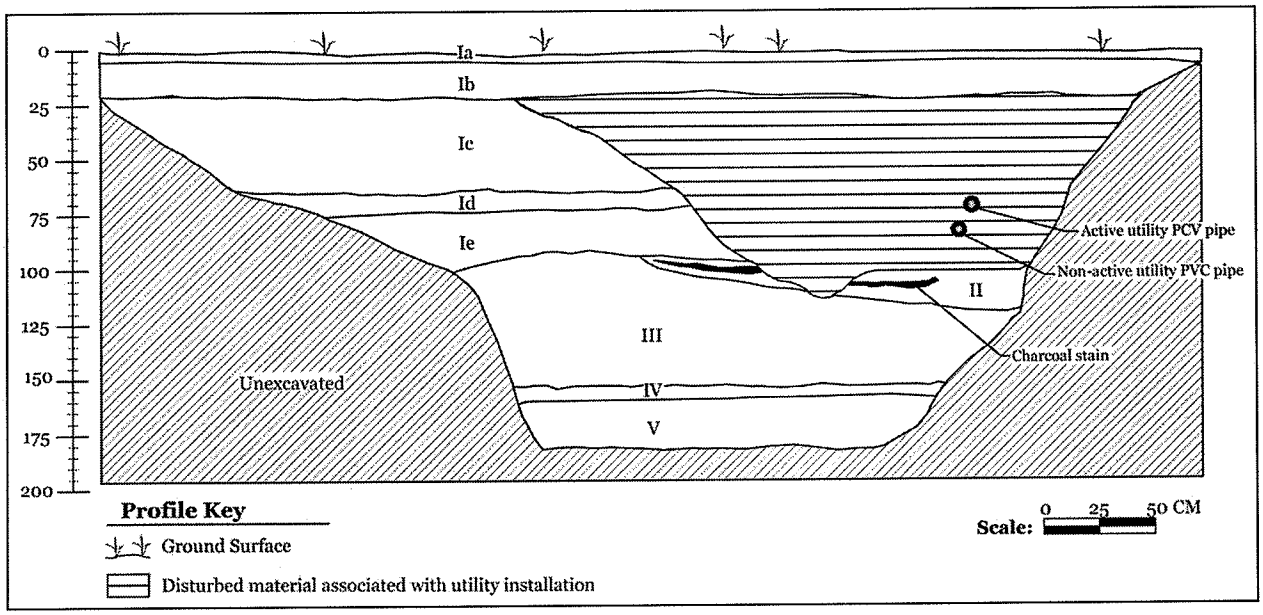


Figure A- 14.. Trench BT-14 east wall soil profile

Trench # BT-16

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-23 cmbs) Gravel base course

Stratum Ic (23-30 cmbs) Fill horizon; 10YR 3/2, very dark grayish brown silty loam; crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; no roots; compacted. No cultural material or features were observed.

Stratum Id (23-50 cmbs) Fill horizon; 10YR 4/2, dark grayish brown gravelly sandy clay; moderate crumb structure; fine to medium size; hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; no roots; compacted, No cultural material or features were observed.

Stratum Ie (47-60 cmbs) Fill horizon; 5YR 4/1, dark gray gravelly silt; strong, crumb structure; medium to coarse size; friable moist consistency; non plastic; weak cementation; terrigenous origin; no roots; compacted. No cultural material or features were observed.

Stratum If (50-70 cmbs) Fill horizon; 10YR 2/2, very dark brown gravelly sandy clay; strong, crumb structure; fine to medium size; friable moist consistency; slightly plastic; terrigenous origin; clear lower boundary; smooth topography; no roots; compacted. No cultural material or features were observed.

Stratum Ig (65-90 cmbs) Fill horizon; 2.5YR 3/4, dark reddish brown crushed cinder/silt; strong crumb structure; coarse to very coarse size; very hard dry consistency; non plastic; weak cementation;

terrigenous origin; clear lower boundary; smooth topography; no roots; No cultural material or features were observed.

Stratum II(83-167cmbs) B Horizon; 7.5YR 3/1 very dark gray stony gravelly silty clay; moderate crumb structure; fine size; friable moist consistency; slightly plastic; weak cementation; mixed origin; lower boundary not visible; no roots; 35-45% boulder inclusions This stratum is a possible alluvial deposit. No cultural material or features were observed.

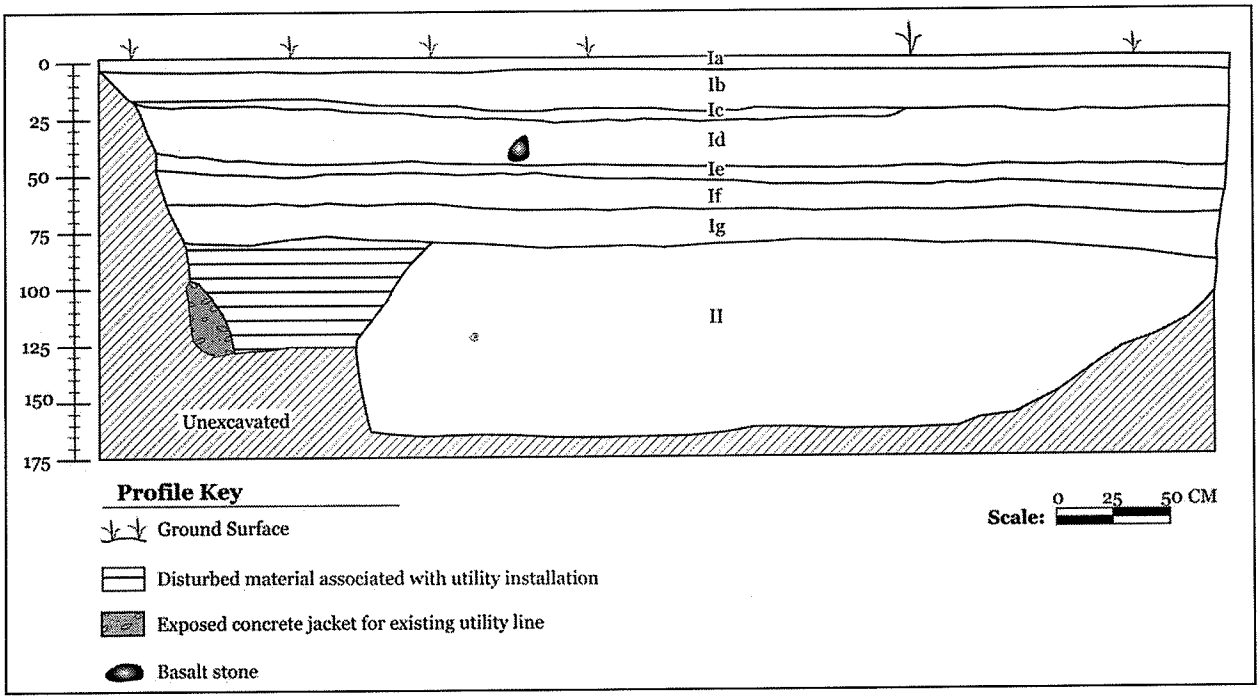


Figure A- 15.. Trench BT-16 east wall soil profile

Trench # BT-17

Soil Description

Stratum Ia (0-5 cmbs) Asphalt

Stratum Ib (5-27 cmbs) Gravel base course

Stratum Ic (25-65 cmbs) Fill horizon; 5YR 3/1, very dark gray gravelly sandy clay; strong blocky structure; fine to medium size; very hard dry consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; smooth topography; common fine to medium size roots. This stratum contains modern trash. No significant cultural material or features were observed.

Stratum Id (37-63 cmbs) Fill horizon; 10 YR 2/2, very dark brown gravelly sandy clay; strong crumb structure; medium size; very hard dry consistency; slightly plastic; weak cementation; mixed origin; abrupt lower boundary; broken/discontinuous topography; common medium size roots. This stratum contains modern trash. No cultural material or features were observed.

Stratum Ie (55-80 cmbs) Fill horizon; 2.5YR 3/3, dark reddish brown crushed cinder gravelly silt; strong crumb structure; medium to coarse size; firm moist consistency; non plastic; weak cementation; terrigenous origin; clear lower boundary; smooth topography; no roots; 80-90% gravel and cobble inclusions. No cultural material or features were observed.

Stratum If (75-107 cmbs) Fill horizon; 5YR 3/2, dark reddish brown stony sandy clay; moderate to strong crumb structure; fine to medium size; friable moist consistency; plastic; mixed origin; clear lower boundary; smooth topography; no roots. No cultural material or features were observed.

Stratum II(130-155 cmbs) B horizon; 7.5YR 3/1, very dark gray silty clay; moderate crumb structure; fine to medium size; friable moist consistency; slightly plastic; weak cementation; mixed origin; clear lower boundary; irregular topography; no roots. This stratum is likely an alluvial deposit. No cultural material or features were observed.

Stratum III(157-170cmbs) C Horizon; 5YR 2.5/1 black sandy loam; weak granular structure; fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; abrupt lower boundary; broken/discontinuous topography; no roots. This stratum is semi compacted with organic staining. No cultural material or features were observed.

Stratum IV(170 cmbs) C Horizon; 10YR 6/4 light yellowish brown sand; weak structureless single grain fine to medium size; loose moist consistency; non plastic; weak cementation; marine origin; lower boundary not visible; no roots. This stratum was observed at the bottom of trench but was not excavated. No cultural material or features were observed.

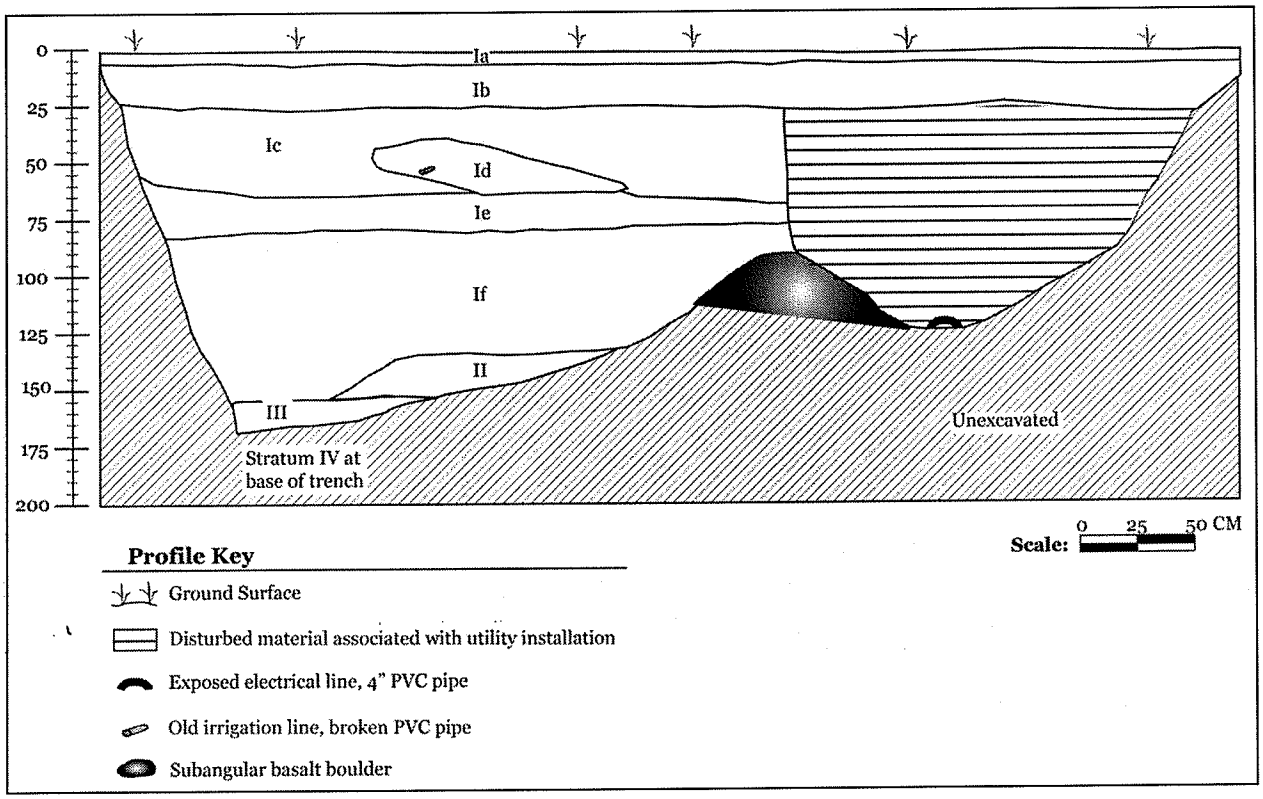


Figure A- 16. Trench BT-north wall soil profile

Appendix B GPR Report

Section 1 GPR Survey

1.1 Field Methods

1.1.1 Ground Penetrating Radar Survey

Ground-penetrating radar data is acquired by transmitting pulses of electromagnetic energy, in the radar frequency range, into the ground via a sending antenna. Each time a radar pulse encounters a material with a different density, electrical conductivity, or chemical composition, a portion of the radar energy will reflect back to the surface and be recorded via a receiving antenna. The remaining radar energy will continue to pass into the ground to be further reflected, until it finally dissipates with depth. Reflection features may include discrete objects, stratigraphic layering, or other subsurface anomalies such as subsurface disturbances associated with utility installation or human interment.

The effectiveness of GPR is highly dependent on local soil conditions. The penetration depth of GPR is determined by antenna frequency and the electrical conductivity of the earthen materials being profiled (Daniels, 2004). Soils having high electrical conductivity rapidly attenuate radar energy, restrict penetration depths, and severely limit the effectiveness of GPR (USDA NRCS GPR Methodology n. d.). The electrical conductivity of soils increases with increasing water, clay and soluble salt contents.

GPR suitability maps created by the National Resource Conservation Service (NRCS) were reviewed in an attempt to anticipate the predominant soil matrix within the project area and to assess the relative suitability of GPR application. Figure 1 shows the project area on the NRCS GPR Suitability Map for Hawai'i. The project area is shown to predominantly traverse lands within the low GPR suitability range. The NRCS provides the following discussion when defining their GPR suitability categories:

> Areas dominated by mineral soil materials with less than 10 percent clay or very deep organic soils with pH values < 4.5 in all layers have very high potential for GPR applications. Areas with very high potential afford the greatest possibility for deep, high resolution profiling with GPR. However, depending on the ionic concentration of the soil solution and the amounts and types of clay minerals in the soil matrix, signal attenuation and penetration depths will vary. With a 200 MHz antenna, in soils with very high potential for GPR, the effective penetration depth has averaged about 16.5 feet. However, because of variations in textural layering, mineralogy, soil water content, and the ionic concentration of the soil water, the depth of penetration can range from 3.3 to greater than 50 feet.
>
> Areas dominated by mineral soils with 18 to 35 percent clay or with 35 to 60 percent clay that are mostly low-activity clay minerals have moderate potential for GPR. Low activity clays are principally associated with older, more intensely weathered soils. In soils with moderate potential for GPR, the effective penetration depth with a 200 MHz antenna has averaged about 7 feet with a range of about 1.6 to 16 feet. Though penetration depths are restricted, soil polygons with moderate potential are suited to many GPR applications.
>
> Mineral soils with 35 to 60 percent clay, or calcareous and/or gypsiferous soils with 18 to 35 percent clay have low potential for GPR. Areas with low potential are very depth restrictive to GPR. In soils with low potential for GPR, the depth of penetration with a 200 MHz antenna has averaged about 1.6 feet with a range of about 0.8 to 6.5 feet.

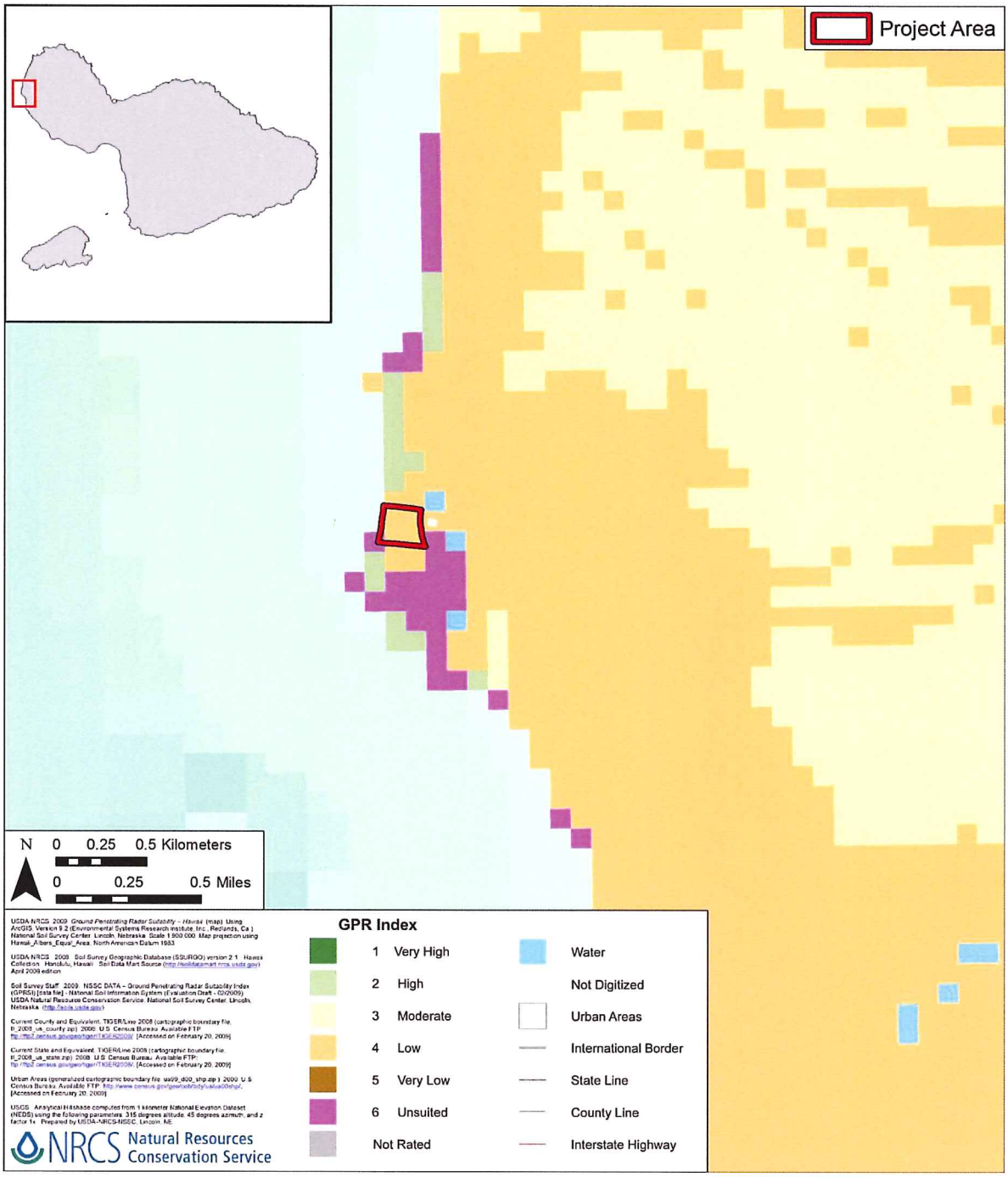


Figure 1. GPR suitability map (source: National Resource Conservation Service) showing the location of the study area

> Areas that are unsuited to GPR consist of saline and sodic soils. These soil map units are principally restricted to arid and semiarid regions and coastal areas of the United States. (USDA NRCS GPR Methodology n. d.)

Note that the estimated depth penetration by the NRCS is based on the use of a 200MHz antenna. The current survey will utilize a 400MHz antenna, which balances radar penetration depth with image resolution, so all projected depth estimates by the NRCS must be cut in half. Thus average depth penetration would be 3.5 feet (1 m) in moderate suitability areas and 0.8 feet (0.2 m) in low suitability areas.

1.1.1.1 Survey Methodology

The Ground Penetrating Radar (GPR) survey was be performed using a Geophysical Survey Systems, Inc. (GSSI) SIR-3000 system equipped with 400 MHz radar antenna moved along transects within a survey grid. Due to computer interpolation software (*Radan 7*; see Post-processing section below) it was only necessary to run data collection transects along one axis of each survey grid (X or Y). In order to standardize the data collection process all transects were run in the Y direction, originating from an arbitrary southwest corner (Figure 2). Transect spacing was set at an interval of 50 cm between scans.

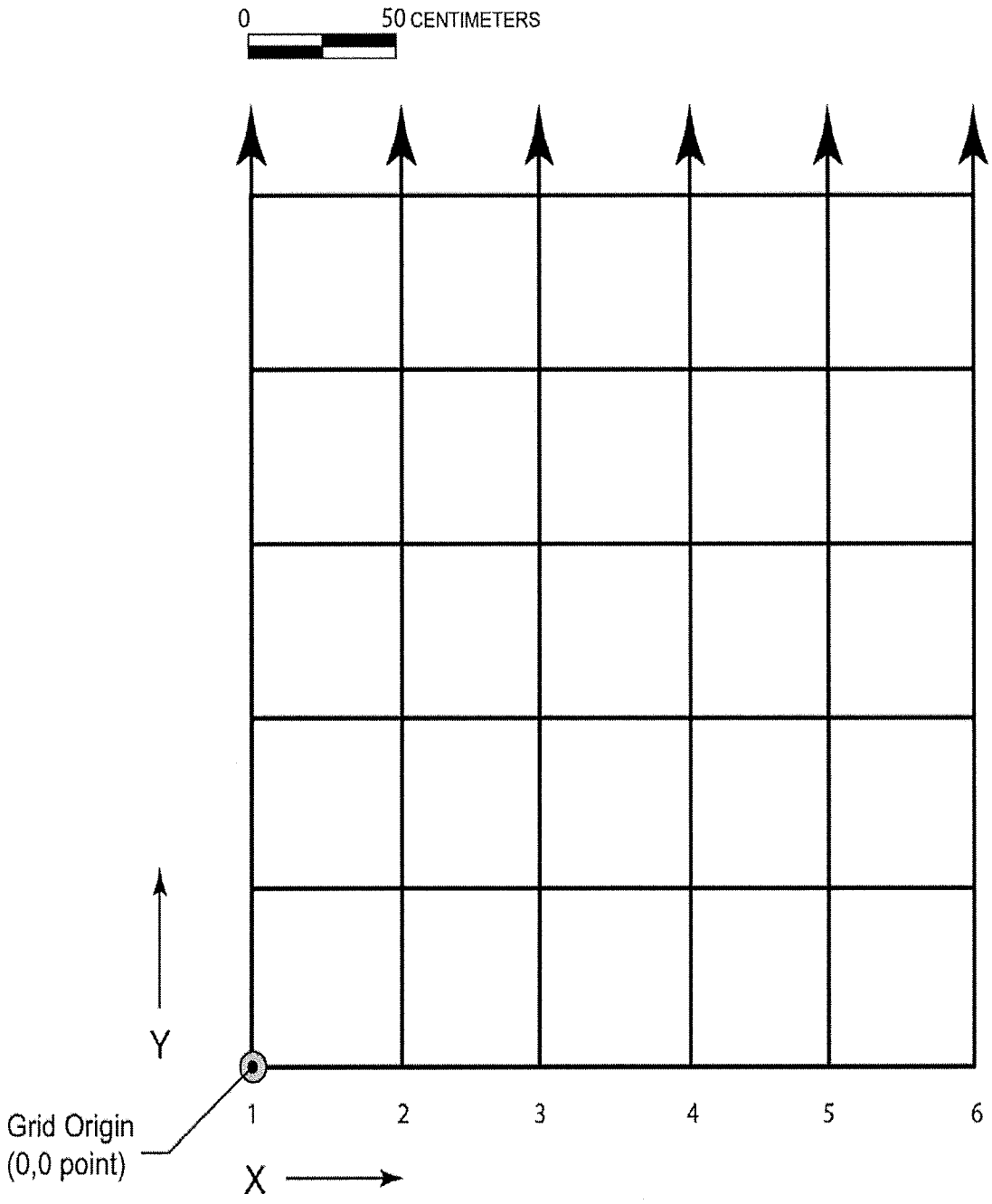


Figure 2. Transect alignment and spacing

1.1.1.2 Data Collection Parameters

GPR data collection parameters will be held constant throughout the survey (Table 1). However, a varying dielectric constant (The measurement of how well radar energy will be transmitted to depth.) may be used in anticipation of a complex stratigraphic sequence within the project area. USDA soil survey data indicates that Ewa Silty Clay Loam is the predominate soil type within the project area. This soil type is described as follows :

> ...well-drained soils in basins and on alluvial fans...[that] developed in alluvium derived from basic igneous rock... These soils are used for sugarcane, truck crops, and pasture. The natural vegetation consists of fingergrass, kiawe, koa haole, klu, and uhaloa. (Foote et al. 1972:29)

Table 1. GPR Data Collection Parameters

Parameter	Settings
Antenna	400 MHz
Transmission rate	100KHz
Samples	512
Format	16-bit
Range	40 nanoseconds
Dielectric	10.00
Rate	100
Scans per unit	40 per meter
Low Pass Filter	750MHz
High Pass Filter	200MHz

1.1.1.3 Post-processing

All collected radar data was post-processed using *RADAN 7*, which is an industry standard for GPR data processing.

RADAN 7 was utilized to generate two-dimensional depth profiles from the collected GPR data. These profiles illustrate the geometry of the reflections recorded during data collection. An analysis of these profiles can determine whether the radar energy is reflecting from a flat stratigraphic layer (seen as a distinct horizontal band on a profile), a discrete buried object (seen as a hyperbola in profile), or from stratigraphic irregularities such as subsurface disturbances associated with utility installation or human interment (also seen as hyperbolas, but usually are more ephemeral and consist of clustered reflections).

Position correction was utilized to remove unwanted surface "noise" from GPR profiles. High and low pass filters were applied to remove any excess background "noise" generated from nearby power lines, radio frequencies, etc. during data collection. Gain (signal amplification) was also applied to accent poorly defined or ephemeral reflection that are typically associated with subsurface cultural deposits.

RADAN 7 was also used to generate amplitude slice maps from the collected GPR data. Amplitude slice-maps are a three-dimensional tool for viewing differences in radar reflection amplitudes across a given surface at various depths. Amplitude slice-maps can be thought of as plan view maps or excavation level records that display GPR data at user defined depth intervals. Reflected radar amplitudes are of interest because they measure the degree of physical and chemical differences in buried materials, which in turn can indicate the presence of stratigraphic interfaces, descrete buried objects (i.e., basalt boulders, utility lines, burial caskets, etc.), or stratigraphic irregularties (i.e., subsurfaces anomalies associated with burial pits, fire pits, buried irrigation ditches, etc.). The amplitude slice maps are also important because they allow the visulization of radar reflections throughout the entire data set collected at a survey area at a given depth. This gives size and shape to collected radar reflections, which can aid in the interpretation of identified subsurface anomalies.

Amplitude slice-maps are generated through the comparison of radar reflection amplitudes recorded in vertical depth profiles, which corespond to individual transects collected within a survey grid along the X-axis (Note that while transects are collected in the Y-direction, they are actually located within the X-axis.). In this method, amplitude variations are analyzed at each location where a radar reflection was recorded. Reflection amplitude data from the X-axis is then use to interpolate reflection data on to the Y-axis.

Section 2 Results of Fieldwork

2.1 Ground Penetrating Radar

A GPR survey was conducted within the Westin Maui Master Improvements Project AIS study area prior to subsurface testing in an attempt to define the local stratigraphy and to prospect for buried cultural deposits. GPR survey grids were located in areas that may require construction related subsurface disturbance and were subsequently tested during the AIS. A total of 14 GPR survey grids were collected within the study area (Figure 3 and Figure 4). Due to obstacles from curbs, landscaping, and parked cars, the GPR survey grids were generally placed in the parking lot lanes. The survey grids ranged in size from 9.0 m by 9.0 m to 5.0 m by 115.0 m with 50 centimeter intervals between y axis profiles.

Depth profiles and amplitude slice maps were generated from collected GPR data in order to analyze radar reflection features that could include: discrete objects, stratigraphic layering, or other subsurface anomalies such as subsurface disturbances associated with utility installation or human interment. The depth profiles consist of a subsurface profile of the GPR data, illustrating the entire range of subsurface radar penetration that was possible during the survey. Amplitude slices are similar to plan view maps generated at selected defined depth intervals, and are useful for displaying the general shape and spatial distribution of recorded radar reflections associated with subsurface anomalies.

GPR Grid Locations

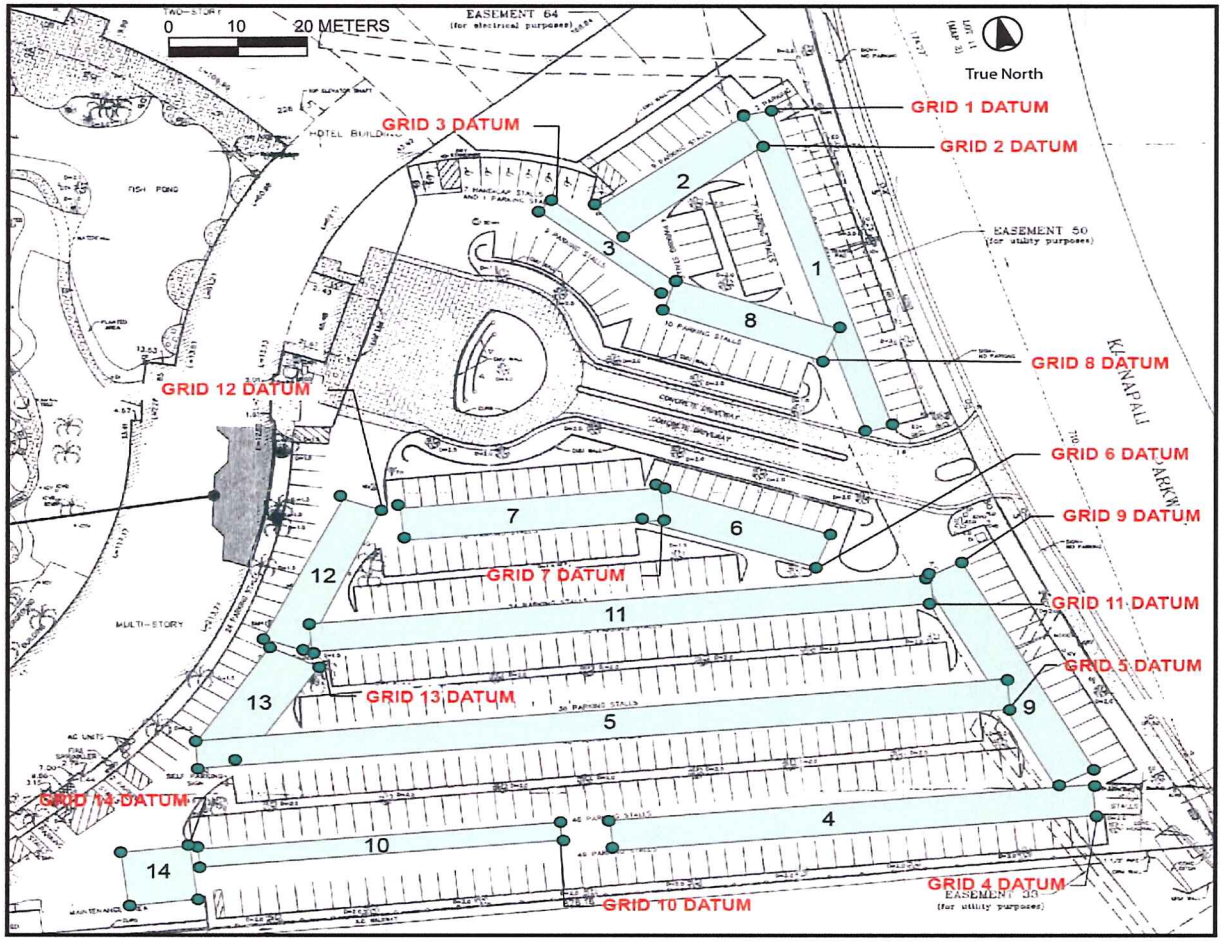


Figure 3. Plan view of GPR grid locations

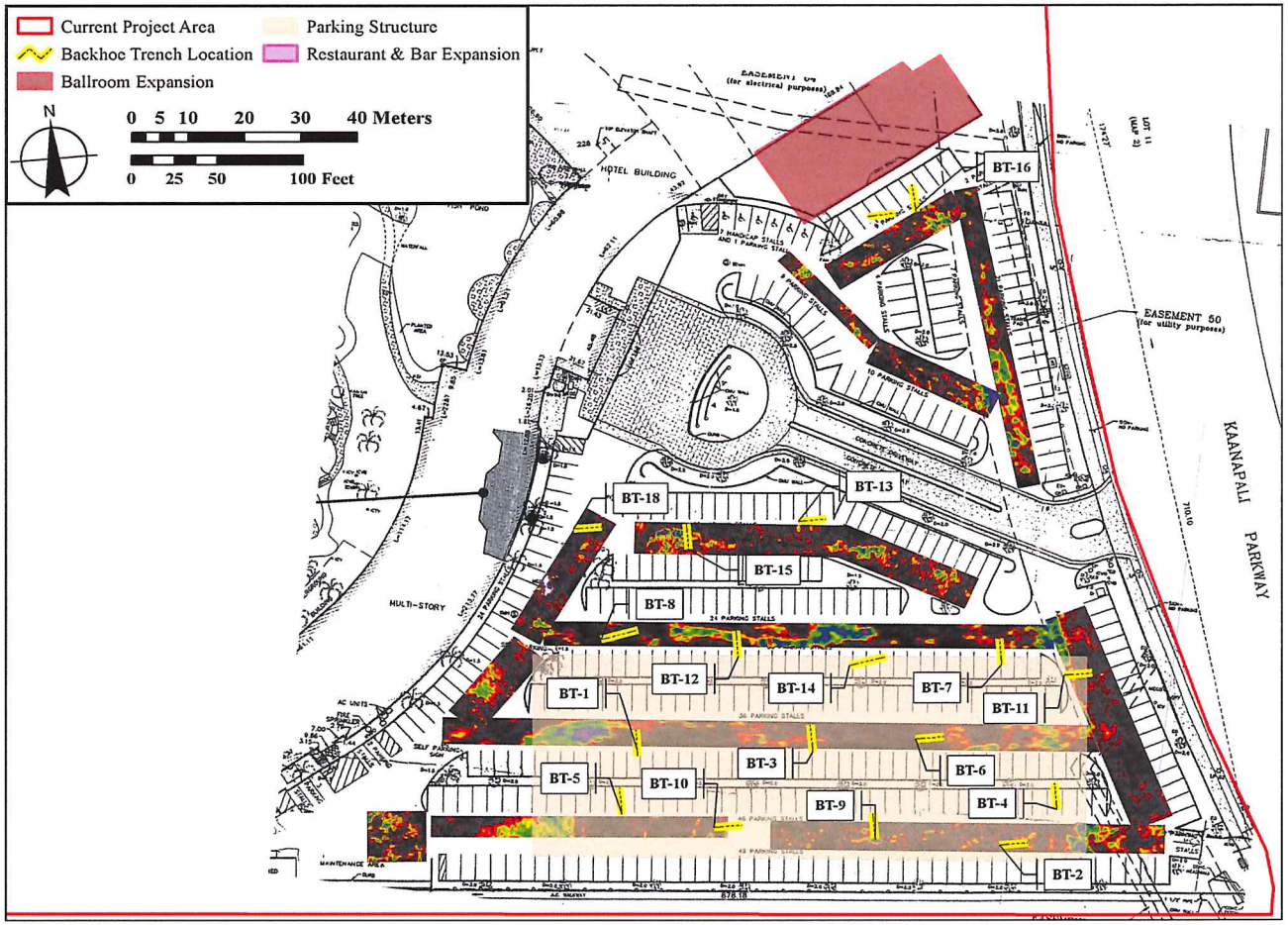


Figure 4. 1998 Westin Maui Resort & Spa Site Plan showing GPR time slice overlay at the 75cmbs interval in relation to backhoe test locations (BTs), red to lavender coloration indicates low to high reflectivity respectively (note that BT-13, -15, and -18 are not located within, or directly adjacent to, the proposed areas of direct effect and therefore not investigated during the current study).

2.1.1 Summary and Interpretation

In general, the GPR survey was successful as subsurface anomalies were able to be located and maximum depth "visibility" (i.e. radar wave penetration) reached approximately 120 cm below the surface. These results are better than expected as the NRCS indicated that the study area is situated within low GPR suitability areas and that radar depth penetration could be limited to 0.2 m is certain areas (see Methods discussion above; see Figure 2).

By combining the geo-referenced GPR slice maps onto a mosaic overlaying the project area, semi-linear patterns, which seemed to crosscut the entire project area, were observed. At the 25 cmbs depth interval (Figure 5), a few medium reflectivity linear signal patterns are noted and may be associated with shallow roots or utilities. At the 75 cmbs depth interval (Figure 6), a few highly reflectivity linear signal patterns are noted and may be associated with utilities, areas of greater soil compaction, or buried discrete objects (large rocks, old foundations, etc.). Most of these anomalous linear patterns were not "ground-truthed" in an effort to avoid utilities and tree roots. However, a few test units were placed in areas that intersected distinct signal patterns and the following is a couple of examples of what was encountered during excavation of these test units.

BT-3 was located in an area transecting a linear feature observed on the 25 cmbs depth interval slice map in the southern and central portion of survey Grid 05 (Figure 5). During subsequent excavation of the test unit, a large subangular basaltic boulder was encountered at the approximate depth and coordinates of the anomalous GPR reading. The boulder was located in a compacted fill and showed no sign of cultural deposits associated with the layer. Large boulders are highly signal reflective and commonly observed in GPR profile data. The extending and linear nature of the anomalous signal pattern, as it seems to align throughout a few connecting signal transects, suggest that the boulder may represent an alignment with other like-sized boulders. This alignment is unsubstantiated as no other test units were placed in the vicinity of the signal pattern.

Test excavation B-10 was located in an area that transected a liner signal pattern observed on the 75 cmbs slice map within the central portion of Grid 11 (Figure 6). The signal pattern shows high reflectivity and is continuous throughout much of the survey grid. Excavation results revealed that a very large basaltic boulder greater than one meter in diameter was located at the approximate depth and coordinates of the anomalous GPR reading. The boulder was located in a fill deposit with no cultural material observed. Similar to the boulder observed in BT-3, the anomalous signal pattern may represent a subsurface alignment of boulders. This alignment is also unsubstantiated as no other test units were placed in the vicinity of the signal pattern.

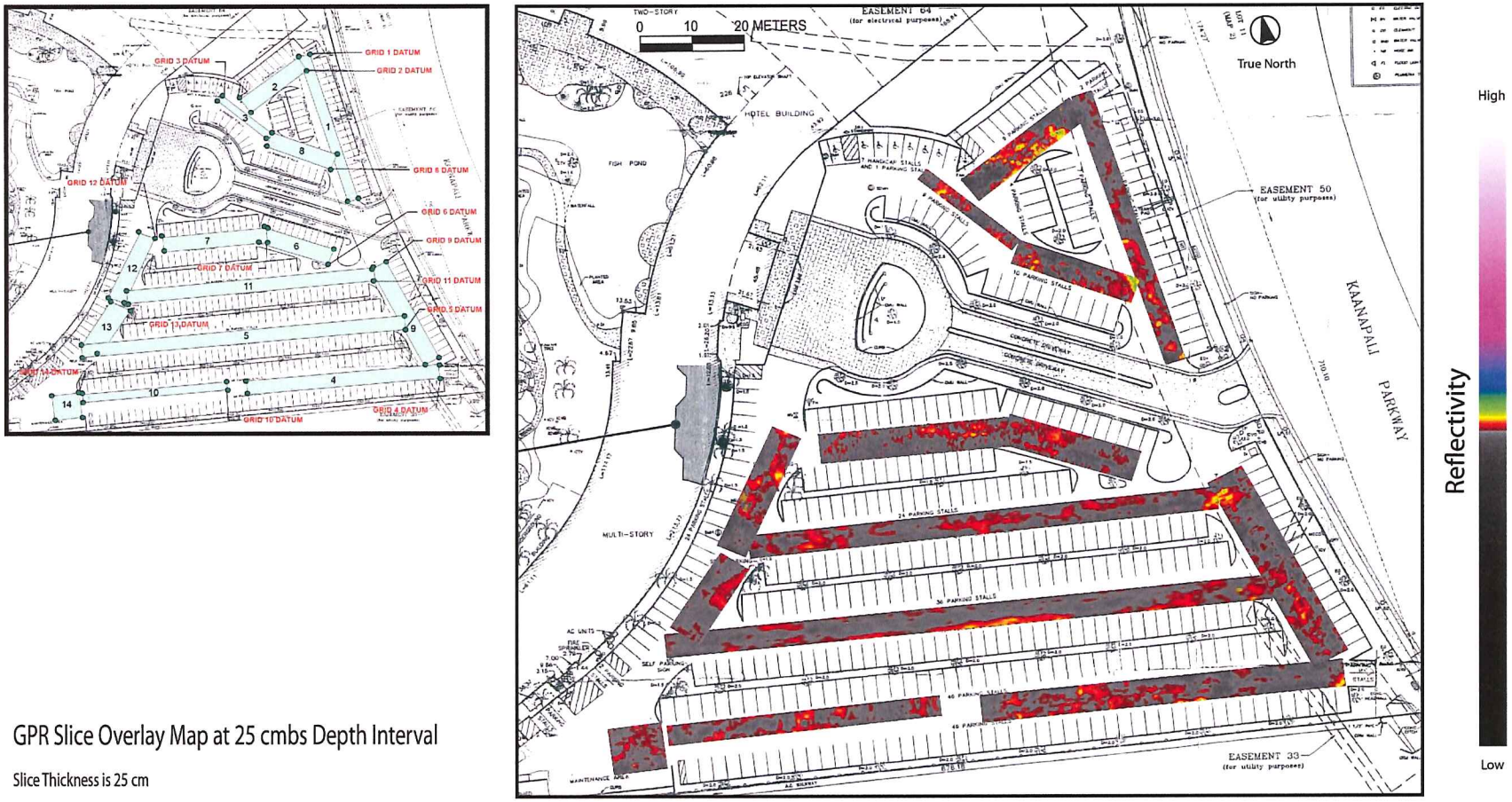
It is likely that the anomalous signal patterns observed in the GPR slice maps represent boulder concentrations associated with historic grading and filling events. Basaltic boulders were observed in several other test units occurring at very similar depths (75-100 cmbs) including: BT-4 through BT-8, BT-10, BT-12, BT-16, and BT-17. The consist depth and high frequency of the boulders encountered during excavation reinforces the idea that the highly reflective signal patterns observed in the GPR slice maps, occurring at the same approximate depth, directly correspond to the boulder locations. Potential linear alignments of the boulders

may be the result of push–piles or other apparitions formed during historic grading and filling of the property.

Concerning study area stratigraphy, GPR depth profiles indicated that the soils within the survey area consist of a complex variation of fill layers with varying densities and chemical composition. This was indicated thru the presence of horizontal banding, commonly associated with stratigraphic layering, observed at various depth intervals throughout the project area. Subsurface testing conducted throughout the study area revealed the presence of naturally deposited sediments averaging around 80 to 90 cm below the existing surface. These findings indicate that the vast majority of observed subsurface anomalies within the GPR survey area are associated with imported fill deposits.

The project area is highly disturbed from historic agricultural and housing/hotel developments. Most of the natural *in-situ* sediment deposits have been heavily truncated and no significant cultural deposits or material was encountered during excavation of the test units. No GPR signal anomalies were noted in the data that might potentially represent human burials and no burials were encountered during test unit excavations. With the exception of the many basaltic boulders encountered, no additional discrete objects, other than a few isolated utilities missed by the GPR, were observed in the GPR data or subsequent excavations. The few utilities not located by the GPR within BT-2 and BT-8 were small PVC pipes in compacted fill. This type of utility, without distinct trench back-fill sediments associated with the utility, is very difficult to resolve with the GPR.

Overall, the GPR survey provided useful information prior to excavation and when coupled with the results of the test excavations, increased the level of understanding for the project area. This study also demonstrates that in areas that are considered less suitable for GPR according to the NRCS (Figure 1), useful information is still attainable that can help gain a greater resolution of the study area.



GPR Slice Overlay Map at 25 cmbs Depth Interval

Slice Thickness is 25 cm

Figure 5. GPR slice overlay map at 25 cmbs depth interval

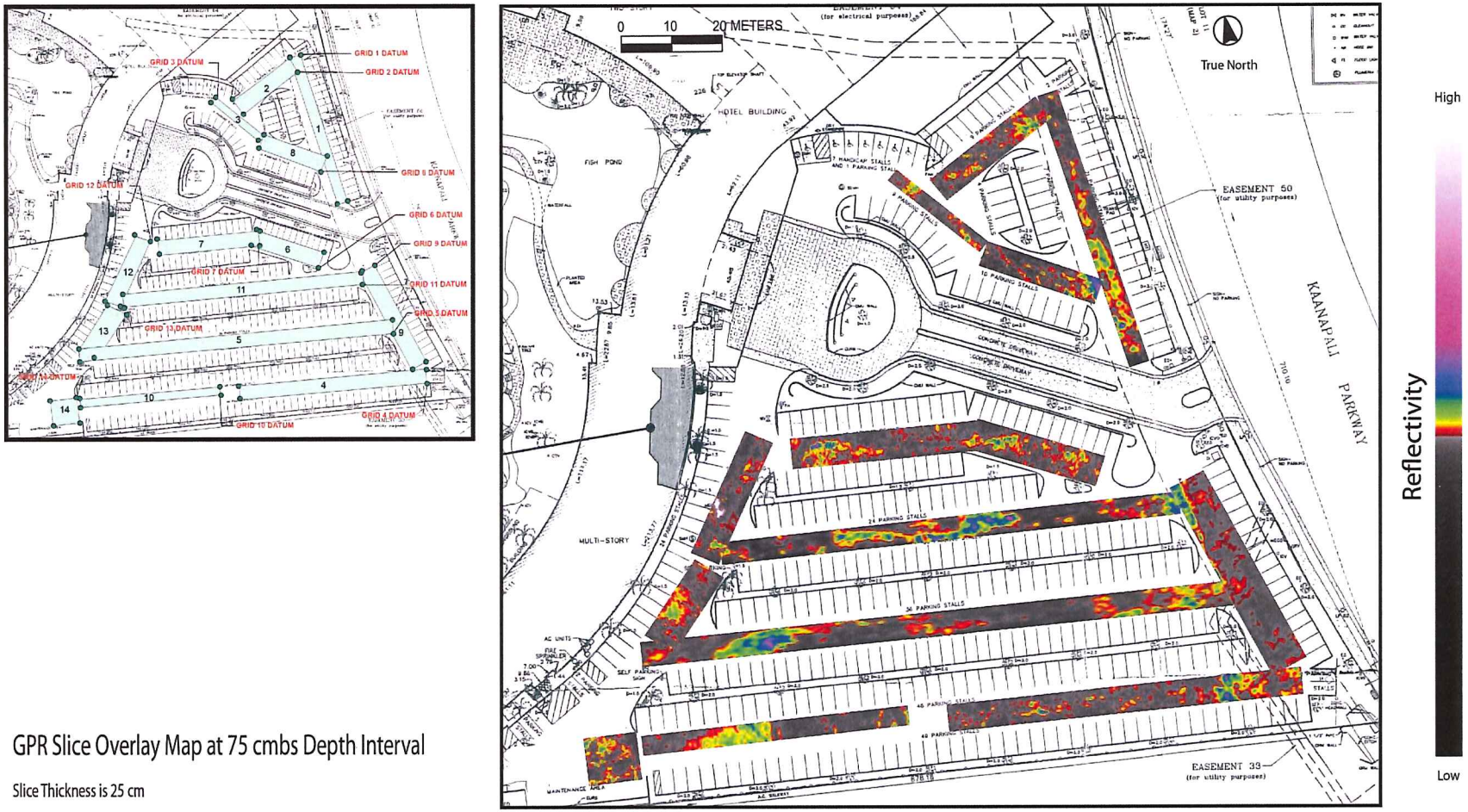


Figure 6. GPR slice overlay map at 75 cmbs depth interval

2.1.2 GPR Data Analysis

Survey Grid 01

Survey Grid 01 was located in the northwestern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 4 m by 57 m and included 8; 57 m long transects spaced 50 cm apart. No test units were placed within Grid 01.

A review of amplitude slice maps for Grid 01 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 7).

GPR depth profiles for Grid 01 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 8). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

Survey Grid 02

Survey Grid 02 was located in the Northern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 27 m and included 12; 20 m long transects spaced 50 cm apart. Test excavation BT-16 was located in the immediate vicinity of Grid 02 (Figure 4).

A review of amplitude slice maps for Grid 02 displayed a linear feature occurring between 15 m and 20 m from the origin of the survey grid. This signal feature could be attributed to a utility or a large tree root. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 9).

GPR depth profiles for Grid 02 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 10). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. An anomalous hyperbolic reflection was observed at 16 m from the survey grid origin and occurred at a depth of 60 cmbs. This anomaly corresponds to the linear feature observed in the slice maps and is likely a tree root or utility. The maximum depth of clean signal return was approximately 125 cmbs.

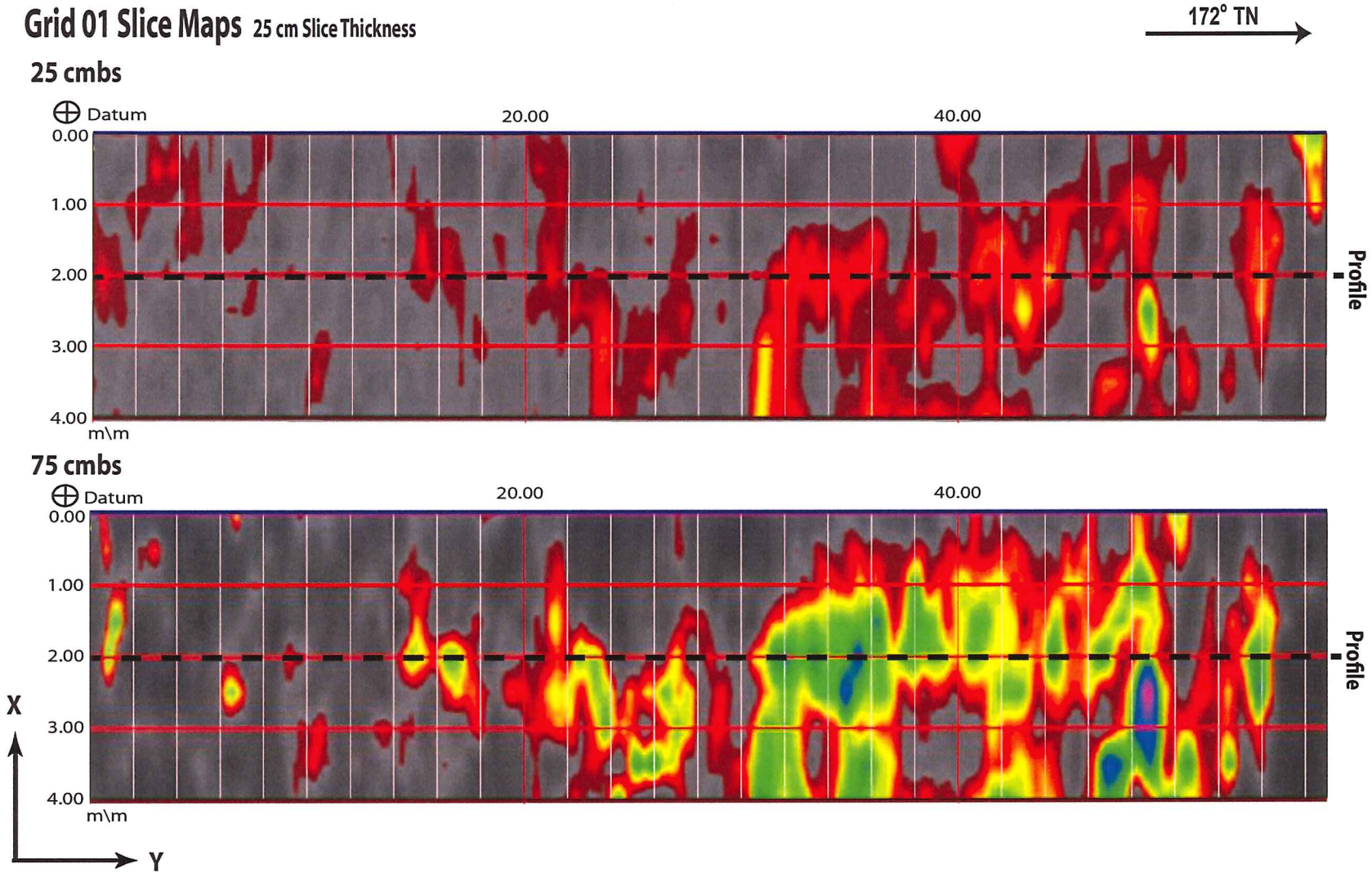


Figure 7. Grid 01 slice maps

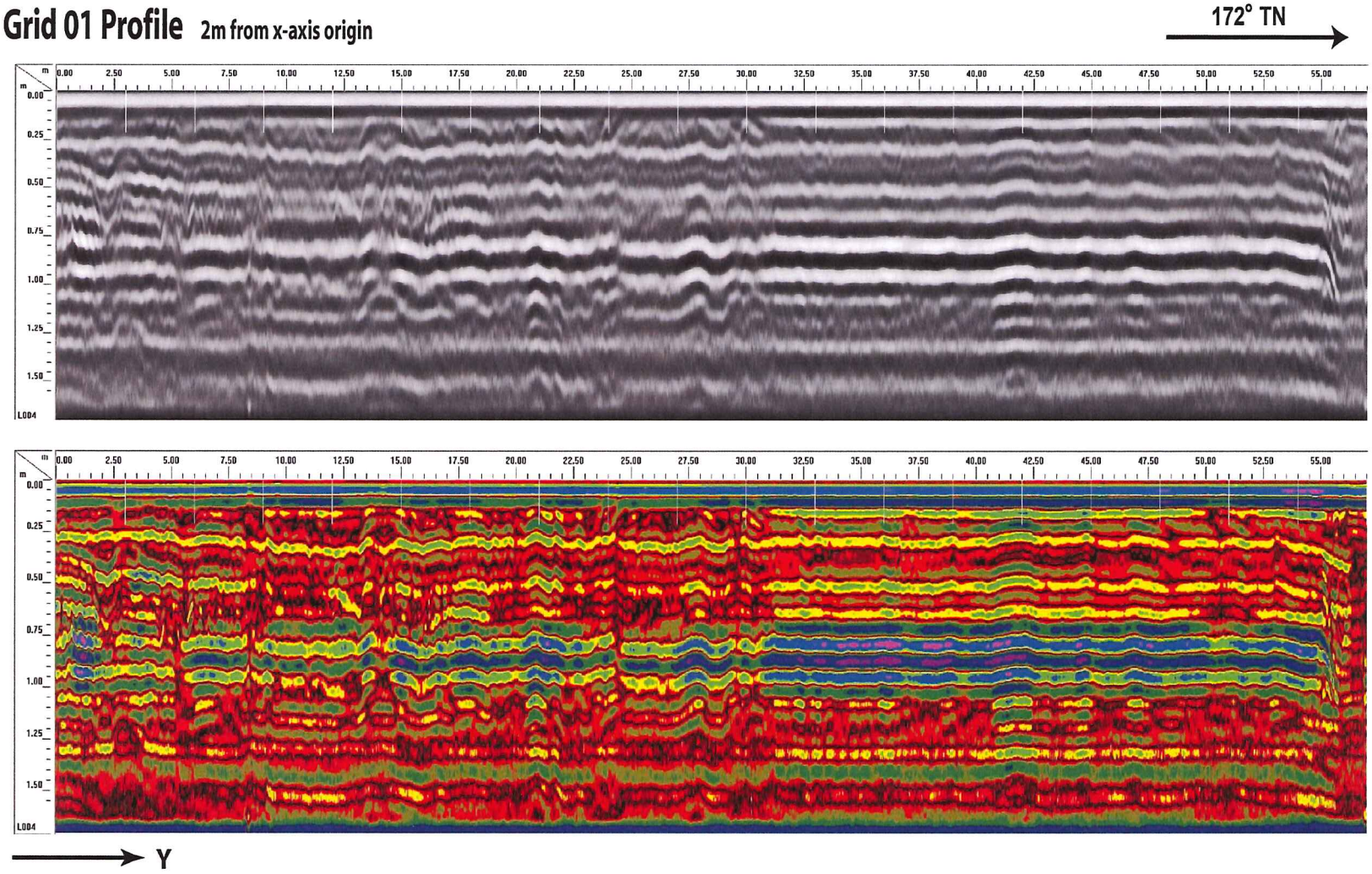


Figure 8. Grid 01 profile

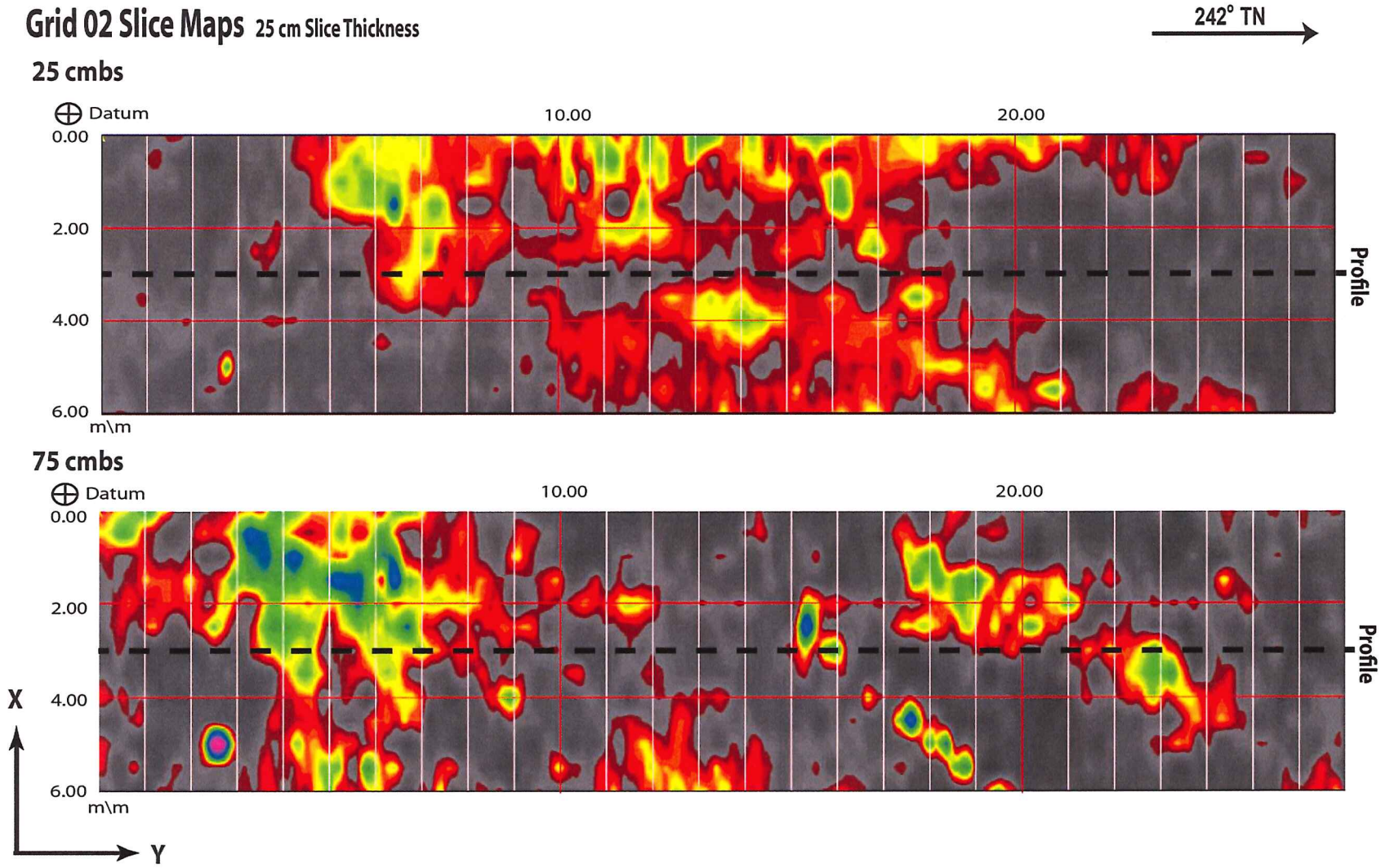


Figure 9. Grid 02 slice maps

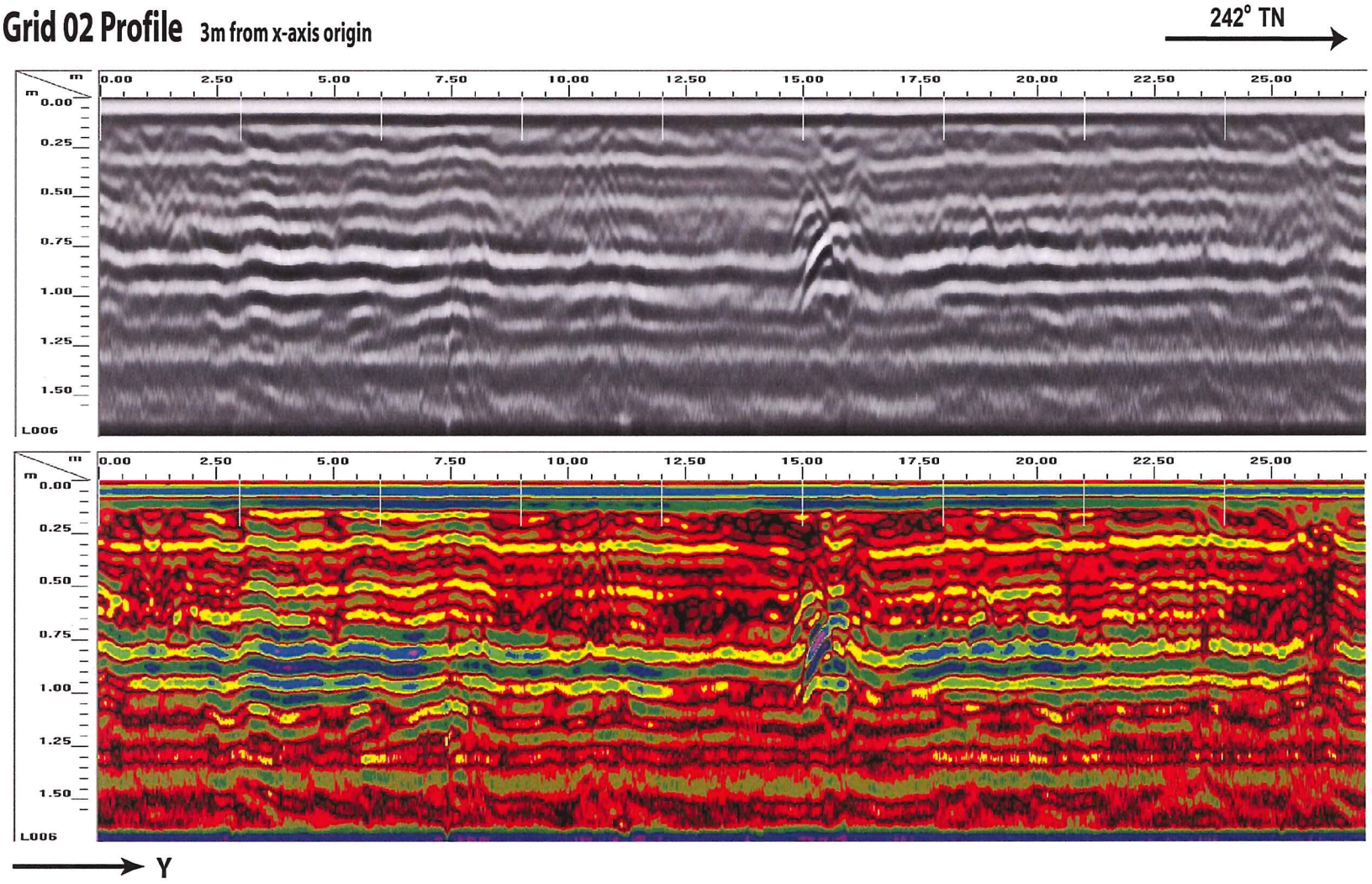


Figure 10. Grid 02 profile

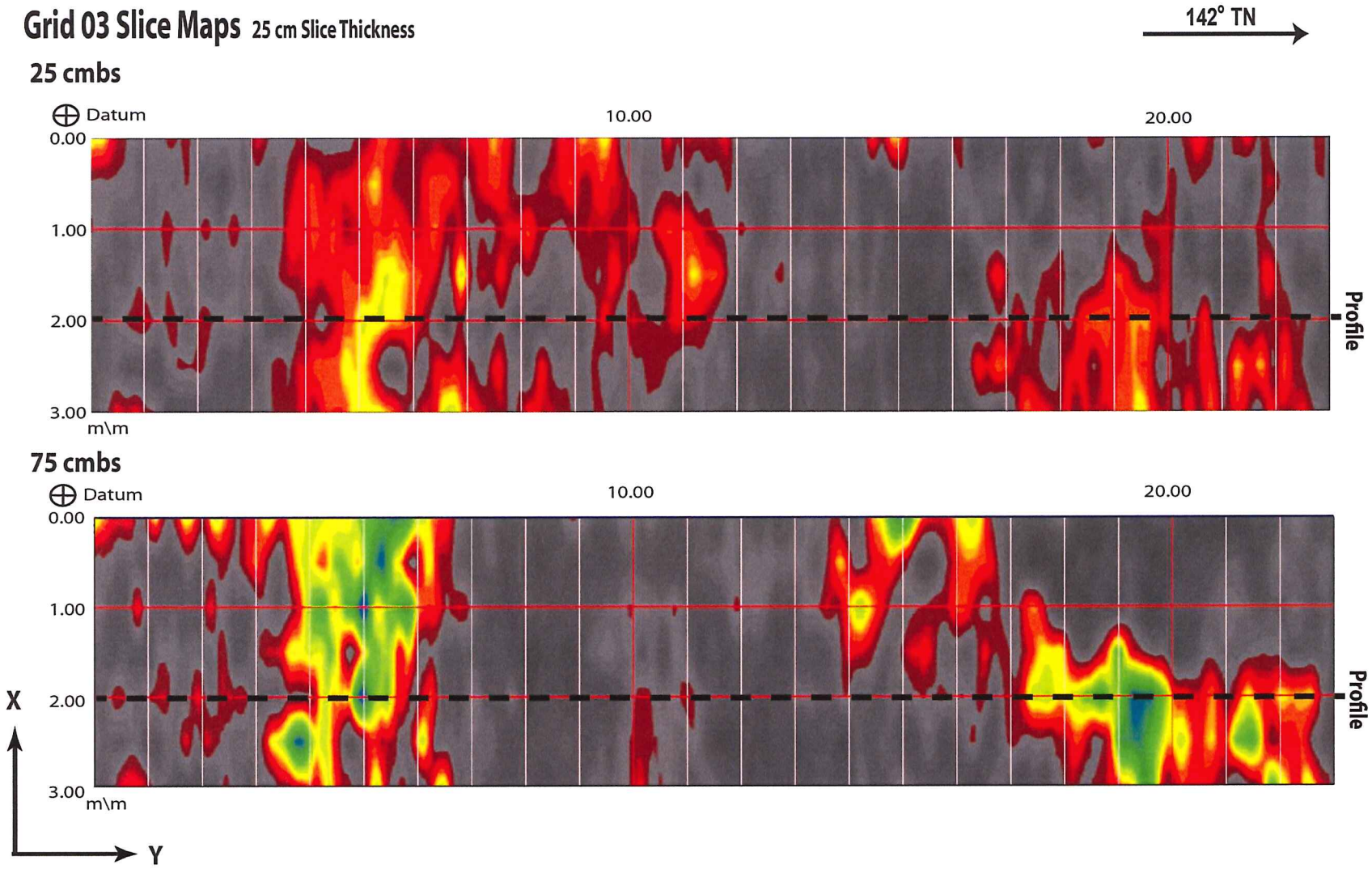


Figure 11. Grid 03 slice maps

Survey Grid 03

Survey Grid 03 was located in the northern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 3 m by 23 m and included 6; 23 m long transects spaced 50 cm apart. No test units were placed in the immediate vicinity Grid 03.

A review of amplitude slice maps for Grid 03 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 80 cmbs (Figure 11).

GPR depth profiles for Grid 03 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 12). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 80 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

Survey Grid 04

Survey Grid 04 is located in the southern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 70 m and included 12; 70 m long transects spaced 50 cm apart. Test excavations BT-2 and BT-9 were located within Grid 02 (Figure 4).

A review of amplitude slice maps for Grid 04 displayed a linear feature occurring between 12 m and 17 m from the origin of the survey grid. This signal feature could be attributed to a utility or a change in sediment associated with a utility trench. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 13).

GPR depth profiles for Grid 04 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 14). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. An anomalous hyperbolic reflection was observed centered at 16 m from the survey grid origin and occurred at a depth of 30-75 cmbs. This anomaly corresponds to the linear feature observed in the slice maps and is likely a utility. The maximum depth of clean signal return was approximately 125 cmbs.

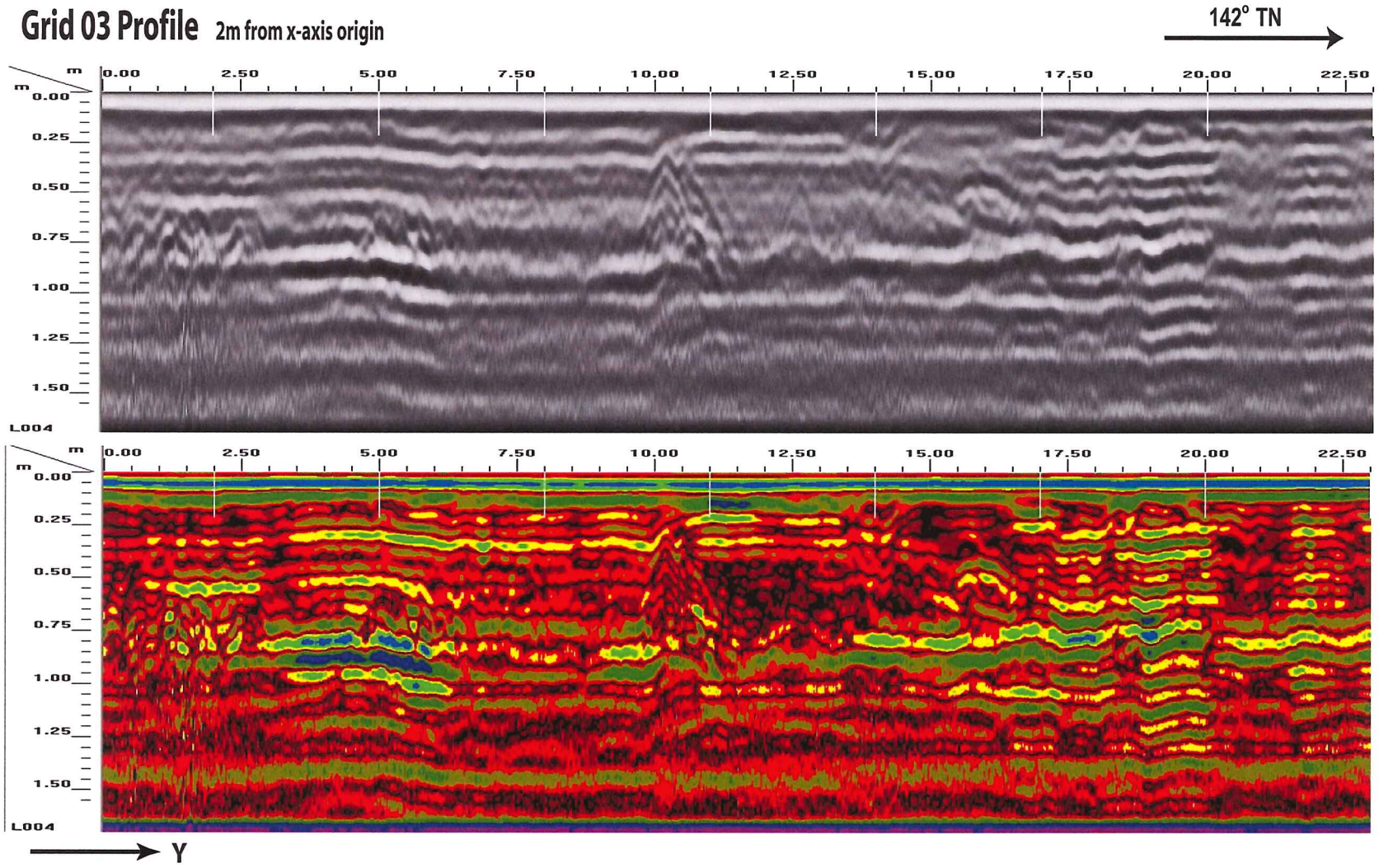


Figure 12. Grid 03 profile

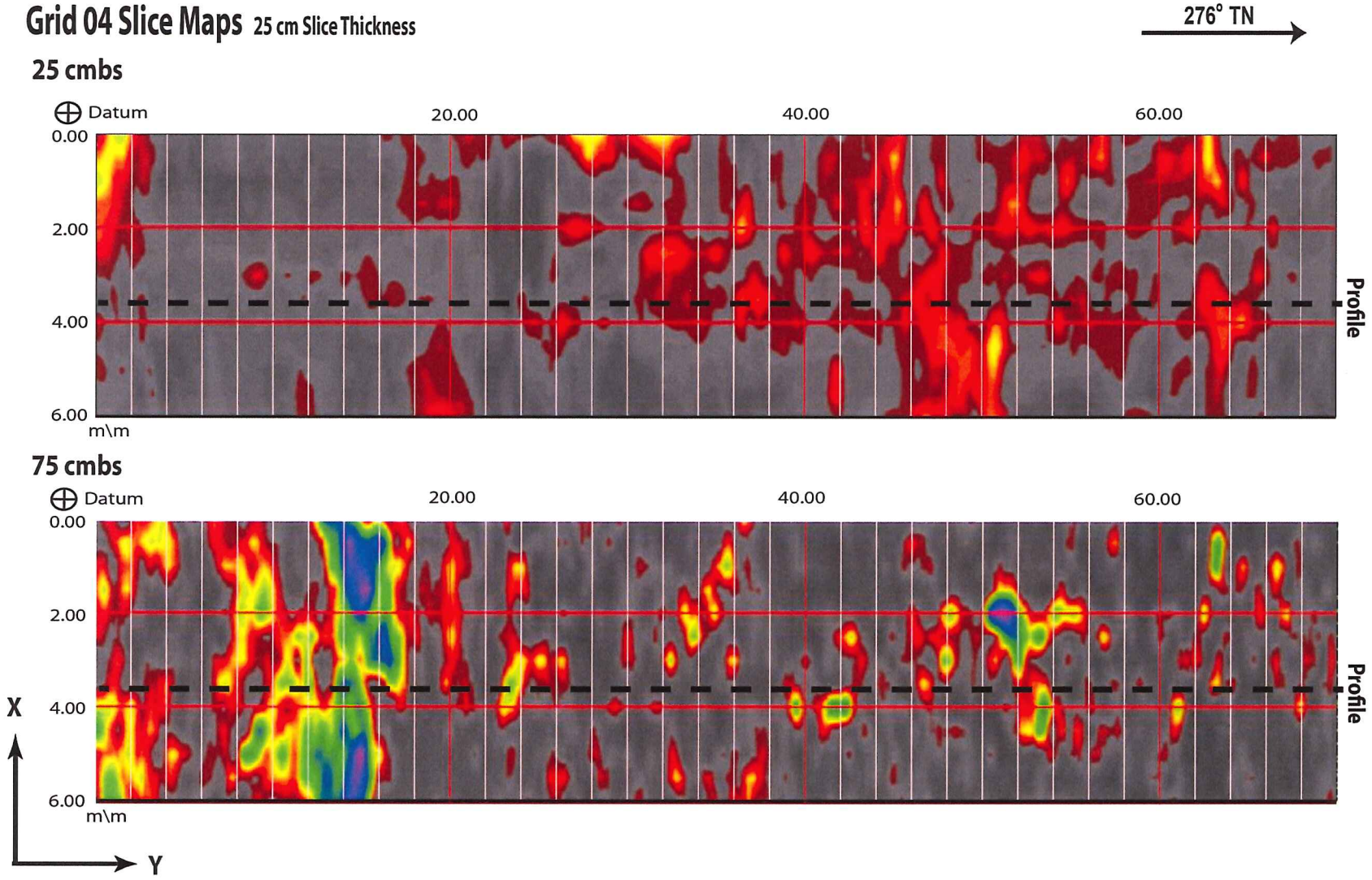


Figure 13. Grid 04 slice maps

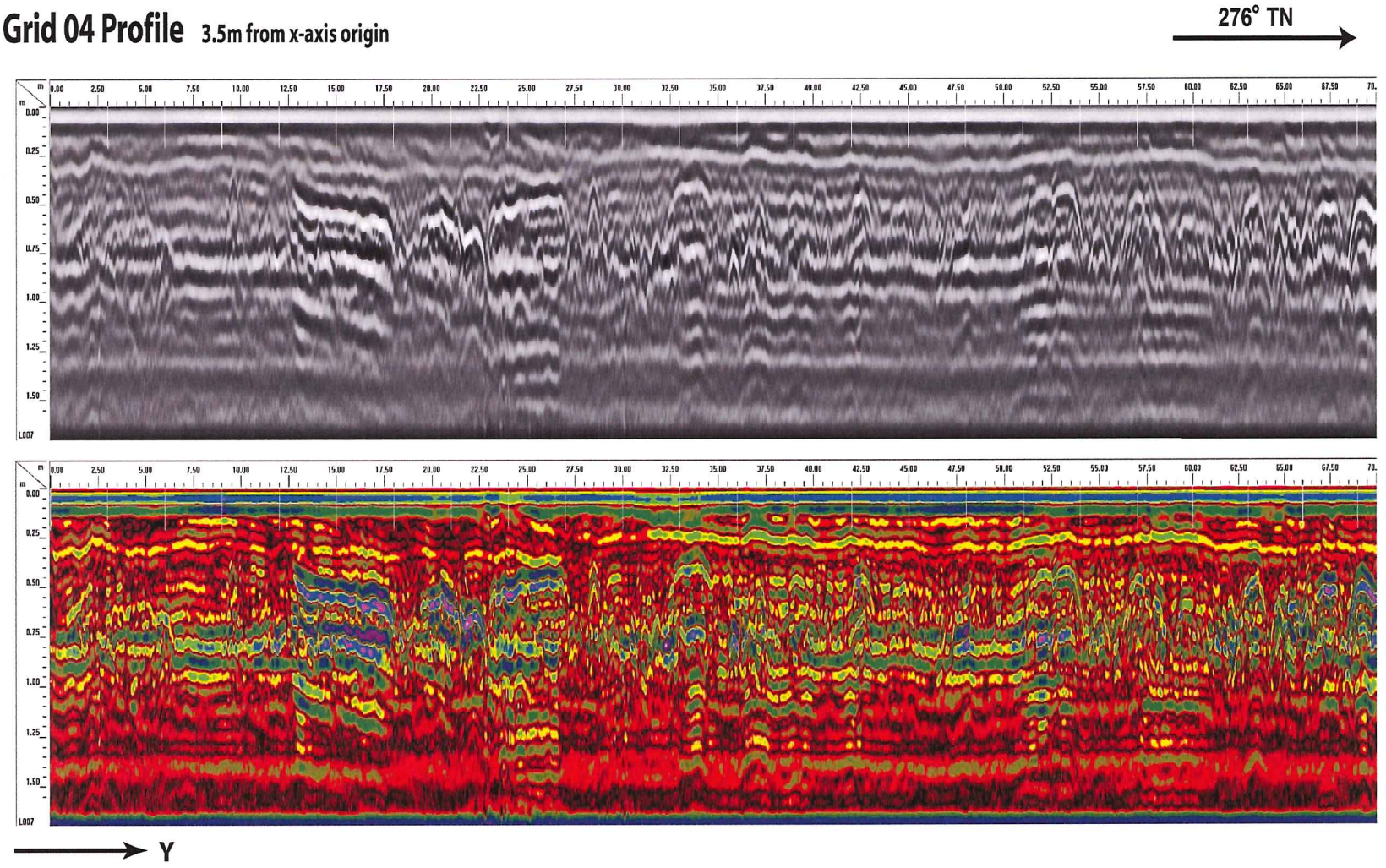


Figure 14. Grid 04 profile

Survey Grid 05

Survey Grid 05 was located in the central portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 5 m by 115 m and included 10; 115 m long transects spaced 50 cm apart. Test excavations BT-1, BT-3, and BT-6 were located within Grid 05 (Figure 4).

A review of amplitude slice maps for Grid 05 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 80 cmbs (Figure 15).

GPR depth profiles for Grid 05 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 16). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 60 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

Survey Grid 06

Survey Grid 06 was located in the central portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 26 m and included 12; 26 m long transects spaced 50 cm apart. No test units were placed in the immediate vicinity Grid 06.

A review of amplitude slice maps for Grid 06 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 17).

GPR depth profiles for Grid 06 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 18). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 80 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

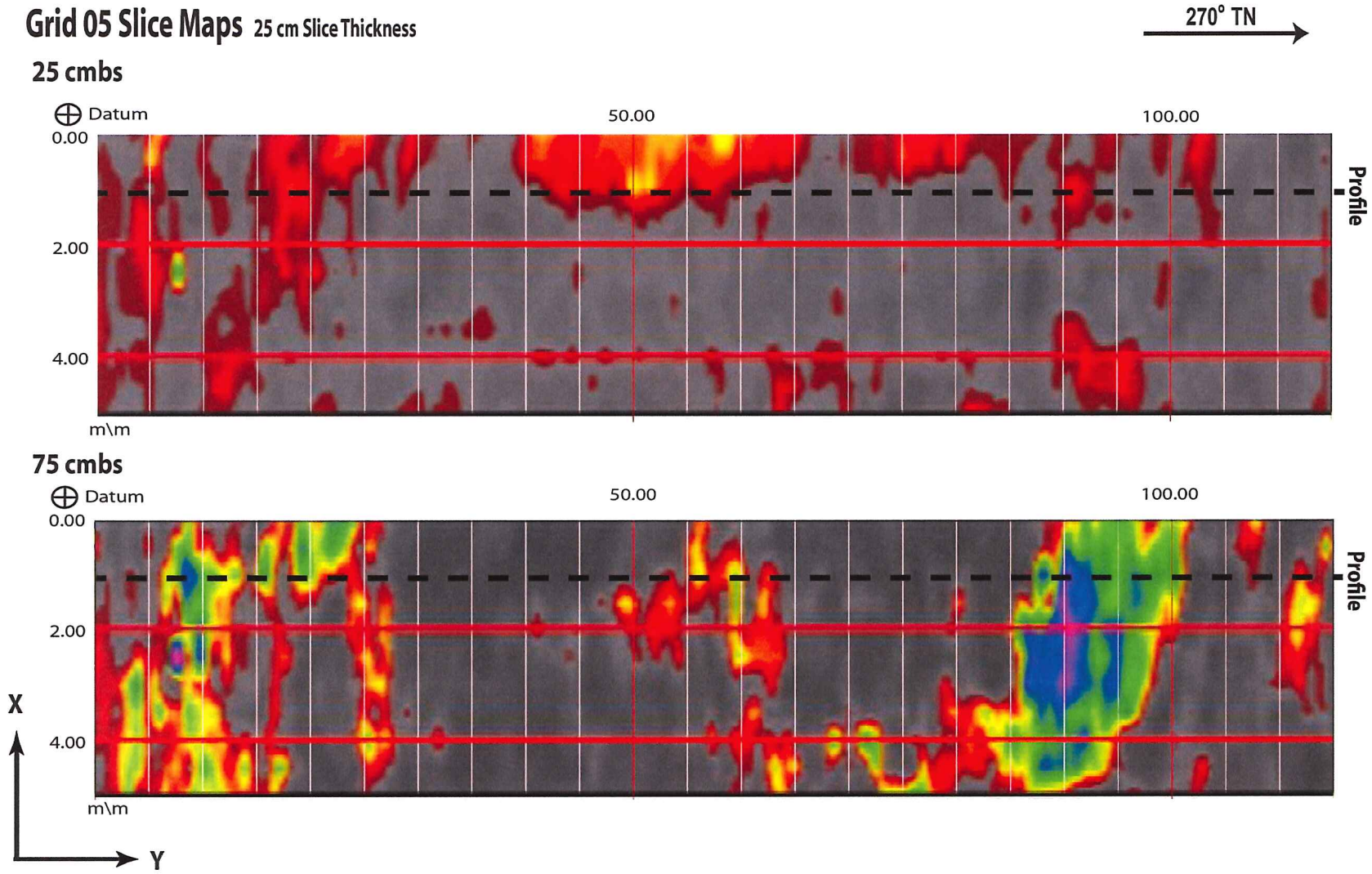


Figure 15. Grid 05 slice maps

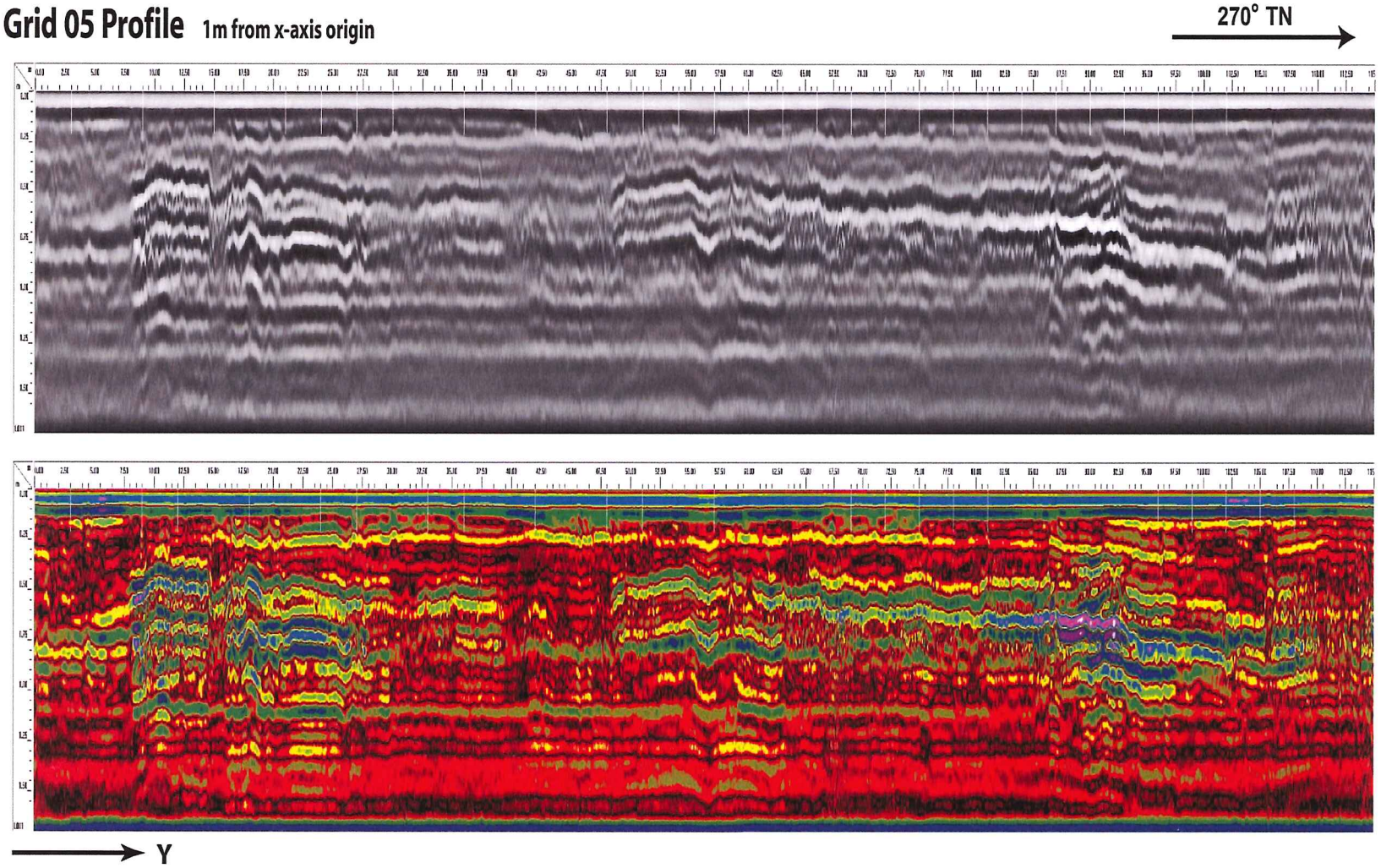


Figure 16. Grid 05 profile

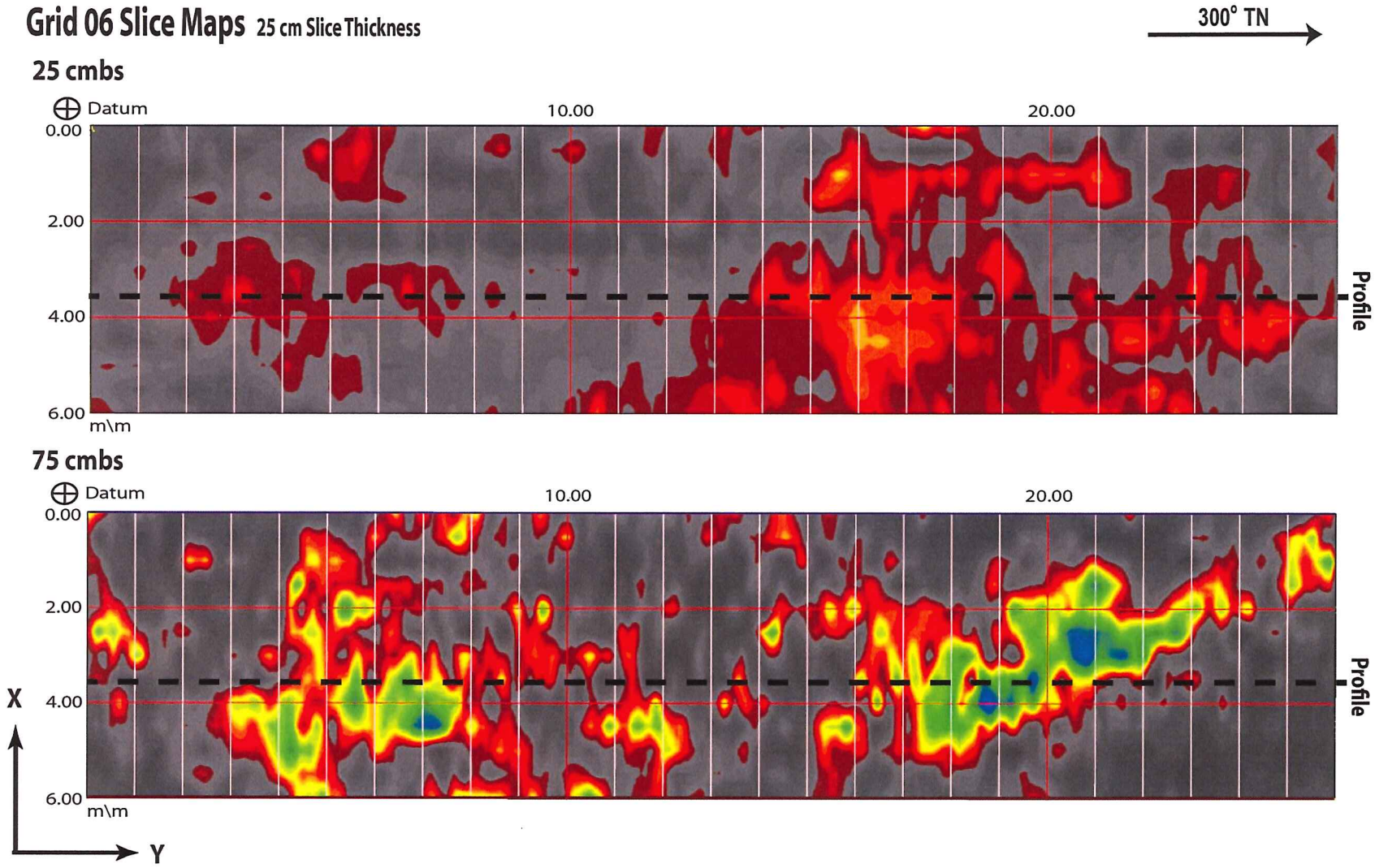


Figure 17. Grid 06 slice maps

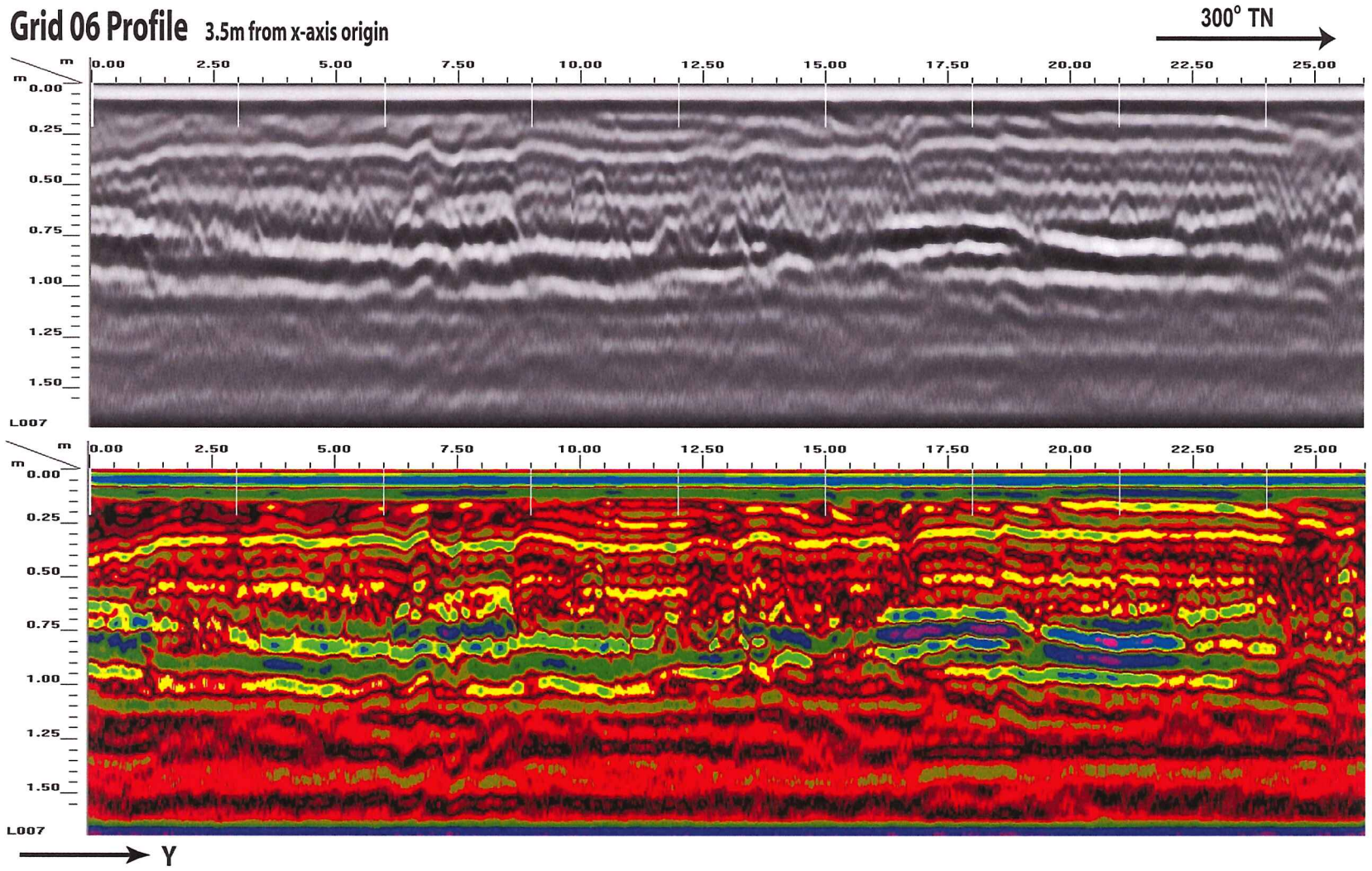


Figure 18. Grid 06 profile

Survey Grid 07

Survey Grid 07 was located in the central portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 38 m and included 12; 38 m long transects spaced 50 cm apart. Test excavation BT-13 was located in the immediate vicinity of Grid 07 and BT-15 was located within Grid 07 (Figure 4).

A review of amplitude slice maps for Grid 07 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 19).

GPR depth profiles for Grid 07 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 20). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 80 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

Survey Grid 08

Survey Grid 08 was located in the Northeastern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 24 m and included 12; 24 m long transects spaced 50 cm apart. No test units were placed in the immediate vicinity Grid 08.

A review of amplitude slice maps for Grid 08 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 21).

GPR depth profiles for Grid 08 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 22). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

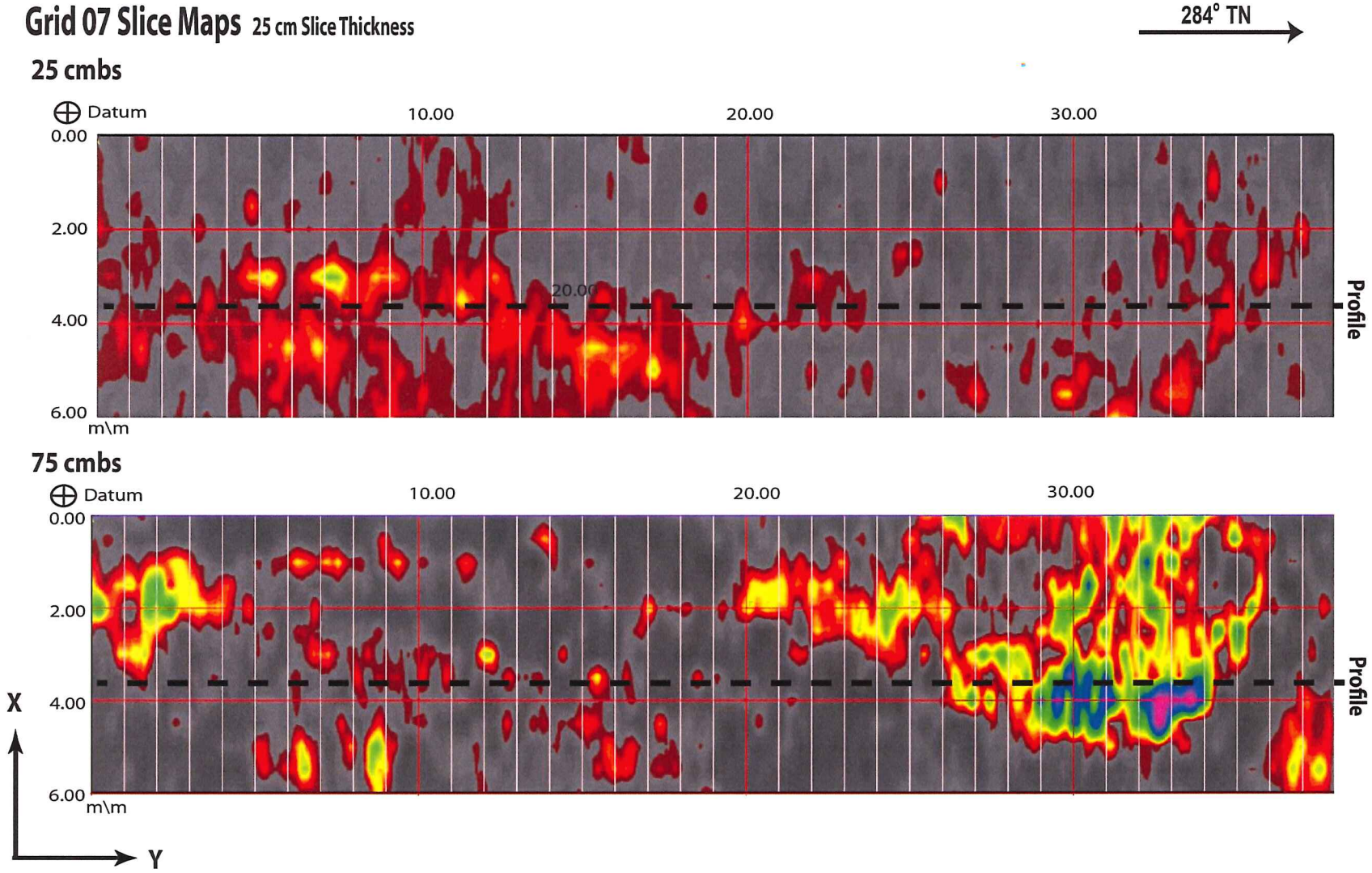


Figure 19. Grid 07 slice maps

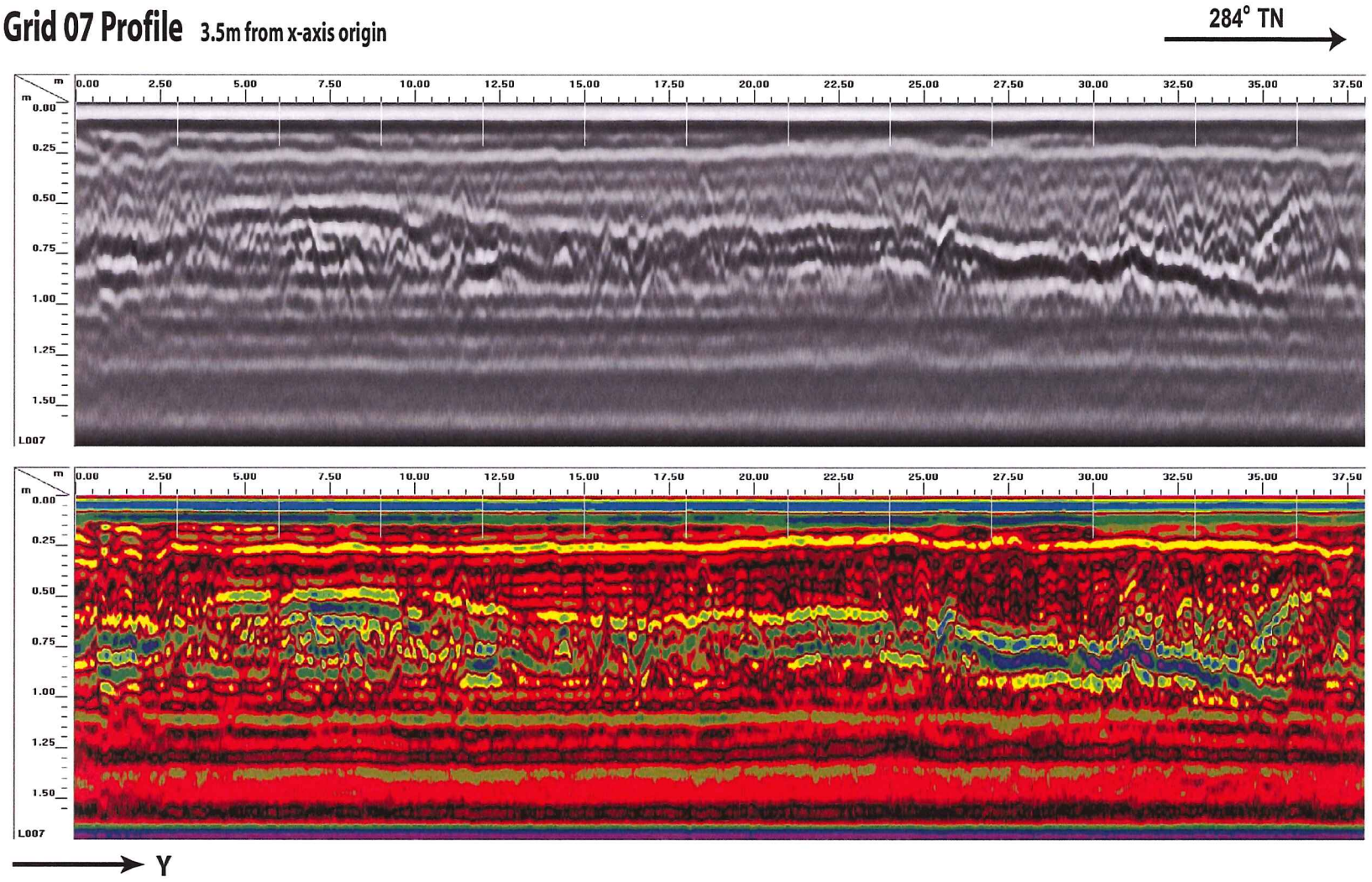


Figure 20. Grid 07 profile

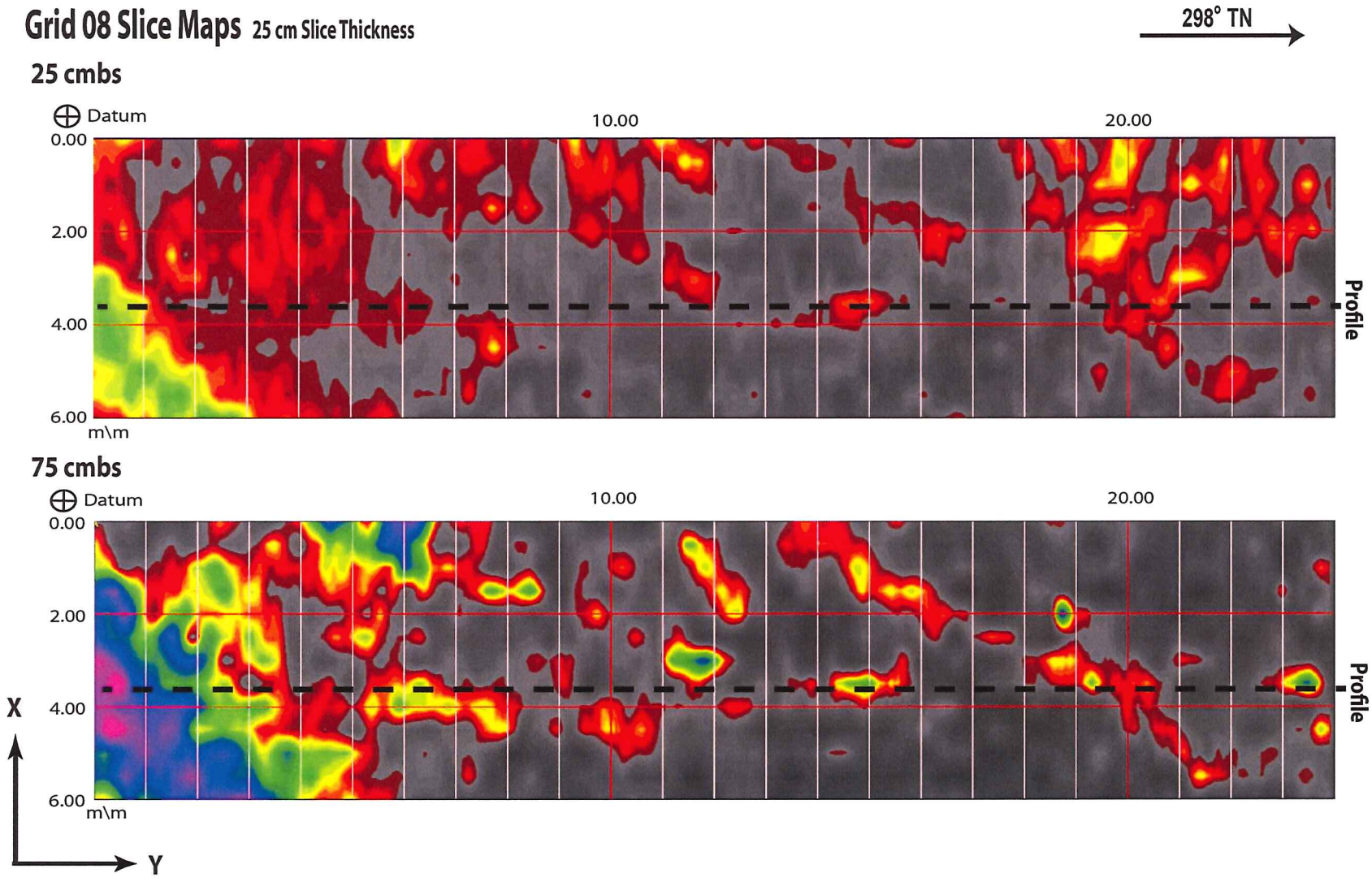


Figure 21. Grid 08 slice maps

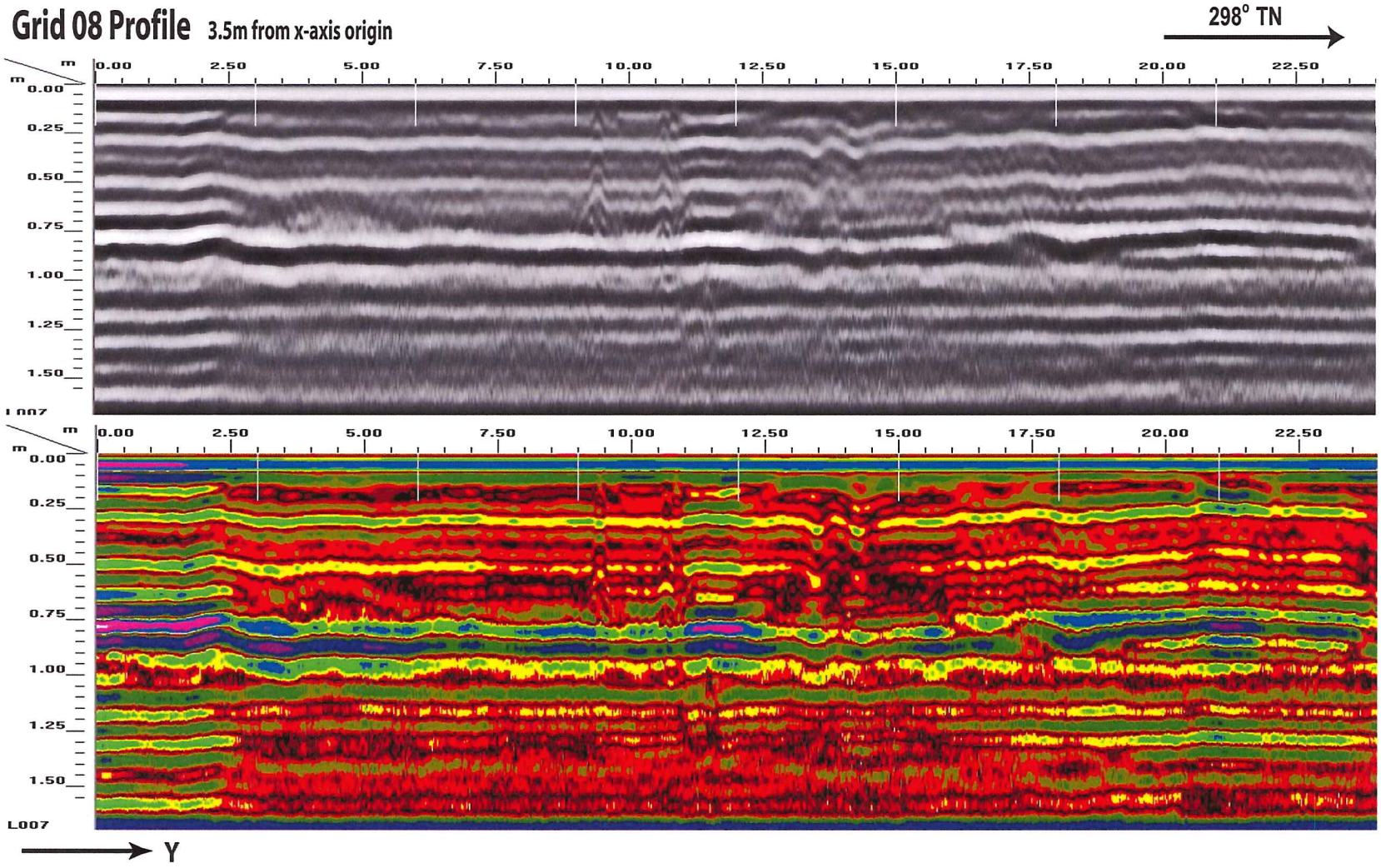


Figure 22. Grid 08 profile

Survey Grid 09

Survey Grid 09 was located in the Southeastern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 43 m and included 12; 43 m long transects spaced 50 cm apart. Test excavation BT-11 was located within Grid 09 (Figure 4).

A review of amplitude slice maps for Grid 09 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 23).

GPR depth profiles for Grid 09 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 24). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

Survey Grid 10

Survey Grid 10 was located in the Southwestern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 3 m by 51 m and included 6; 51 m long transects spaced 50 cm apart. Test excavations BT-5 and BT-10 was located in the immediate vicinity of Grid 10.

A review of amplitude slice maps for Grid 10 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 25).

GPR depth profiles for Grid 10 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 26). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

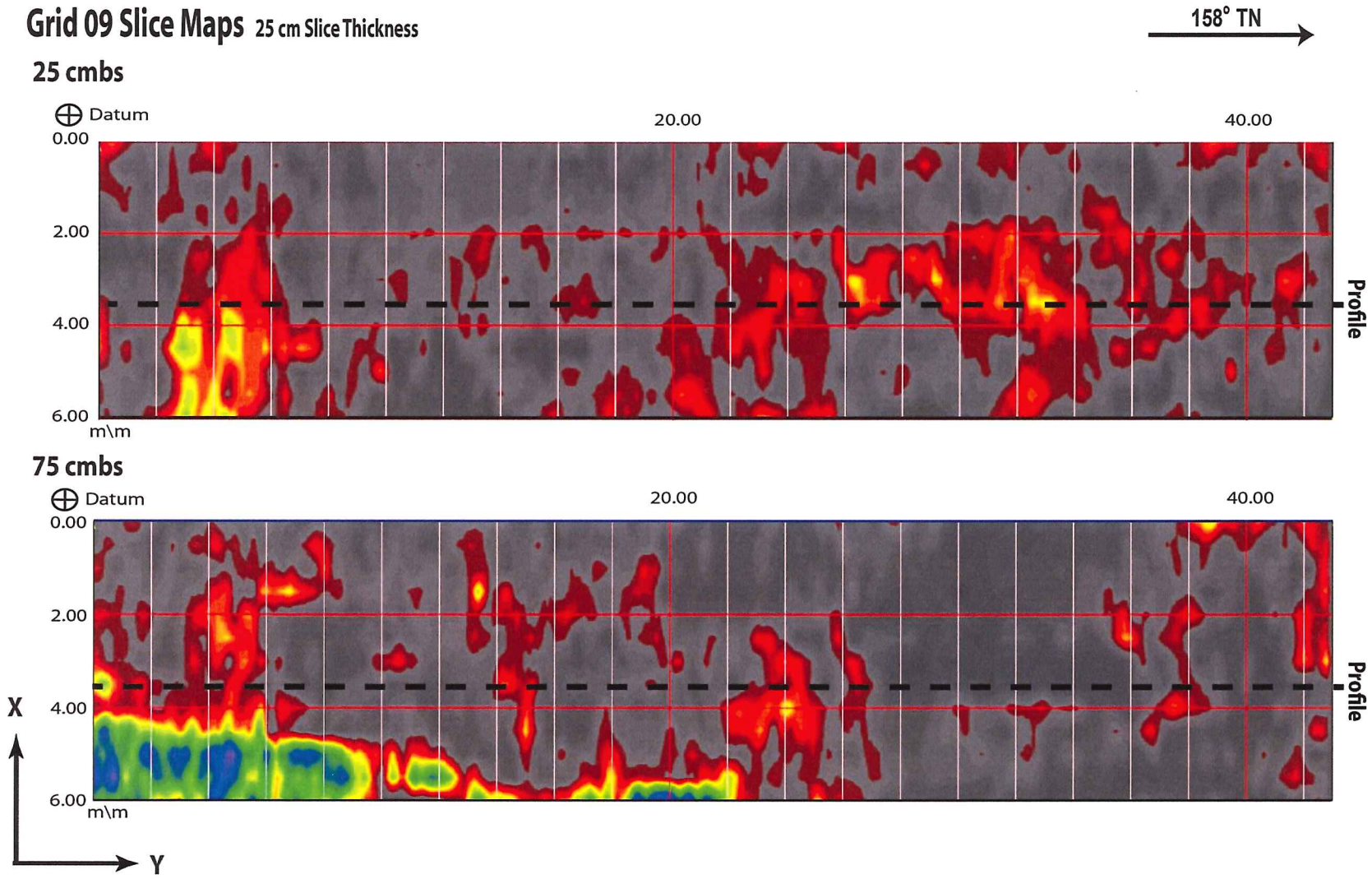


Figure 23. Grid 09 slice maps

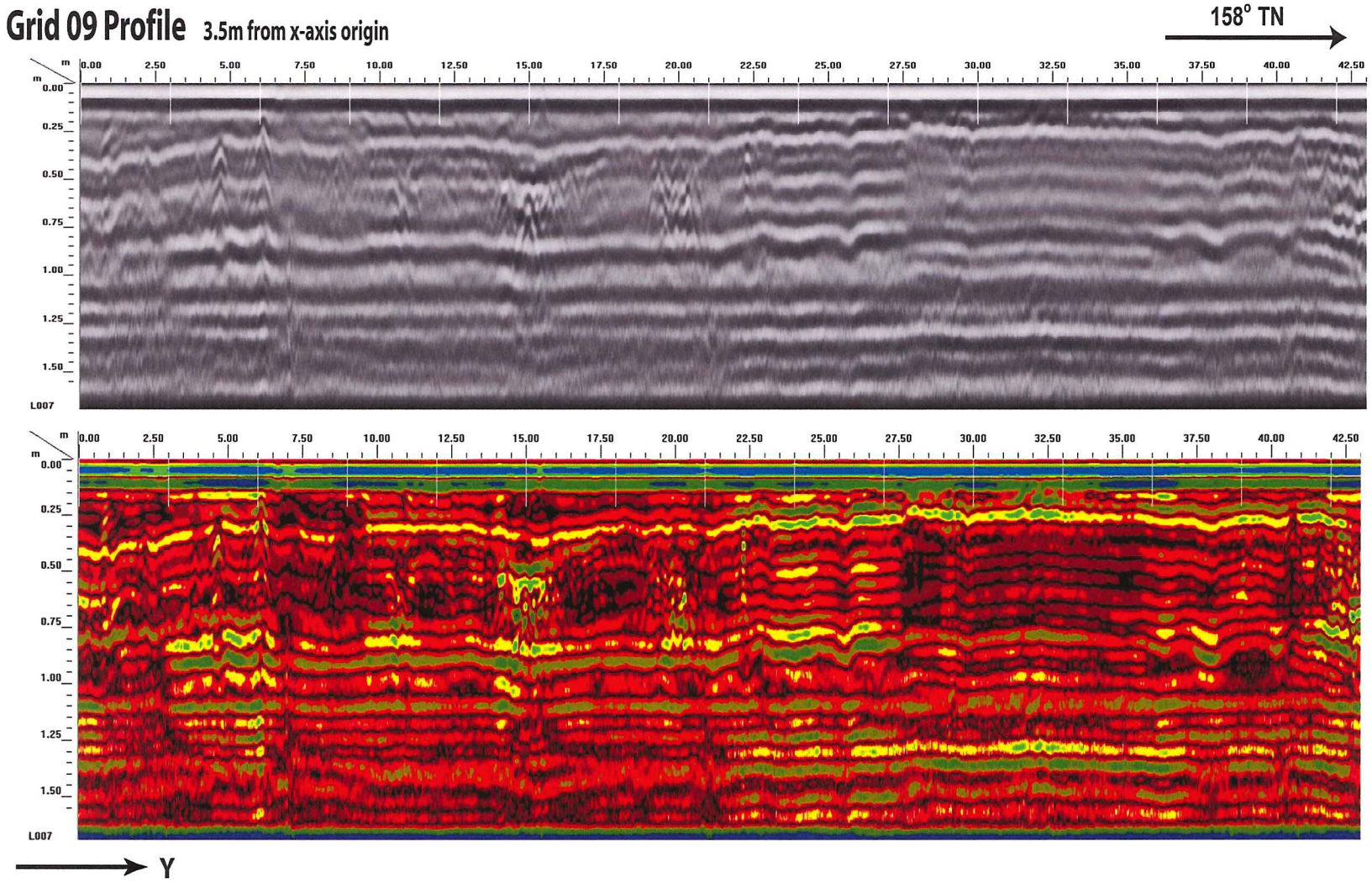


Figure 24. Grid 09 profile

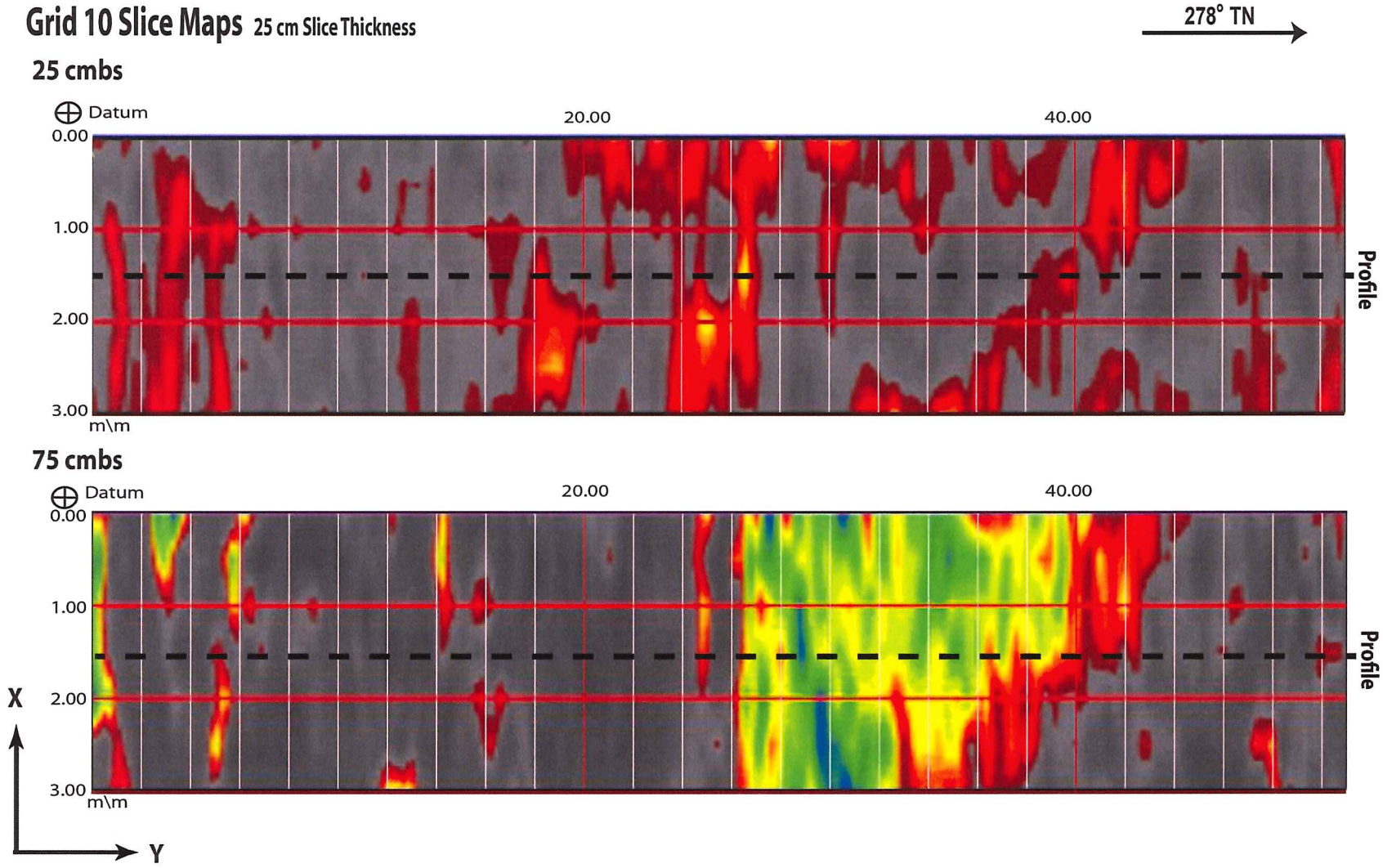


Figure 25. Grid 10 slice maps

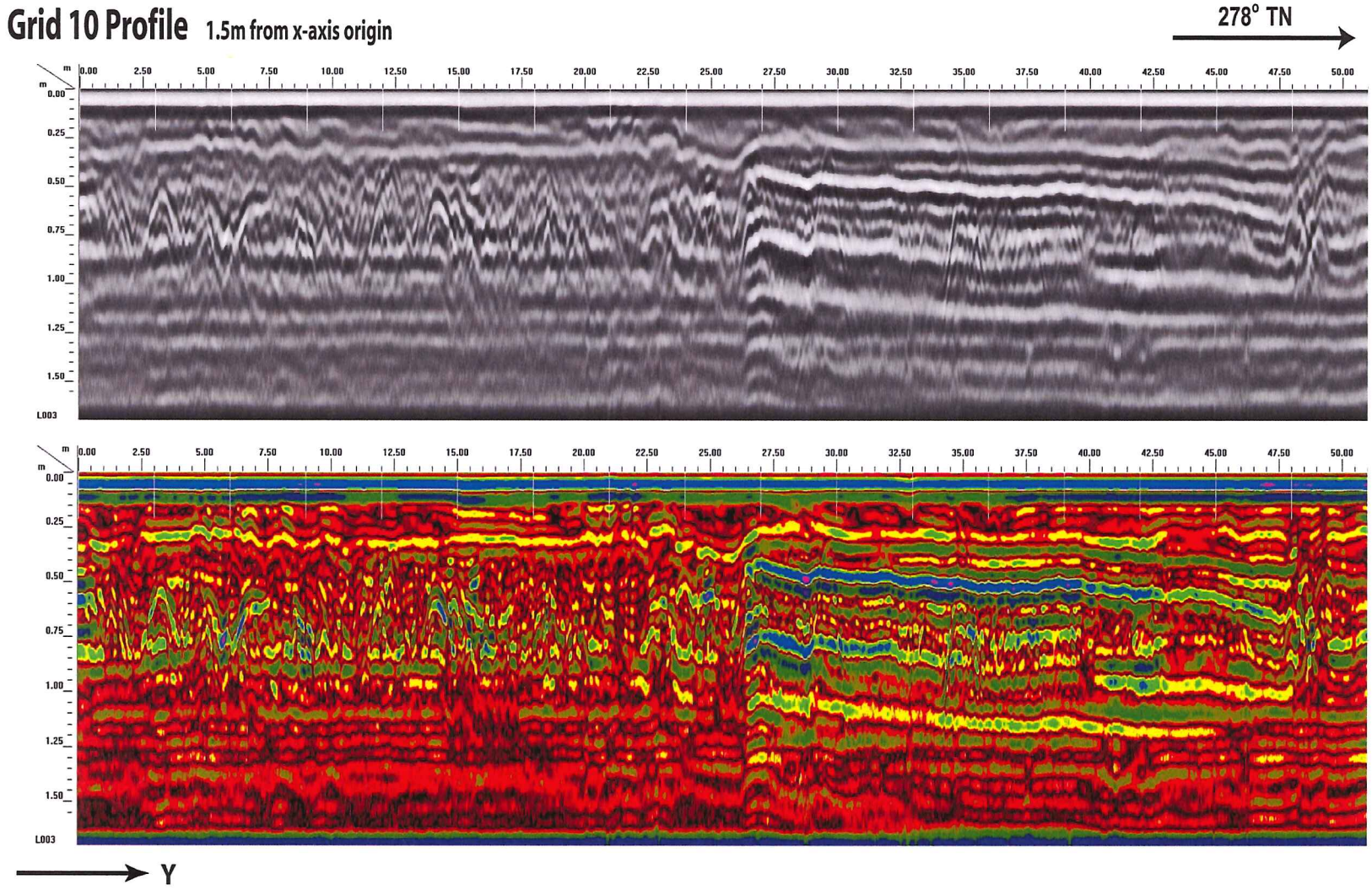


Figure 26. Grid 10 profile

Survey Grid 11

Survey Grid 11 was located in the central portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 5 m by 90 m and included 10; 90 m long transects spaced 50 cm apart. Test excavation BT-14 was located in the immediate vicinity of Grid 11 and BT-8, BT-12, and BT-7 were located within Grid 11 (Figure 4).

A review of amplitude slice maps for Grid 11 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 27).

GPR depth profiles for Grid 11 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 28). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 125 cmbs.

Survey Grid 12

Survey Grid 12 was located in the Western portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6m by 27 m and included 12; 27 m long transects spaced 50 cm apart. Test excavation BT-18 was located within Grid 12 (Figure 4).

A review of amplitude slice maps for Grid 12 displayed no distinct linear features that indicatethe presence of utilities. Reflectivity varied throughout the grid and increased with depth. An area of very high reflectivity is observed between 15 m and 18 m from the origin of the survey grid. The highly reflective shape represents a metal utility box cover. A transition from higher reflectivity to lower reflectivity was observed at approximately 75 cmbs (Figure 29).

GPR depth profiles for Grid 12 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 30). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. An anomalous reflection was observed at 16 m from the survey grid origin and occurred at a depth of 0 cmbs to 150 cmbs. This anomaly represents the metal utility box cover located on the surface. The maximum depth of clean signal return was approximately 125 cmbs.

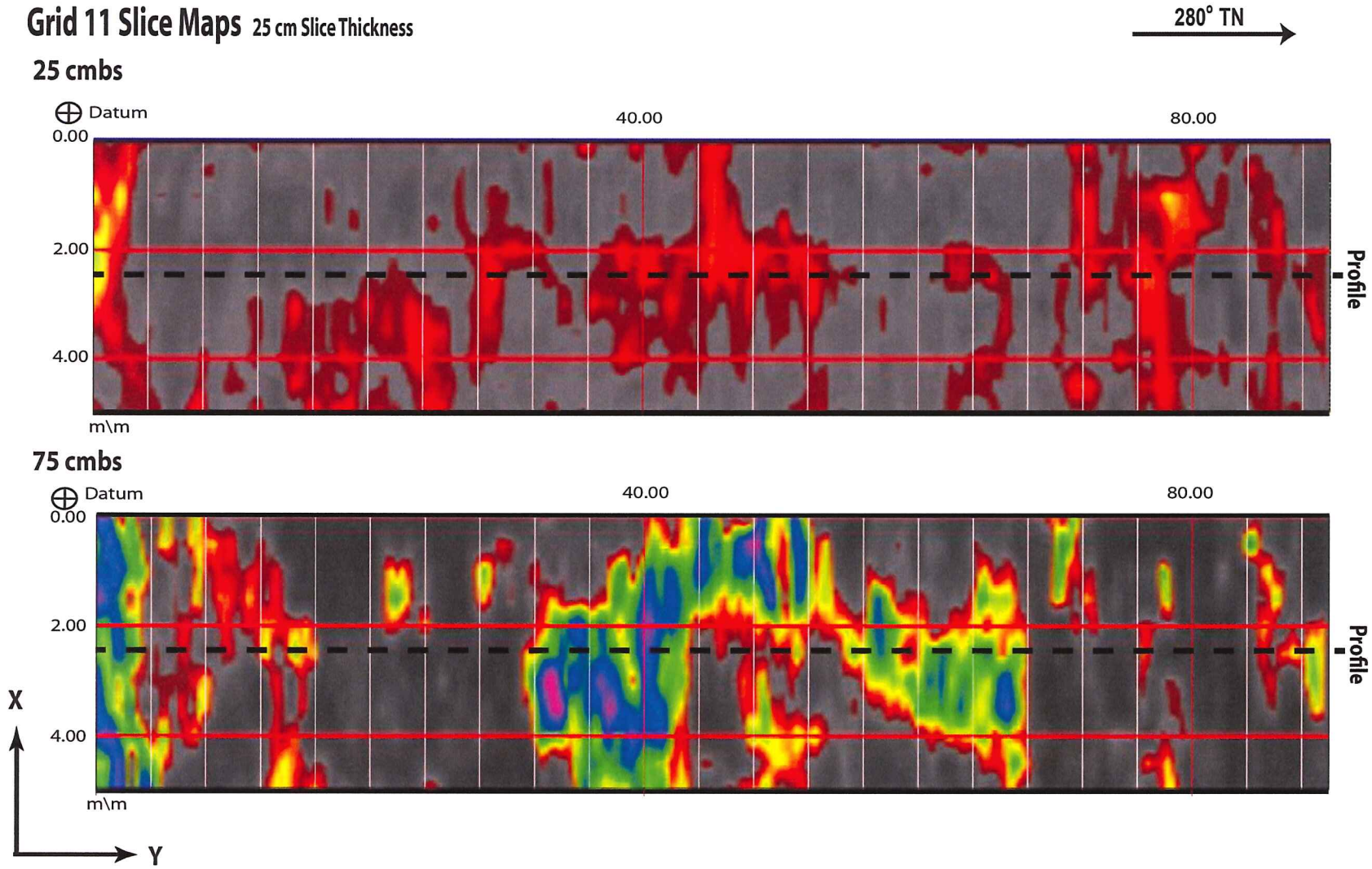


Figure 27. Grid 11 slice maps

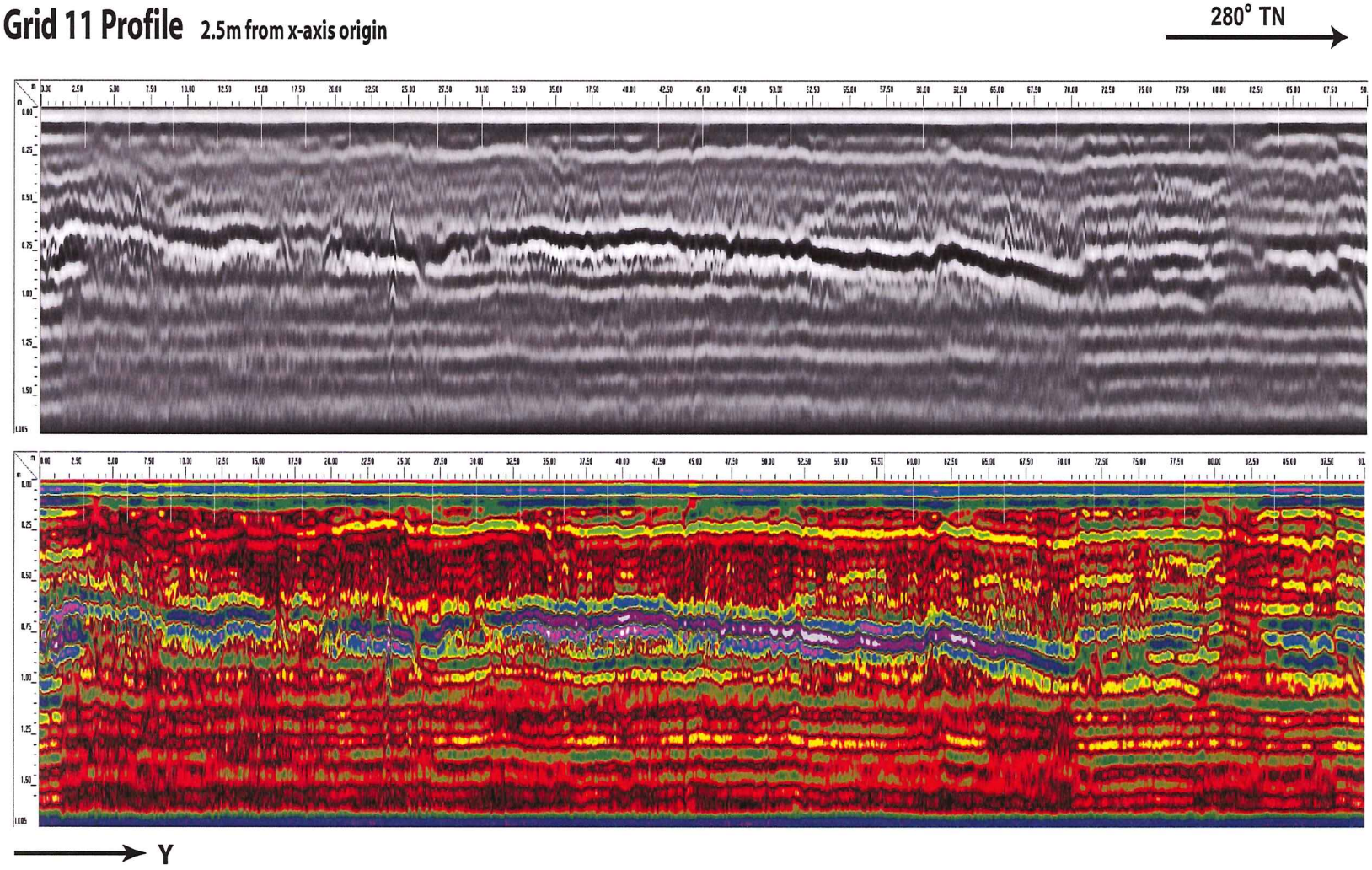


Figure 28. Grid 11 profile

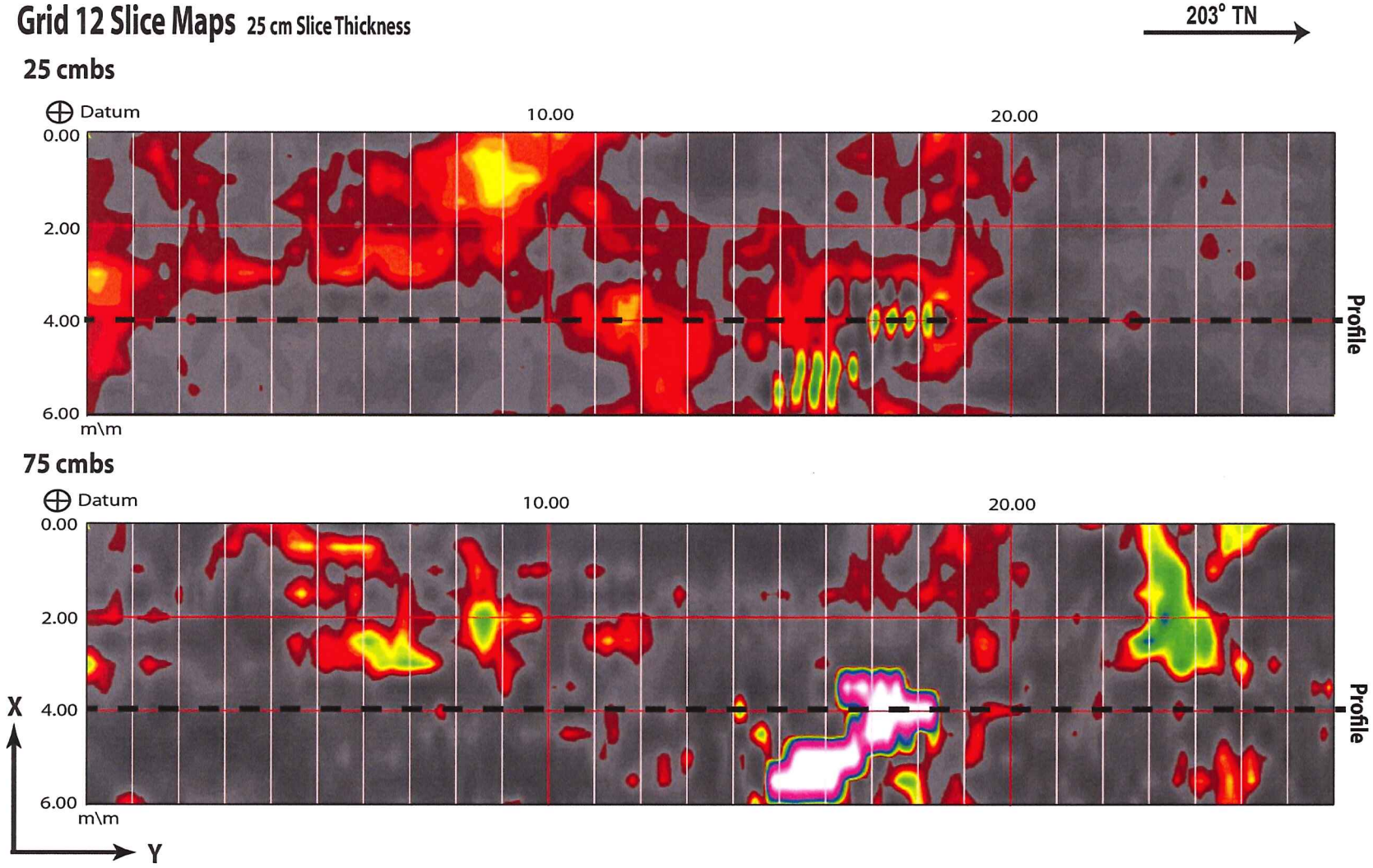


Figure 29. Grid 12 slice maps

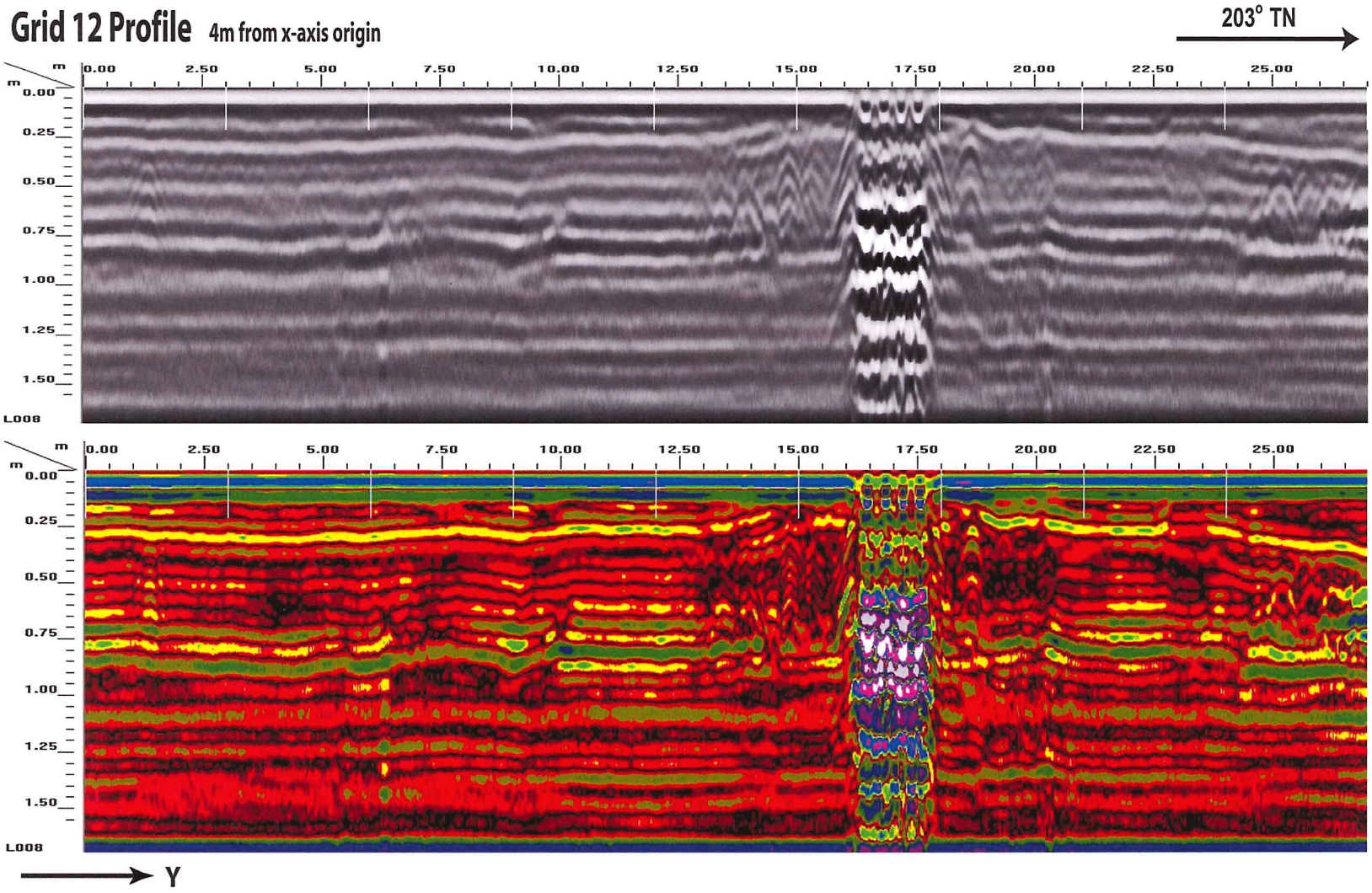


Figure 30. Grid 12 profile

Survey Grid 13

Survey Grid 13 was located in the Western portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 6 m by 19 m and included 12; 19 m long transects spaced 50 cm apart. No test units were placed in the immediate vicinity Grid 13.

A review of amplitude slice maps for Grid 13 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 31).

GPR depth profiles for Grid 13 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 32). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 115 cmbs.

Survey Grid 14

Survey Grid 14 was located in the Southwestern portion of the GPR survey area, and situated within an asphalt-paved parking lot (Figure 3). The survey grid measured approximately 9 m by 9 m and included 18; 9 m long transects spaced 50 cm apart. No test units were placed in the immediate vicinity Grid 14.

A review of amplitude slice maps for Grid 14 displayed no distinct linear features that indicate the presence of utilities. Reflectivity varied throughout the grid and increased with depth. A transition from lower reflectivity to higher reflectivity was observed at approximately 75 cmbs (Figure 33).

GPR depth profiles for Grid 14 identified multiple horizontal bands of varying reflectivity, commonly associated with stratigraphic layering, throughout the survey area (Figure 34). This banding corresponds to variations of density and chemical composition within numerous fill deposits. The profile also indicated an increase in reflectivity occurring around 75 cmbs. No utilities were clearly observed in the profile. The maximum depth of clean signal return was approximately 115 cmbs.

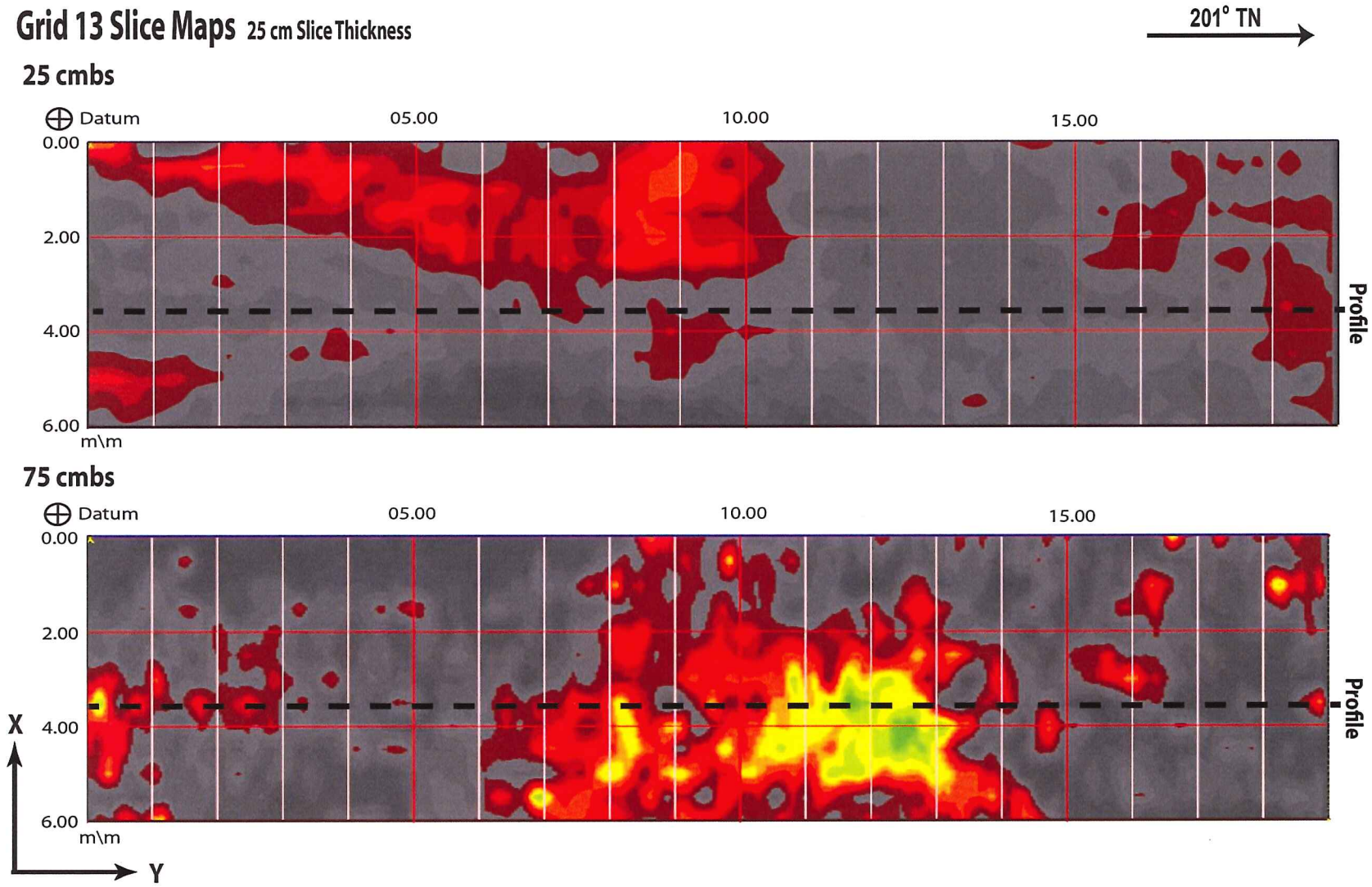


Figure 31. Grid 13 slice maps

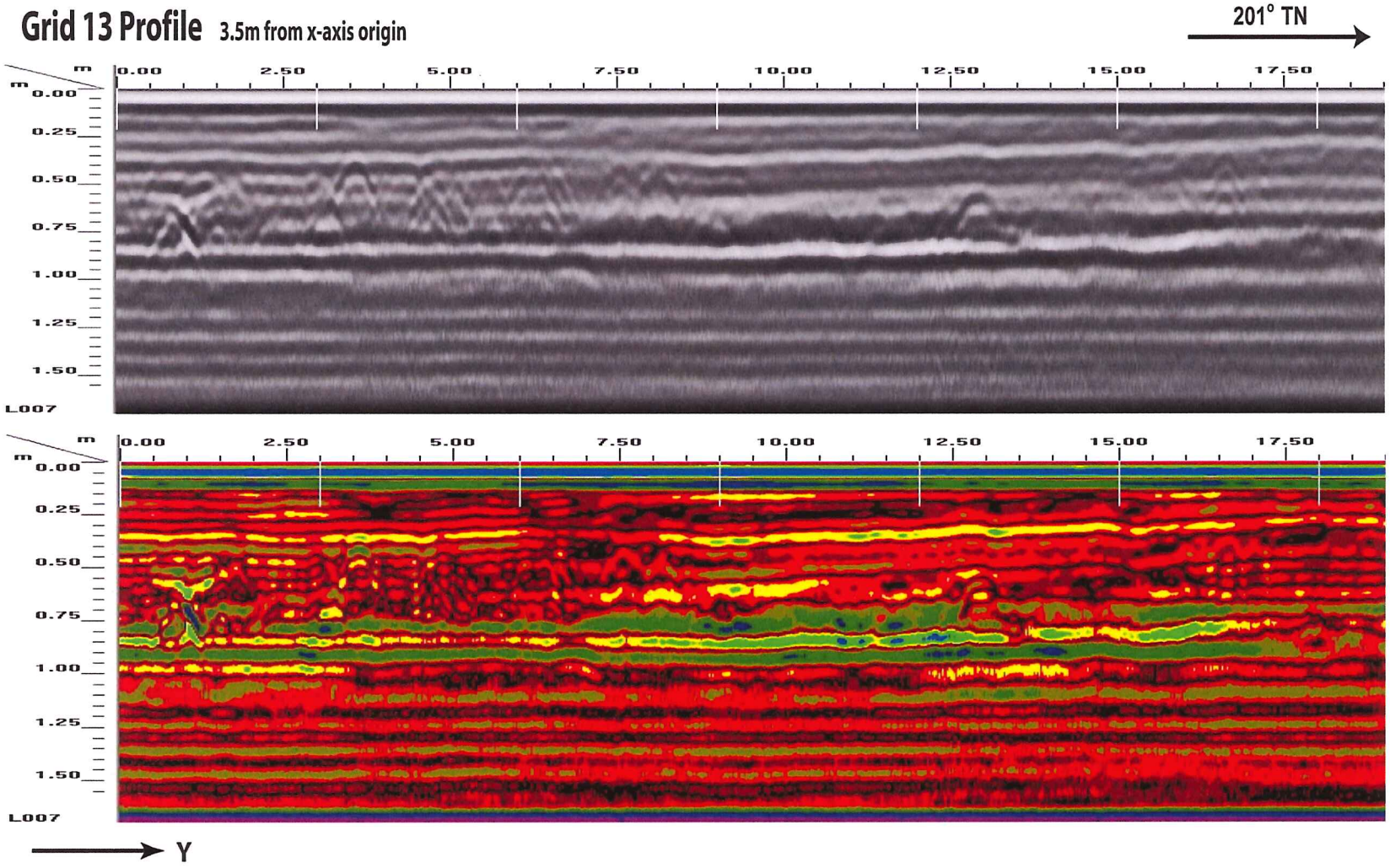


Figure 32. Grid 13 profile

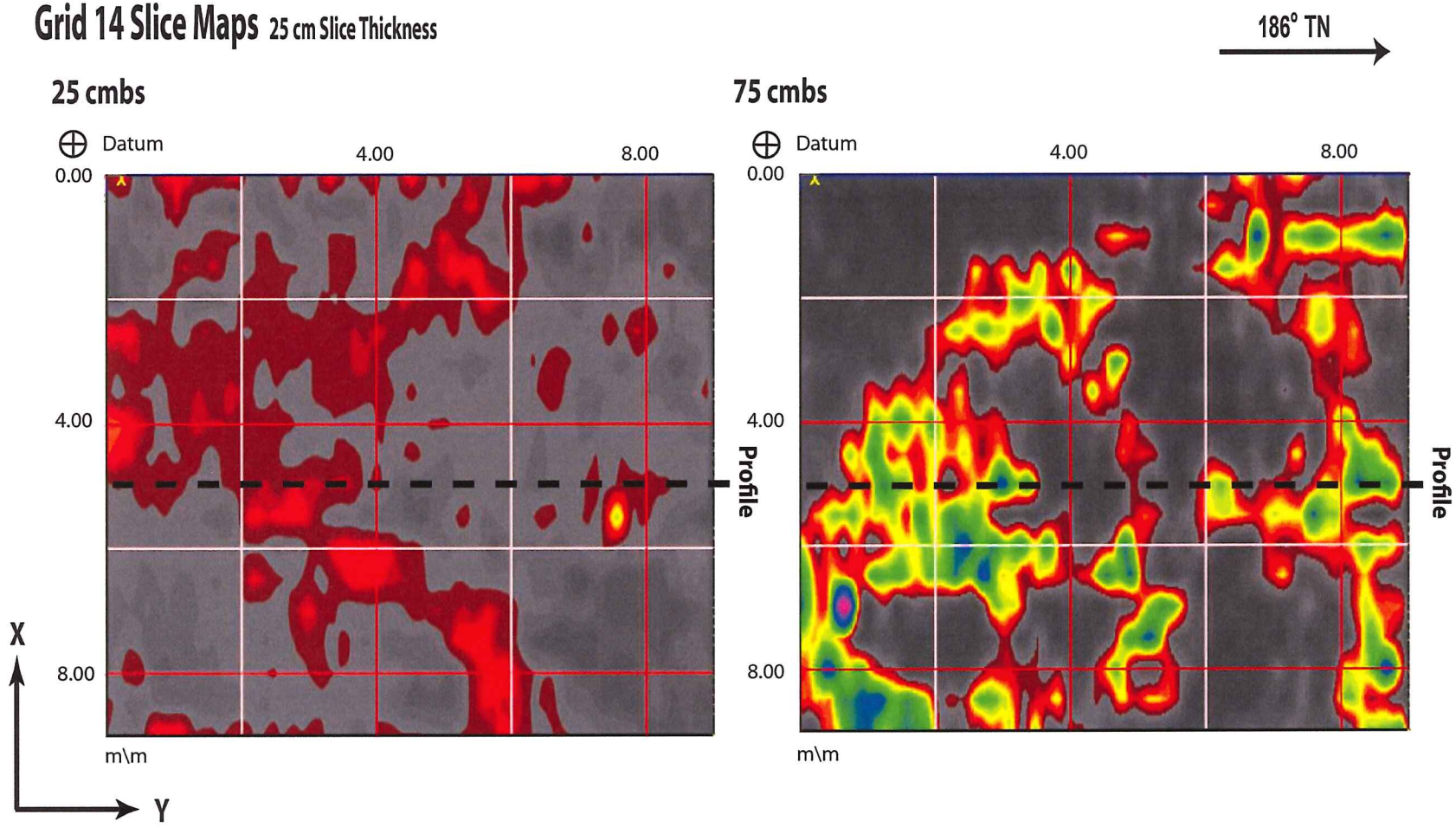


Figure 33. Grid 14 slice maps

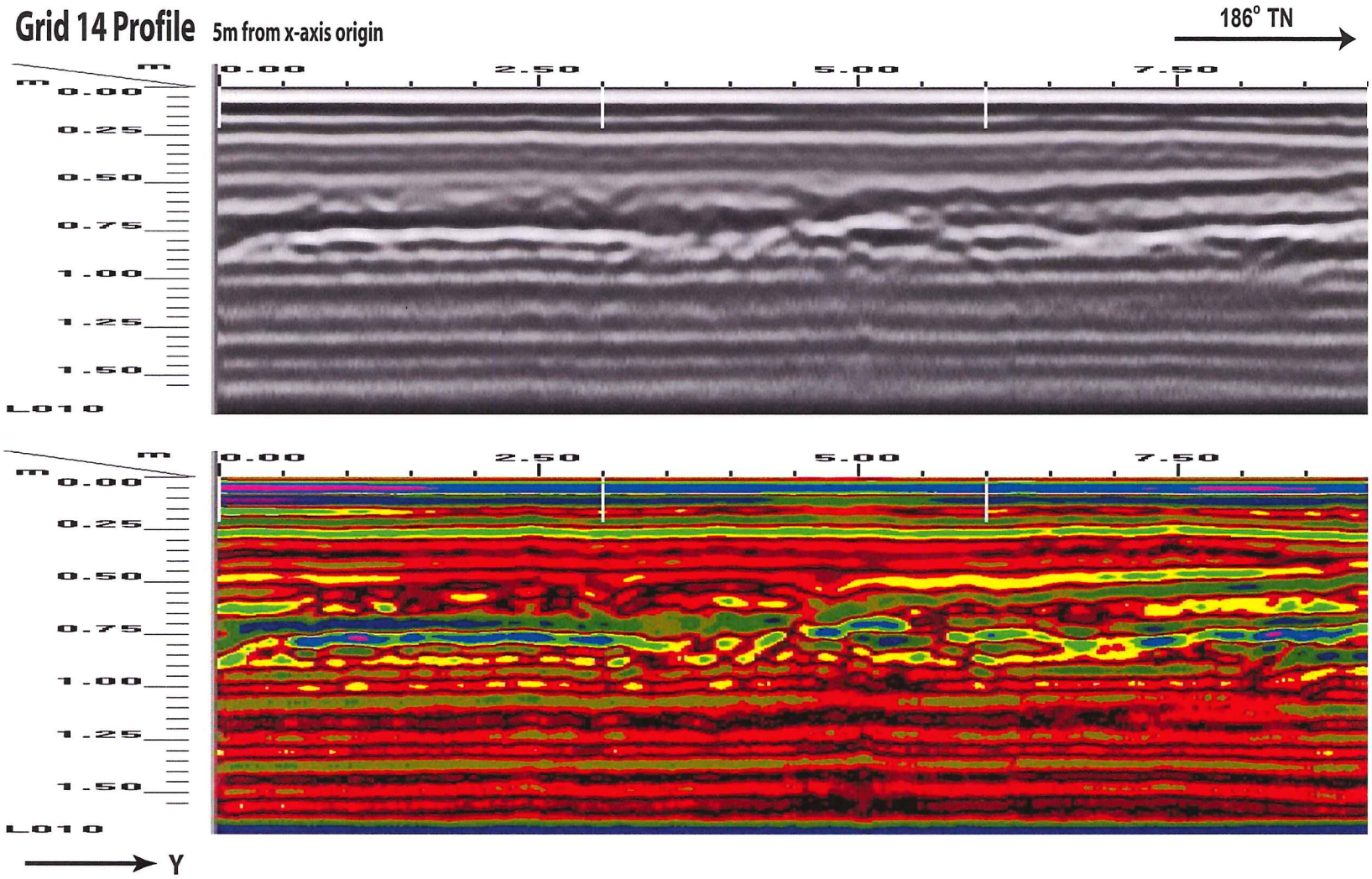


Figure 34. Grid 14 profile

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APPENDIX B-1.

SHPD Letter of Acceptance (May 7, 2014)

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCEMANAGEMENT

JESSE K. SOUKI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCEMANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCESENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVECOMMISSION
LAND
STATE PARKS

HISTORIC PRESERVATION DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

May 7, 2014

LOG NO: 2014.00114
DOC NO: 1405MD23
Archaeology

Hallett H. Hammatt, Ph.D.
Cultural Surveys Hawaii
PO Box 1114
Kailua, Hawaii

Aloha Dr. Hammatt:

SUBJECT: **Chapter 6E-42 Historic Preservation Review-**
Draft Archaeological Assessment for the Westin Maui Master Plan Improvements Project
Hanakaʻōʻō Ahupuaʻa, Lāhainā District, Island of Maui
TMK (2) 4-4-008:019

Thank you for the opportunity to review the draft report titled *Draft - Archaeological Assessment for the Proposed Westin Maui Resort & Spa Master Plan Improvements, Hanakaʻōʻō Ahupuaʻa, Lāhainā District, Island of Maui, TMK: (2) 4-4-008:019* (Lee-Grieg and Hammatt; May 2013, Cultural Surveys Hawaii Job Code HANAKAOO 4), which we received January 9, 2014. We apologize for the delay in our reply.

This report was prepared for Munekiyo & Hiraga, Inc. representing the Starwood Hotels & Resorts (the Westin). The Westin is proposing a number of renovations to the 11.987-acre parcel, including: a new 3 ½ to 4 ½ story parking garage; a new landscaping facility; an expansion to the existing ballroom and meeting rooms; a new one story back-of-house structure; removal of two existing retail spaces; two new roof additions; expansion of the existing spa facility; relocation of the existing sewer line; and other related improvements.

Fieldwork was conducted between March 13 through 21, 2013 by three archaeologists with an additional pedestrian inspection of the back-of-house structure location on December 26, 2013 utilizing a total of 17 person days to complete the fieldwork. Ground-penetrating radar was utilized to help identify areas below existing asphalt for subsurface testing. Eighteen mechanical trenches were excavated, averaging 0.8 wide by five meters long. Trenches ranged from 130-190 centimeters in depth; no historic properties were identified. Due to the potential for the presence of intact Jaucas Sand deposits archaeological monitoring is recommended for the upcoming renovations to the Westin, and we concur with that assessment.

The archaeological inventory survey has been submitted as an archaeological assessment due to the lack of historic properties identified during the survey. This archaeological assessment report meets the requirements of Hawai'i Administrative Rule 13-275-5(b)(5)(A) and is accepted as final. In the final document, please include the TMK which is missing on page 1, Introduction, Project Background, first paragraph and update the person hours from 16 to 17 on page 52, Results of Fieldwork, first paragraph.

Please send one hardcopy of the final document, clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. We request that for the Final document, and for all future submittals, individual names of SHPD employees not be included in report and plan submittals. Simply state that the SHPD Archaeology Branch and the Culture and History Branch will both be notified upon the inadvertent discovery of historic cultural remains or burial sites.

We look forward to reviewing an archaeological monitoring plan for this project. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov for any concerns about this letter.

Mahalo,

Morgan E Davis
Lead Archaeologist, Maui Section

cc: County of Maui
Department of Planning
Current Planning Division
2200 Main Street, Ste. #315
Wailuku, Hawaii 96793

Munekiyo & Hiraga
305 S. High Street
Wailuku, Hawaii 96793

Renee Segundo, Supervising Building Permit Clerk
County of Maui, Department of Public Works DSA
250 South High Street
Wailuku, Hawaii 96793

Ms. Annalise Kehler at annalise.kehler@mauicounty.gov

APPENDIX C.

Cultural Impact Assessment Interviews

PROPOSED MASTER PLAN IMPROVEMENTS FOR THE WESTIN MAUI RESORT & SPA CULTURAL IMPACT ASSESSMENT

Interview with: Lori Sablas

Interviewed by: Ashley Otomo, Analyst
Munekiyo & Hiraga, Inc.

The cultural impact assessment interview with Lori Sablas was held at her residence on March 5, 2013.

Lori Sablas was born in Lahaina, Maui in 1943. She is the daughter of Bartolome Mandrisa Sablas and Elizabeth Keau Sablas. Her father was Filipino and born in the Philippines. Her mother's maiden name was Kamaka. She was native Hawaiian and from Kahakuloa, Maui. Lori has four (4) sisters and two (2) brothers. Lori has lived on Maui for sixty-six (66) years and lived in California for three (3) years, where she worked at Stanford Research Institute. As a child, she lived in the Kahana plantation camp before moving to Lahaina town. She currently resides in Kihei and is a member of the Lahaina Restoration Foundation, Native Hawaiian Hospitality Association, Maui Hawaiian Agencies and Organizations, and Hawaii Pacific Parks Association. Lori spent forty-five (45) years working in Kaanapali, twelve (12) years at the Sheraton Maui Resort & Spa, ten (10) years for the Kaanapali Beach Resorts Association (KBRA), and twenty-three (23) years at the Kaanapali Beach Hotel. Lori has an intimate knowledge of both the Kaanapali region and native Hawaiian culture.

Lori's familiarity of the project area comes from growing up in the Lahaina area and from her long career and involvement in the Kaanapali Resort area. Lori particularly recalled going to Kaanapali Beach, near Black Rock, with her father to lay lobster traps when she was around five (5) to ten (10) years old, when Kaanapali was undeveloped. She noted how interesting it has been to learn so much about the history and evolution and transformation of Kaanapali from being vacant land to the first master planned resort area on Maui.

When asked about her interest in the Westin Maui Resort & Spa and the surrounding areas, Lori stressed her dedication, as well as the Kaanapali Beach Resorts' dedication, to the community. During Lori's involvement and work in the Kaanapali Resort area, she coordinated the first highway cleanup that extended from the Maui Kaanapali Villas to the Hyatt Regency. She also helped coordinate carpools and busing of hotel employees, as parking was limited and many workers, including herself, did not live in West Maui. Lori is a strong supporter of the buses and carpools, as they mitigate traffic issues and therefore lessens the need for more roads. Lori also noted that the hotels play a major role in Hawaii's tourism-based economy, and they provide stable, maintained employment for many of her friends, relatives, and locals. With regards to the Westin Maui Resort & Spa, Lori clearly recalled the Westin hosting the Na Mele O Maui student song competition during the early 1980s. She was impressed with their support for the local community and fondly remembered how generous the Westin was in not only hosting the event but also providing free lunch for the student participants.

When asked about cultural practices in the vicinity of the Westin Maui Resort & Spa property, Lori said she was not aware of any native Hawaiian practices around the area. She did note however, that in the early 1700s, there was a battle fought near the project site, where two half-brothers fought over who would rule Maui. In the early 1900s, the area was used as the Koko-o-na-moku Race Track, where locals would gather to watch and bet on horse races. She also noted that before all the resort development, the area was covered with mostly kiawe trees and used for cattle grazing.

With regards to cultural concerns with the renovations at the Westin Maui Resort & Spa, Lori said that contractors should be careful during construction, especially with the construction of the parking structure, which will involve pile driving. She mentioned that early Hawaiians may have buried their deceased at Pu`u Keka`a, also known as Black Rock. During the initial development of the Sheraton Maui Resort & Spa, bones may have been shifted and scattered along the coastline between the Westin Maui Resort & Spa and the Hyatt Regency. She recommended archaeological monitoring and believed that it is of utmost importance to be respectful and mindful of any findings in the area. Lori also expressed concern in connection to beach access. Kaanapali Beach is one of Maui's nicest, most popular beaches. If the project proceeds, she recommended that free, beach access parking be dedicated so that locals, as well as tourists, can have easier access to the beach.

Lori expressed her general support for the project. Her biggest support is for the new parking structure, which will add much needed parking stalls for guests and employees. She was also excited about the employment opportunities (construction, etc.) that may result from this project. Lori said that for Maui in general, she would like to see the restoration of already developed areas, the enhancement of what's there, and the proposed improvements at the Westin are in-keeping with these principles.

PROPOSED MASTER PLAN IMPROVEMENTS FOR THE WESTIN MAUI RESORT & SPA CULTURAL IMPACT ASSESSMENT

Interview with: Sueo "Sammy" Kadotani

Interviewed by: Ashley Otomo, Analyst
Munekiyo & Hiraga, Inc.

The cultural impact assessment interview with Sam Kadotani was held at his residence on March 19, 2013.

Sam Kadotani was born in Kaanapali, Maui in 1923. He is the son of Kuichi and Haru Kadotani. His parents were Japanese immigrants. His father worked as a tug boat operator at Kaanapali Landing. His mother's maiden name was Matsuoka. She was a stay-at-home mother. Sam is the youngest of ten (10) children. He has two (2) brothers and seven (7) sisters. Sam is married to Hatsumi, and they have two (2) sons, Raymond and Owen. Sam has lived in the West Maui area for his whole life, except for in 1946, when he was drafted and served a year in the signal corps at Fort Shafter in Oahu. As a child, Sam lived in Kaanapali at the top of Kekaa Drive before moving to the original Puamana camp near the present day Lahaina Shores Beach Resort. After graduating from Lahainaluna High School in 1941, he worked for Pioneer Mill as a timekeeper, then as a manager for Pioneer Hospital. When the Pioneer Hospital closed, Sam was hired to manage the newly formed Maui Medical Group. Finally, he ran Kaiser Permanente's Lahaina Clinic for thirteen (13) years before retiring. Sam still lives in Lahaina town and is a member of the Boy Scouts of America, Lahaina Restoration Foundation, Lahainaluna High School Foundation, and Lahaina Hongwanji Mission. He also sits on the Board of Trustees for the Holy Innocents' Kahi Maluhia Columbarium.

Sam's familiarity of the project area comes from growing up in Kaanapali and living practically his whole life in the Lahaina area. When he was a child, the Kaanapali Beach Resort area was undeveloped and predominantly covered with kiawe trees. Sam remembers collecting kiawe beans from the area to feed to his family's pigs. He and his siblings would also go to Kaanapali Beach with buckets of food scraps. They would bury the buckets in the sand with the hopes of catching sand crabs for dinner. Sam also recalled digging Japanese graves along the shoreline of Kaanapali Beach in 1960, before any of the resorts had been built. The bones were collected and given to Pioneer Mill for cremation.

When asked about his interest in the Westin Maui Resort & Spa or the surrounding areas, Sam emphasized the importance of maintaining and exhibiting Hawaii's culture. He fondly remembers attending many shows, hula performances and Hawaiian concerts, at the Maui Surf Hotel (original hotel at the Westin Maui Resort & Spa property) and the Kaanapali Beach Hotel. Sam is impressed with how the Kaanapali Beach resorts have integrated the Hawaiian culture into their hotels, whether it be interior decorations, luaus, or other Hawaiian shows or events.

Sam's support for the project comes primarily from an economic standpoint. To him, renovation of the hotels is vital to maintaining Hawaii's tourism industry, which is a major driver of the economy. On a personal note, Sam mentioned that the livelihood of both of his sons, Raymond and Owen, has relied on tourism. Raymond owns Take Home Maui, a company that sells pineapples and other fruits and Hawaiian gift baskets. Owen has worked as a chef at many restaurants in Kaanapali. Therefore, Sam expressed his support for any project that could help stimulate the tourism industry and tourist spending on Maui.

When asked about any cultural practices in the vicinity of the Westin Maui Resort & Spa property, Sam said he was not aware of any native Hawaiian practices in the area. As noted earlier, the resort area was covered in kiawe trees before the development of the Kaanapali Beach resorts.

With regards to cultural concerns with the renovations at the Westin Maui Resort & Spa, Sam said that contractors should be careful during construction. As mentioned previously, bones have been found along Kaanapali Beach. Sam recommends that respect and care be given to any remains that may be found during the renovations. He also recommends that the features of the resort that make it unique to Hawaii be kept intact.

Sam expressed his general support for the project. He's excited about the impacts that renovations and development in the Kaanapali area will have for the tourism industry.

APPENDIX D.

Traffic Impact Analysis Report

TRAFFIC IMPACT ANALYSIS REPORT
WESTIN MAUI RESORT & SPA REVITALIZATION
KAANAPALI, MAUI, HAWAII

FINAL

December 27, 2013

Prepared for:

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TRAFFIC IMPACT ANALYSIS REPORT
WESTIN MAUI RESORT & SPA REVITALIZATION

Kaanapali, Maui, Hawaii

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C. LEVEL OF SERVICE CALCULATIONS

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

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FINAL

TRAFFIC IMPACT ANALYSIS REPORT

WESTIN MAUI RESORT & SPA REVITALIZATION

KAANAPALI, MAUI, HAWAII

I. INTRODUCTION

This report documents the findings of a traffic study conducted by Austin, Tsutsumi & Associates, Inc. (ATA) to evaluate the potential traffic impacts resulting from the proposed Westin Maui Resort & Spa Revitalization (hereinafter referred as "the Proposed Project"), located in Kaanapali, Maui, Hawaii.

A. Location

The Proposed Project is located in Kaanapali, West Maui. The project site is located along Kaanapali Parkway and is bordered to the east by the Kaanapali North Golf Course, to the west by the Pacific Ocean, to the north by Whalers Village, and to the south by Kaanapali Alii Timeshares. The Project site is more specifically located at TMK: (2) 4-4-008:019. Figure 1 shows the location of the Proposed Project.

B. Project Description

The proposed Westin Maui Master Plan Improvements project includes various components as outlined below:

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WAILUKU, MAUI, HAWAII
HILO, HAWAII

Proposed Improvement	Description
New Parking Structure	3 1/2 to 4 1/2 story-parking garage is proposed in the existing south parking lot area. Proposed structure will be approximately 44 feet (ft) high, approximately 375 ft long and 122 ft wide. The proposed parking structure will be in a east-west direction
New Landscaping Facility	This facility is proposed in the lower level of the parking structure
Ballroom Expansion and Meeting Room Expansion	Renovation and expansion to existing ballrooms and meeting rooms. Proposed expansion will extend ballroom to approximately 12,000 square feet (sq ft) to the east and meeting rooms extended to 9,500 sq ft. Additionally, interior improvements and renovations are proposed including upgrading of electrical fixtures, furnishings, etc. The proposed expansion area will be in an area that was previously developed and utilized for indoor and outdoor pre-function areas.
New Back of House Structure	A one-story facility of approximately 3,070 sq ft on the northeast corner of the property and adjacent to the ballroom is proposed.
Demolition of Structures	Two (2) structures totaling approximately 2,300 sq ft in size, will be demolished and a man-made earth mound on the northwest corner of the property will be removed. Said structures are currently in the shoreline setback area and will be replaced with decking or landscaping.
Roof Additions	Two (2) areas are proposed for new roof structures to cover both existing as well as proposed deck area. Deck areas are utilized for restaurant use and roof structures will provide shade. The approximate area of the roof structures are approximately 2,570 sq ft (near Tropica Restaurant) and 4,120 sq ft (adjacent to Relish Restaurant). Roof structures will be located within the shoreline set back area. Existing shade umbrellas will also be utilized
Spa Improvements	Expansion of existing Spa facility, located on the second floor of the Ocean Tower by approximately 4,240 sq ft to include new areas for locker rooms and spa treatment and fitness areas. Expansion of the Spa area will be within the existing Ocean Tower building and will entail interior renovations to the existing built area.
Relocation of Existing Sewer Line	The relocation of a portion of an existing County of Maui sewer line within the south parking lot is proposed. The relocation is necessitated by the proposed parking garage location.

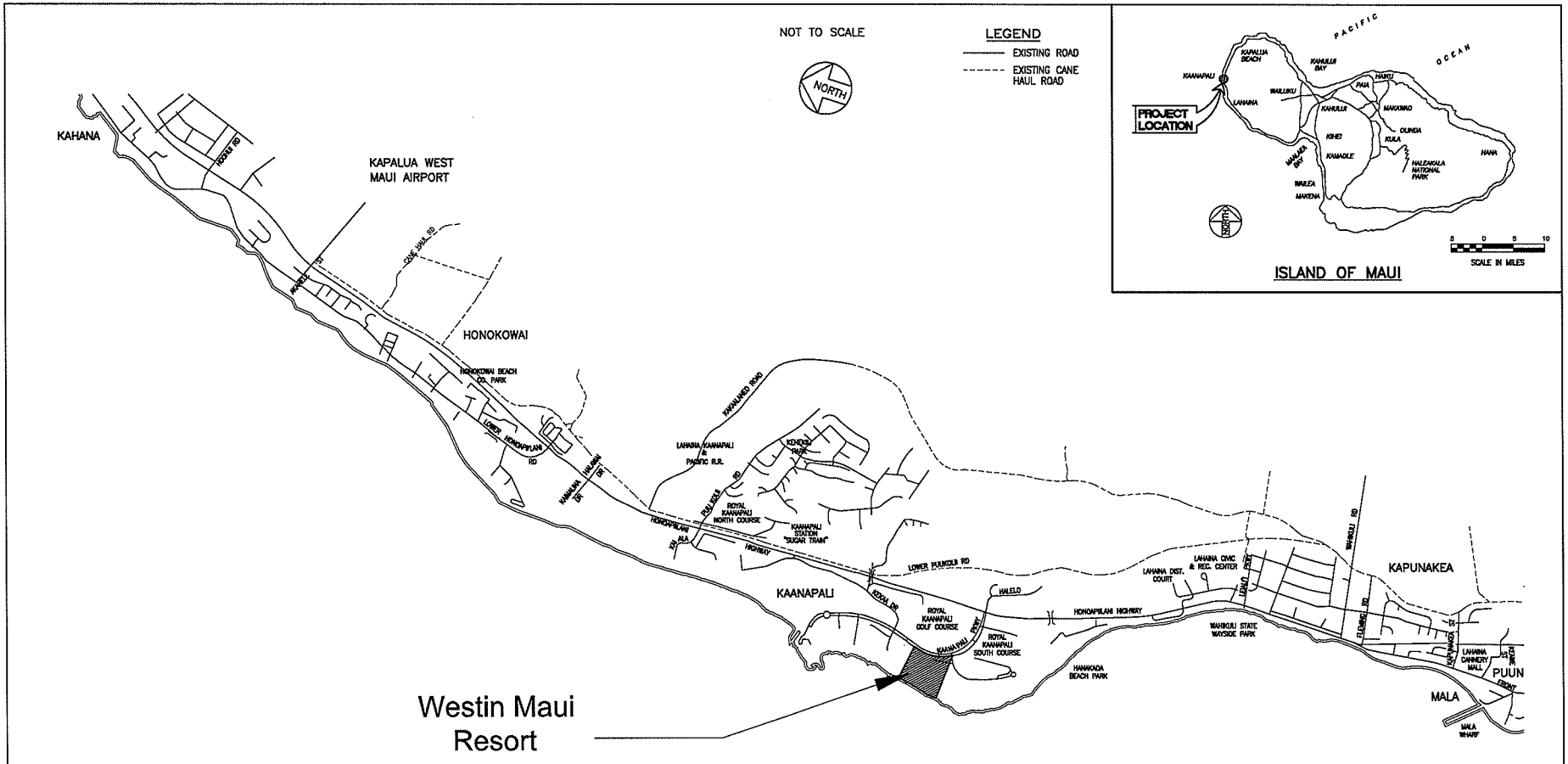
Proposed Improvement	Description
Other Related Improvements	Other related improvements, are also proposed including utility improvements, landscaping activities, and interior, non-structural improvements including but not limited to painting, replacement of fixtures, interior renovations to existing building facilities, and curb cuts to the bus turn around area to the north.

There are two (2) vehicular access points to the Proposed Project which are provided via Kaanapali Parkway. One (1) access is the ingress/egress to the lobby and parking and the other access is the ingress/egress to the back of house operations.

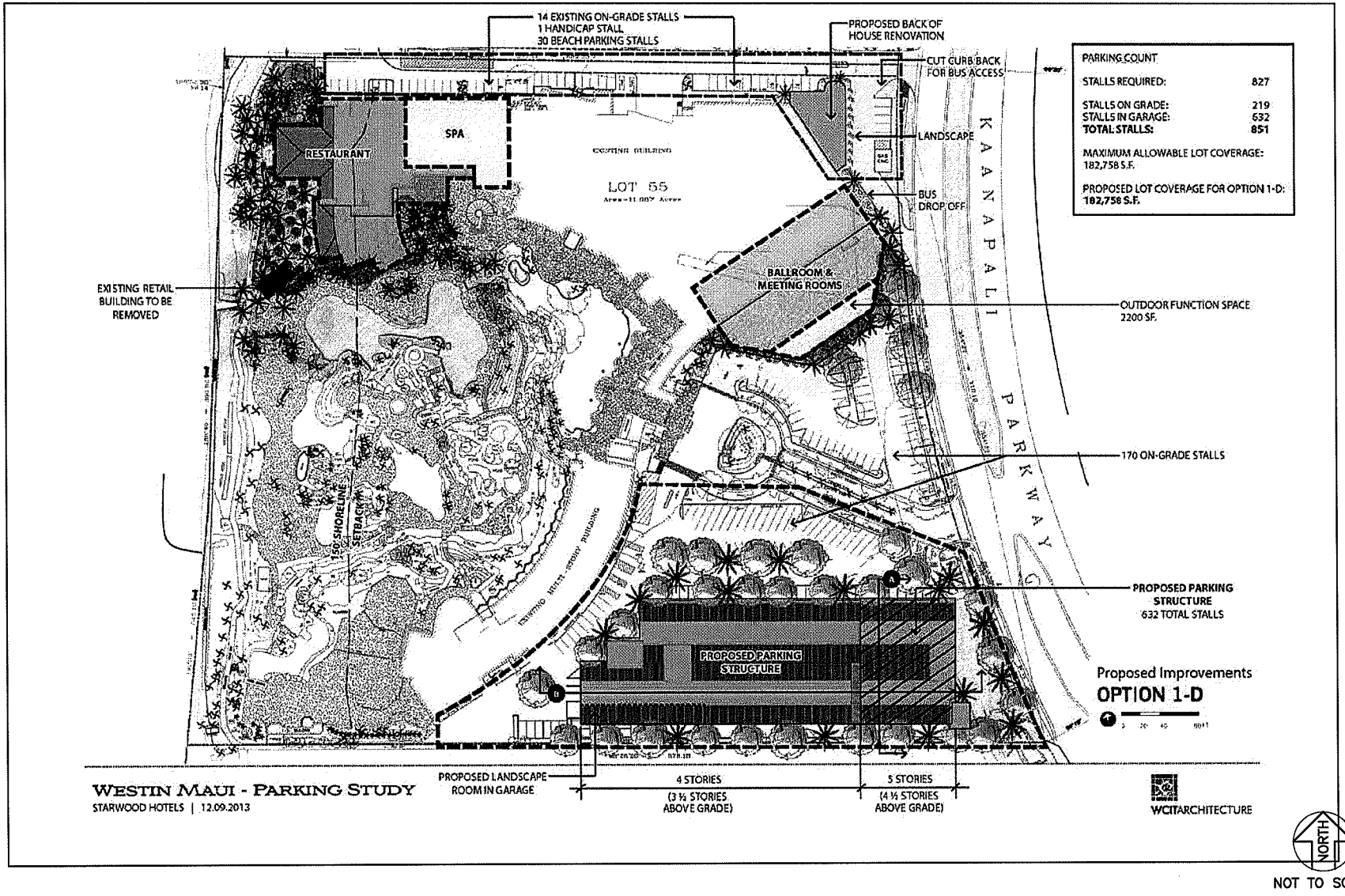
See Figure 2 for Project Site Map.

C. Study Methodology

This study will address the existing traffic operating conditions at key locations within the study area. Typically a Traffic Impact Analysis Report (TIAR) generates vehicular trips generated by the Proposed Project. Based on the nationally published ITE Trip Generation, 9th Edition, trips generated by a proposed project is estimated based on an average day during the peak hours in the morning and afternoon, typically between 7:00 am and 9:00 am and 4:00 pm and 6:00 pm, respectively. As described above, the Proposed Project will not be increasing the number of hotel rooms, though it will be expanding some of its amenities. The ITE, Trip Generation, 9th Edition, generates vehicular trips for Resort Hotel type uses based on the number of hotel rooms and is not based on the size of amenities. Typically, guests of the hotel utilize the amenities provided. Ballrooms and meeting rooms typically accommodate both guests who are staying at the hotel as well as guests driving from outside the study area. However, these rooms are not utilized on a regular basis and do not consistently generate trips during the peak hours of traffic. Therefore, trips for resort hotel type uses are generated based on the number of rooms, which will not be increased. Therefore, it is anticipated that the Project will not generate additional trips during the morning and afternoon peak hours.



WESTIN MAUI REVITALIZATION	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII **LOCATION MAP**	FIGURE 1



WESTIN MAUI
REVITALIZATION

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

FIGURE
2

PROJECT SITE PLAN

II. EXISTING CONDITIONS

A. Roadway System

The following are brief descriptions of the existing roadway network in the vicinity of the Proposed Project:

Honoapiilani Highway is a regional, State facility, between Kapalua and Wailuku that serves as the primary route connecting West Maui with other regions of Maui, such as Wailuku. The portion of Honoapiilani Highway between Lower Honoapiilani Road and Aholo Road is a two-way, four-lane highway oriented in the north-south direction and serves as the primary access and circulation route for the areas of Lahaina, Wainee, Puunoa, Kapunakea, Mala, and Kaanapali. North of Lower Honoapiilani Road and south of Aholo Road, Honoapiilani Highway narrows to become a two-lane highway. Dedicated left-turn lanes and traffic signal systems are provided on Honoapiilani Highway at its major intersections in West Maui.

Kaanapali Parkway is a two-way, four-lane, divided, private collector roadway extending west from Honoapiilani Highway serving the hotels, golf course and commercial areas of the Kaanapali Resort.

Halelo Street is the east leg of the intersection of Kaanapali Parkway/Honoapiilani Highway. The two-way, two-lane, private roadway serves a residential subdivision.

Kekaa Drive is a north-south, two-way, two-lane, private roadway, which extends south from Royal Lahaina Resort to its intersection with Kaanapali Parkway, east of Kaanapali Beach Hotel. Kekaa Drive generally runs parallel to Honoapiilani Highway on the west side of the highway. Access to Outrigger Maui Eldorado Resort and the Fairway Shops of Kaanapali are provided via Kekaa Drive. Kekaa Drive also provides access to condominiums and single family homes east of Honoapiilani Highway, at its intersection with Kualapa Loop which crosses over Honoapiilani Highway. Across its access from Outrigger Maui Eldorado Resort, Kekaa Drive intersects with Honoapiilani Highway. The left-turn movement out of Kekaa Drive onto Honoapiilani Highway is restricted.

Nohea Kai Drive is a two-way, two-lane, private roadway extending west from Kaanapali Parkway. Nohea Kai provides access to various Kaanapali Resort hotels.

Westin Maui Main Driveway is a two-way, two-lane, private access to the Project's lobby, self-parking, and valet parking lots.

Westin Maui Back of House Access is a two-way, two-lane, private access to the Project's back of house operations, public beach access parking, and reserved parking for medical offices located at Whaler's Village.

Figure 3 shows the existing lane configuration at the study intersections.

B. Existing Traffic Volumes

The hourly turning movement data utilized in this report was collected between Wednesday, November 28 and Thursday, November 29, 2012.

Due to proximity to the Proposed Project, the following intersections were studied:

- Honoapiilani Highway/Kekaa Drive (Unsignalized)
- Honoapiilani Highway/Kaanapali Parkway (Signalized)
- Kaanapali Parkway/Nohea Kai Drive (Unsignalized)
- Kaanapali Parkway/Westin Maui Main Driveway (Unsignalized)
- Kaanapali Parkway/Westin Maui Back of House Access (Unsignalized)

Based on traffic count data, the peak hours of traffic were determined to be from 7:00 AM to 8:00 AM and 3:30 PM to 4:30 PM on weekdays. The traffic count data is provided in Appendix A.

Westin Maui Main Driveway Existing Volume Adjustment

Hotel occupancy rates vary throughout the year. We collected data for vehicles entering and exiting the main driveway on the following two collection days: Wednesday, November 28, 2012, the occupancy rate was at 49.1 percent and on Thursday, November 29, 2012, the occupancy rate was at 49.8 percent. The Westin Maui Hotel's 2012 average occupancy was at 79.1 percent.

Therefore, the on-site collected data was adjusted to correspond to the 2012 average occupancy.

Island of Maui Hotel Occupancy Rate Existing Volume Adjustment

Since the month of November is generally a lower occupancy month and Kaanapali consists largely of tourist, statistics providing monthly data of total visitors planning to stay at a hotel were obtained from the State of Hawaii Department of Business, Economic Development & Tourism (DBEDT). Statistics on Maui showed an increase in visitors in 2012 over the years since 2008. The statistics also show that in the month of November, the number of visitors who "Plan to stay at a Hotel" is generally lower than the average month. Based on these statistics, it was determined that the month of November has a visitor rate of approximately 10.9 percent less than the average visitor rate over a 12-month period. Therefore, the existing AM and PM off-site traffic count data was increased by 10.9 percent for all northbound and southbound through volumes along Honoapiilani Highway and for turning movement volumes going into and out of Kaanapali Parkway and Kekaa Drive at its intersection with Honoapiilani Highway.

Figure 4 shows the existing volumes at the study intersections with the increases described above.

C. Existing Traffic Conditions Analysis and Observations

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The methods for calculating volume to capacity ratios, delays and corresponding Levels of Service as set forth in the Highway Capacity Manual – Special Report 209 (HCM), dated 2000, were utilized in this study. LOS Definitions for signalized and unsignalized intersections are provided in Appendix B.

Intersection Analysis

Kaanapali Parkway/Halelo Street/Honoapiilani Highway

Kaanapali Parkway serves as the primary access road for the Maui Marriott, Hyatt Regency Maui, Westin Maui, Sheraton Maui, and Kaanapali

Beach Hotel and all related commercial, restaurant, and golf facilities within the Kaanapali Resort Area. The second access road to Kaanapali Resort is the low-capacity Kekaa Drive, which prohibits eastbound left-turns onto Honoapiilani Highway.

Due to the heavy volume traveling to and from the resorts and shops along Kaanapali Parkway, the following movements currently operate at LOS E or F:

- Eastbound left-turn/through: LOS E during the AM peak hour of traffic.
- Northbound left-turn, southbound left-turn, eastbound left-turn/through and westbound left-turn/through/right-turn: LOS F during the PM peak hour of traffic.
- Southbound through: LOS E during the PM peak hour of traffic.

The southbound left-turn and westbound left-turn/through/right-turn lanes are low volume movements. All other individual turning movements currently operate at LOS D or better during the AM and PM peak hours of traffic.

This signalized intersection currently operates at LOS C during the AM peak hour of traffic and LOS D during the PM peak hours of traffic.

Kekaa Drive/Honoapiilani Highway

Overall, this unsignalized intersection currently operates at LOS C or better during the AM peak hour of traffic and LOS D or better during the PM peak hour of traffic. The individual turning movements operate at LOS C or better during the AM and PM peak hours of traffic.

Kaanapali Parkway/Nohea Kai Drive

Overall, this unsignalized intersection currently operates at LOS A during the AM peak hour of traffic and LOS B during the PM peak hour of traffic. The individual turning movements operate at LOS C or better during the AM and PM peak hours of traffic.

Kaanapali Parkway/Westin Maui Main Driveway

The Westin Maui Main Driveway provides access for guests of the Westin Maui. The employees of the Westin Maui park offsite and walk to the hotel.

Overall, this unsignalized intersection currently operates at LOS A during the AM and PM peak hours of traffic. The individual turning movements operate at LOS B or better during the AM and PM peak hours of traffic.

Kaanapali Parkway/Westin Maui Back of House Access

The Kaanapali Parkway/Westin Maui Back of House Access intersection restricts left-turns out of and in to the Westin Maui Back of House Access from Kaanapali Parkway. Overall, this unsignalized intersection currently operates at LOS A during the AM and PM peak hours of traffic. The individual turning movements operate at LOS B or better during the AM and PM peak hours of traffic.

Figure 4 shows the existing traffic volumes and LOS for the study intersections and movements. Table 1 summarizes the existing LOS At the study intersections. LOS worksheets are provided in Appendix C.

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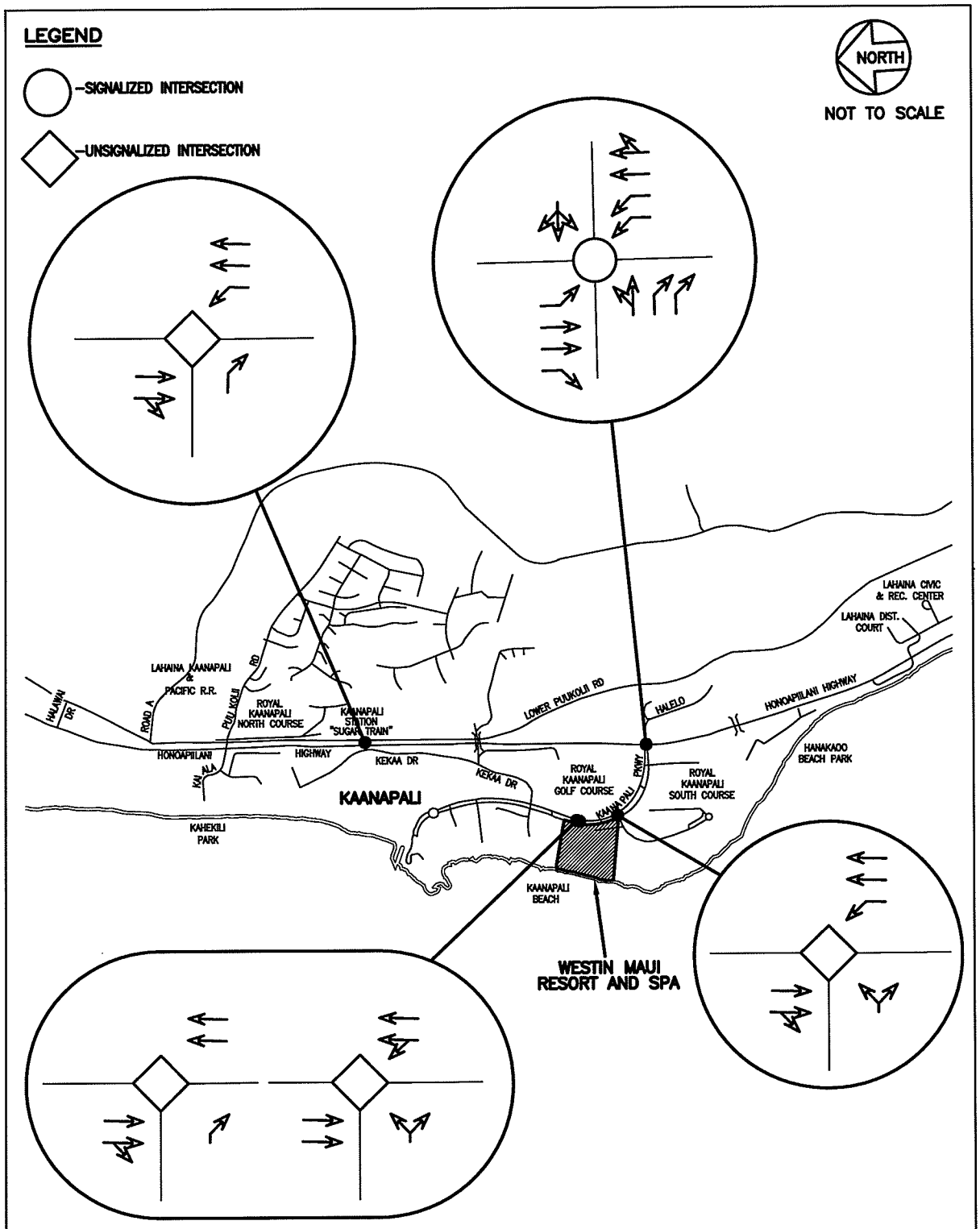
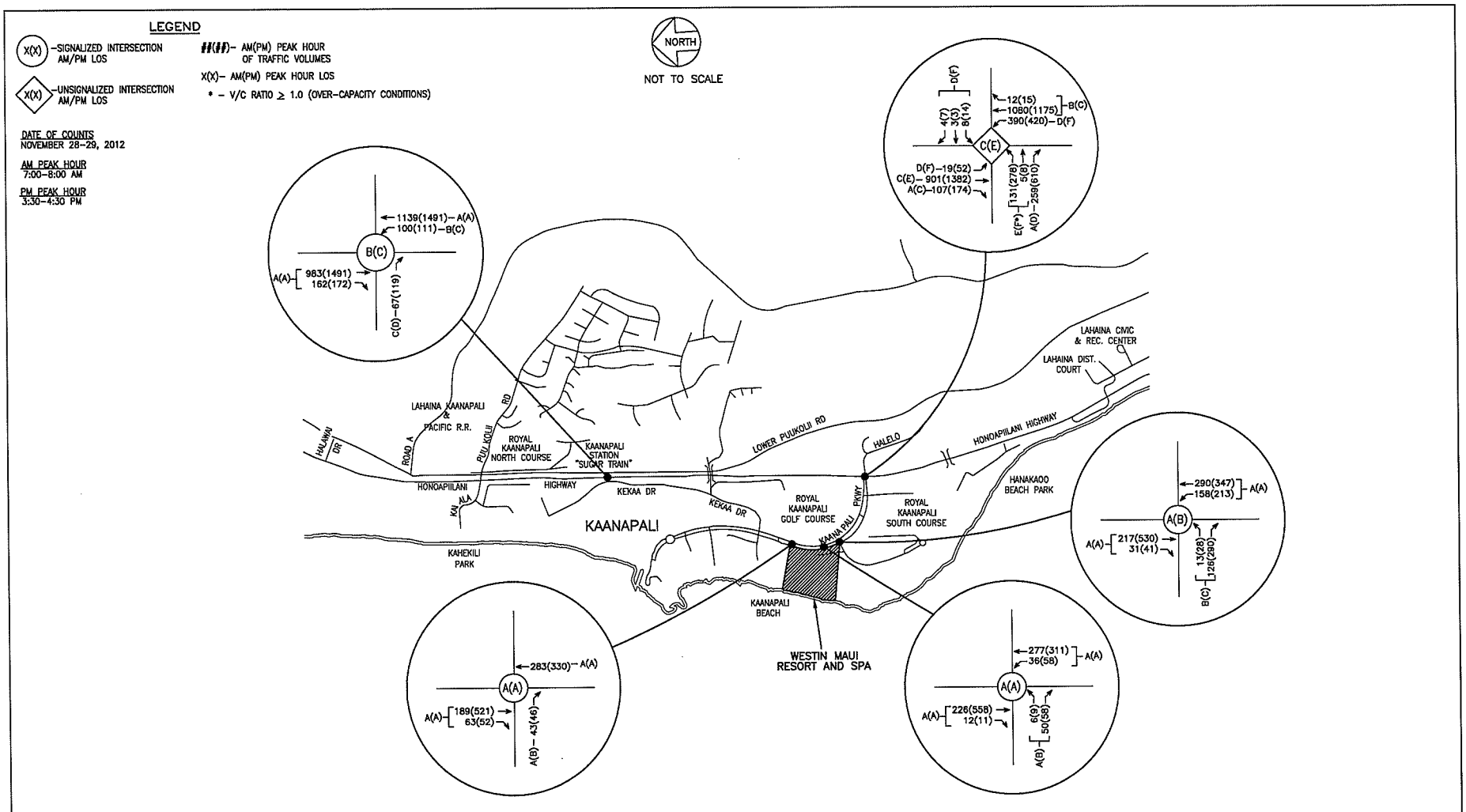


WESTIN MAUI REVITALIZATION	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE 3
	EXISTING LANE CONFIGURATION	



WESTIN MAUI REVITALIZATION	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE
	EXISTING TRAFFIC VOLUMES AND LEVEL OF SERVICE (LOS) (SEASONALLY ADJUSTED)	4

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TABLE 1
Existing Conditions - Intersection Analysis

Intersection	Existing 2012					
	AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
Honoapiilani Highway/Kaanapali Parkway						
EB LT/TH	79.5	0.83	E	297.6	1.45	F
EB RT	4.4	0.23	A	45.9	0.49	D
WB LT/TH/RT	35.6	0.06	D	127.7	0.63	F
NB LT	37.1	0.55	D	87.4	0.82	F
NB TH/RT	11.7	0.5	B	23.0	0.56	C
SB LT	51.5	0.12	D	98.2	0.15	F
SB TH	23.3	0.62	C	58.6	0.9	E
SB RT	3.1	0.15	A	33.2	0.18	C
Overall	21.2	0.83	C	71.8	0.99	E
Honoapiilani Highway/Kekaa Drive						
EB RT	15.1	0.17	C	28.5	0.46	D
NB LT	13.1	0.2	B	21.6	0.36	C
NB TH	0.0	0.36	A	0.0	0.48	A
SB TH	0.0	0.42	A	0.0	0.64	A
SB TH/RT	0.0	0.26	A	0.0	0.37	A
Kaanapali Parkway/ Nohea Kai Drive						
EB LT/RT	11.2	0.12	B	22.0	0.47	C
NB LT/TH	0.6	0.13	A	1.3	0.24	A
NB TH	1.4	0.13	A	2.0	0.24	A
SB TH	0.0	0.09	A	0.0	0.23	A
SB TH/RT	0.0	0.06	A	0.0	0.13	A
Kaanapali Parkway/Westin Maui Main Driveway						
EB LT/RT	9.8	0.04	A	13.0	0.08	B
NB LT/TH	0.1	0.03	A	0.3	0.07	A
NB TH	0.5	0.12	A	0.8	0.13	A
SB TH	0.0	0.1	A	0.0	0.24	A
SB TH/RT	0.0	0.05	A	0.0	0.12	A
Kaanapali Parkway/Westin Maui Back of House Access						
EB RT	9.3	0.05	A	10.7	0.07	B
NB TH	0.0	0.09	A	0.0	0.11	A
SB TH	0.0	0.08	A	0.0	0.22	A
SB TH/RT	0.0	0.06	A	0.0	0.13	A

NOTES:
v/c Ratio $\geq$ **1.0** = Over-Capacity Condition

III. MITIGATION OF EXISTING TRAFFIC OPERATIONS

The State of Hawaii Department of Transportation (HDOT) is implementing roadway projects in the Lahaina-Kaanapali area to mitigate existing traffic conditions along Honoapiilani Highway. Additionally, due to the existing conditions, some movements at the Honoapiilani Highway/Kaanapali Parkway operate at LOS F or LOS E. This section will discuss improvements to mitigate the existing deficiencies.

A. Lahaina Bypass Road

According to the Final Supplemental Environmental Impact Statement for Honoapiilani Highway, Launiupoko to Honokowai, the Lahaina Bypass Road is planned as a limited access highway between Launiupoko and Honokowai, generally parallel and to the east of Honoapiilani Highway on the slopes of the West Maui Mountains. It is proposed to be built initially as a two-lane highway and will ultimately be widened to a four-lane highway. Proposed connector roadways at Puukolii, Kaanapali, Wahikuli, Kapunakea, Lahainaluna Road, and Puamana will provide vehicular circulation between Honoapiilani Highway and the Lahaina Bypass Road.

The Lahaina Bypass Road is included in the February 1997 Maui Long Range Land Transportation Plan (MLRLTP) and proposed to be constructed by HDOT. The roadway will improve the traffic operations on Honoapiilani Highway within the Kaanapali/Lahaina corridor between Honokowai and Puamana. According to HDOT, the total buildout of Lahaina Bypass Road is expected to be completed by the year 2020.

The Lahaina Bypass Road is designed to relieve Honoapiilani Highway of some northbound and southbound traffic volumes. Currently, the portion of the Lahaina Bypass Road between Lahainaluna Road and Keawe Street has been completed.

B. Existing Traffic Analysis with Mitigation

Without consideration of the Lahaina Bypass Road, the Honoapiilani Highway/Kaanapali Parkway's eastbound approach will have to be modified to incorporate two (2) dedicated left-turn lanes, a shared through/right-turn lane and a dedicated right-turn lane to achieve LOS E or better. This lane configuration is

consistent with the recommendations of previous reports conducted by Austin, Tsutsumi & Associates, Inc. and current information.

During the PM peak hour of traffic, the southbound left-turn and westbound left-turn/through/right-turn movements (Halelo Street approach) operate at LOS E. However, these movements are low volume movements.

Therefore, with the completion of the Lahaina Bypass Road, the northbound through and southbound through volumes will decrease, allowing the intersection to operate with improved LOS.

Table 2 summarizes the existing LOS At the study intersections. LOS worksheets are provided in Appendix C.

TABLE 2
Existing Conditions with Mitigation - Intersection Analysis

Intersection	Existing 2012 with Mitigation					
	AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
Honoapiilani Highway/Kaanapali Parkway						
EB LT	43.1	0.3	D	52.9	0.6	D
EB TH/RT	14.6	0.43	B	13.6	0.67	B
EB RT	6	0.21	A	21.9	0.54	C
WB LT/TH/RT	35	0.06	C	36.5	0.12	D
NB LT	38.8	0.59	D	54.4	0.75	D
NB TH/RT	13.5	0.53	B	21.2	0.62	C
SB LT	53.1	0.13	D	63.5	0.4	E
SB TH	25.8	0.67	C	40	0.91	D
SB RT	0.4	0.15	A	3.4	0.22	A
Overall	21.6	0.67	C	32.3	0.91	C

NOTES:
v/c Ratio $\geq$ **1.0** = Over-Capacity Condition

IV. CONCLUSION AND RECOMMENDATIONS

The existing traffic volumes were adjusted to account for the below average occupancy rate at the Maui Westin during the on-site traffic counts conducted in November 2012. In addition to the trips entering/exiting the Maui Westin, the existing traffic volume along Honoapiilani Highway and those entering/exiting Kaanapali Parkway were also increased by 10.9 percent based on the DBEDT information obtained for Years 2011 and 2012.

In accordance with the ITE Trip Generation, 9th Edition, trip generation is estimated based on an average day during the morning and afternoon peak hours. Since it is typical for hotel amenities to be utilized by guests of the hotel and ballrooms and meeting rooms do not consistently generate trips during the peak hours of traffic, the trips generated for resort hotel type uses are based on the number of hotel rooms. Since the Proposed Project will not be constructing additional rooms, additional trips during the peak hours of traffic are not anticipated.

Existing Conditions

With the exception of the Honoapiilani Highway/Kaanapali Parkway intersection, the study intersections operate at LOS C or better and are expected to continue operating at LOS C or better. Impacts to the Honoapiilani Highway/Kaanapali Parkway intersection are a result of the increase in regional traffic volumes. Therefore, as recommended in other Traffic Impact Analysis Reports, and without the proposed Project the Honoapiilani Highway/Kaanapali Parkway intersection eastbound approach would need to be modified to provide two (2) exclusive left-turn lanes, a shared through/right-turn lane, and an exclusive right-turn lane, in order for the existing intersection to operate at LOS E or better, where the movements operating at LOS E are low volume movements. Additionally, with the completion of the Lahaina Bypass Road, traffic volumes along Honoapiilani Highway would be relieved of some northbound and southbound through traffic at the Honoapiilani Highway/Kaanapali Parkway intersection. These recommendations are a result of the existing conditions and not the proposed Project.

With Project Conditions

There are no mitigative measures proposed by the Proposed Project, since the Proposed Project does not anticipate additional trips during the peak hours of traffic.

V. REFERENCES

1. Austin, Tsutsumi and Associates, Inc., Traffic Impact Analysis Report, Kaanapali Ocean Resort, Lot 3, July 2006.

2. Austin, Tsutsumi and Associates, Inc., Traffic Impact Analysis Report, Westin Kaanapali Ocean Resort Villas Expansion, November 2003.

3. Austin, Tsutsumi and Associates, Inc., Traffic Impact Analysis Report, Pulelehua, May 2009.

4. Institute of Transportation Engineers, Trip Generation, 8th Edition, 2008.

5. Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012.

6. Transportation Research Board, Highway Capacity Manual, 2000.

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APPENDICES

APPENDIX A

TRAFFIC COUNT DATA

Austin Tsutsumi & Associates

501 Sumner St. Ste. 521
Honolulu, HI 96817
(808) 533-3646

File Name : AM_Honoapiilani - Kaanapali
Site Code : 00000000
Start Date : 11/29/2012
Page No : 1

Groups Printed- Unshifted

	HONOAPIILANI From North					KAANAPALI From East					HONOAPIILANI From South					KAANAPALI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:45 AM	17	213	2	0	232	1	2	0	0	3	3	163	82	0	248	42	1	21	0	64	547
Total	17	213	2	0	232	1	2	0	0	3	3	163	82	0	248	42	1	21	0	64	547
07:00 AM	18	270	1	0	289	0	0	1	0	1	2	132	67	0	201	59	1	14	0	74	565
07:15 AM	31	251	4	3	289	0	3	5	0	8	2	219	99	0	320	35	3	29	0	67	684
07:30 AM	27	216	1	0	244	1	2	3	0	6	1	295	108	0	404	61	3	39	2	105	759
07:45 AM	22	211	5	0	238	2	1	2	0	5	6	267	98	0	371	37	2	25	0	64	678
Total	98	948	11	3	1060	3	6	11	0	20	11	913	372	0	1296	192	9	107	2	310	2686
08:00 AM	24	199	7	0	230	1	0	2	0	3	3	227	65	1	296	56	0	24	0	80	609
08:15 AM	20	186	6	0	212	0	0	1	0	1	2	184	70	0	256	67	0	24	0	91	560
08:30 AM	16	137	1	0	154	2	3	2	0	7	2	112	26	0	140	55	1	22	0	78	379
Grand Total	175	1683	27	3	1888	7	11	16	0	34	21	1599	615	1	2236	412	11	198	2	623	4781
Apprch %	9.3	89.1	1.4	0.2		20.6	32.4	47.1	0		0.9	71.5	27.5	0		66.1	1.8	31.8	0.3		
Total %	3.7	35.2	0.6	0.1	39.5	0.1	0.2	0.3	0	0.7	0.4	33.4	12.9	0	46.8	8.6	0.2	4.1	0	13	

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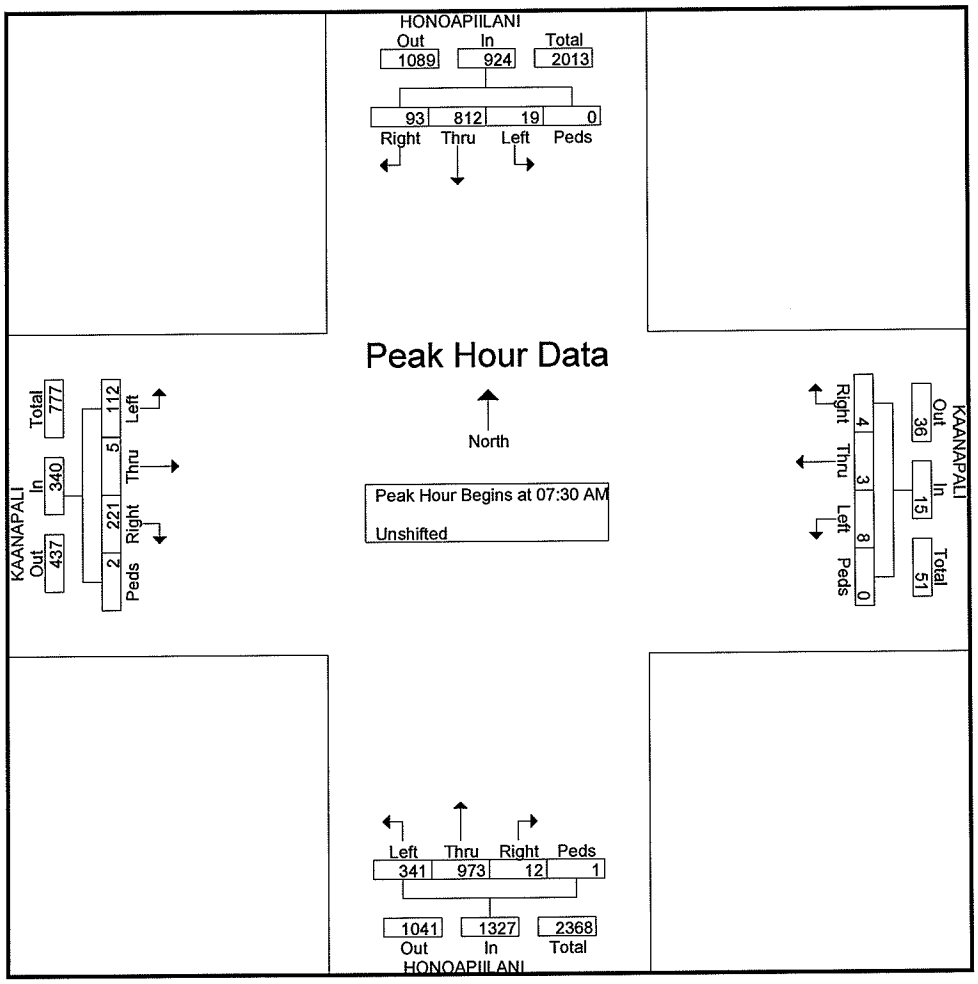
File Name : AM_Honoapiilani - Kaanapali
Site Code : 00000000
Start Date : 11/29/2012
Page No : 2

	HONOAPIILANI From North					KAANAPALI From East					HONOAPIILANI From South					KAANAPALI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**27**	**216**	1	0	**244**	1	**2**	**3**	0	**6**	1	**295**	**108**	0	**404**	61	**3**	**39**	**2**	**105**	**759**
07:45 AM	22	211	5	0	238	**2**	1	2	0	5	**6**	267	98	0	371	37	2	25	0	64	678
08:00 AM	24	199	**7**	0	230	1	0	2	0	3	3	227	65	**1**	296	56	0	24	0	80	609
08:15 AM	20	186	6	0	212	0	0	1	0	1	2	184	70	0	256	**67**	0	24	0	91	560
Total Volume	93	812	19	0	924	4	3	8	0	15	12	973	341	1	1327	221	5	112	2	340	2606
% App. Total	10.1	87.9	2.1	0		26.7	20	53.3	0		0.9	73.3	25.7	0.1		65	1.5	32.9	0.6		
PHF	.861	.940	.679	.000	.947	.500	.375	.667	.000	.625	.500	.825	.789	.250	.821	.825	.417	.718	.250	.810	.858



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File Name : AM_Honoapiilani - Kekaa
Site Code : 00000000
Start Date : 11/29/2012
Page No : 1

Groups Printed- Unshifted

	HONOAPIILANI From North					KEKAA From East					HONOAPIILANI From South					KEKAA From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:45 AM	16	200	0	0	216	0	0	0	0	0	0	160	14	0	174	6	0	1	0	7	397
Total	16	200	0	0	216	0	0	0	0	0	0	160	14	0	174	6	0	1	0	7	397
07:00 AM	22	283	0	1	306	0	0	0	0	0	0	140	12	0	152	10	1	0	0	11	469
07:15 AM	22	263	0	0	285	0	0	0	0	0	0	219	26	0	245	11	0	0	0	11	541
07:30 AM	33	255	0	0	288	0	0	0	0	0	0	289	32	0	321	12	0	0	0	12	621
07:45 AM	47	226	0	0	273	0	0	0	0	0	0	280	24	0	304	18	0	0	0	18	595
Total	124	1027	0	1	1152	0	0	0	0	0	0	928	94	0	1022	51	1	0	0	52	2226
08:00 AM	36	195	0	0	231	0	0	0	0	0	0	246	21	0	267	15	0	1	0	16	514
08:15 AM	30	210	0	0	240	0	0	0	0	0	0	212	13	0	225	15	0	0	0	15	480
08:30 AM	37	223	0	0	260	0	0	0	0	0	0	195	19	0	214	7	0	0	0	7	481
Grand Total	243	1855	0	1	2099	0	0	0	0	0	0	1741	161	0	1902	94	1	2	0	97	4098
Apprch %	11.6	88.4	0	0		0	0	0	0		0	91.5	8.5	0		96.9	1	2.1	0		
Total %	5.9	45.3	0	0	51.2	0	0	0	0	0	0	42.5	3.9	0	46.4	2.3	0	0	0	2.4	

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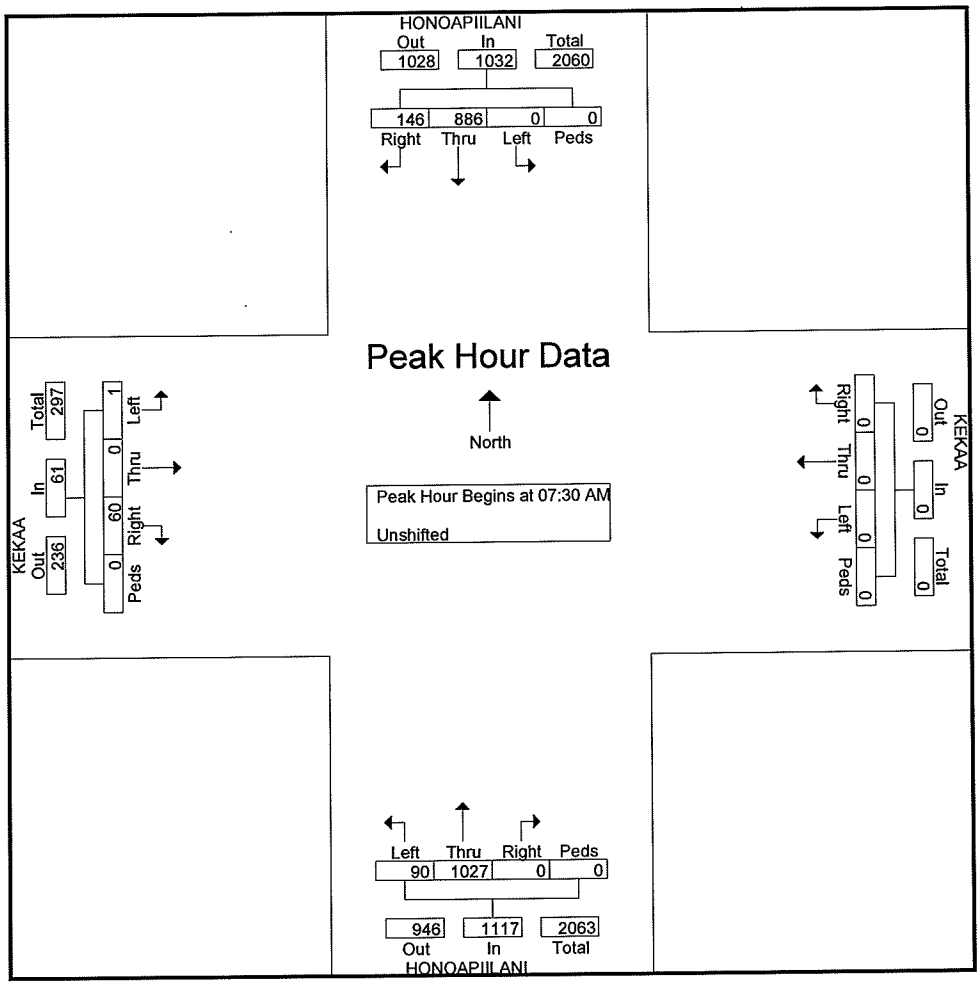
Start Date : 11/29/2012
Page No : 2

	HONOAPIILANI From North					KEKAA From East					HONOAPIILANI From South					KEKAA From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	33	**255**	0	0	**288**	0	0	0	0	0	0	**289**	**32**	0	**321**	12	0	0	0	12	**621**
07:45 AM	**47**	226	0	0	273	0	0	0	0	0	0	280	24	0	304	**18**	0	0	0	**18**	595
08:00 AM	36	195	0	0	231	0	0	0	0	0	0	246	21	0	267	15	0	**1**	0	16	514
08:15 AM	30	210	0	0	240	0	0	0	0	0	0	212	13	0	225	15	0	0	0	15	480
Total Volume	146	886	0	0	1032	0	0	0	0	0	0	1027	90	0	1117	60	0	1	0	61	2210
% App. Total	14.1	85.9	0	0		0	0	0	0		0	91.9	8.1	0		98.4	0	1.6	0		
PHF	.777	.869	.000	.000	.896	.000	.000	.000	.000	.000	.000	.888	.703	.000	.870	.833	.000	.250	.000	.847	.890



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File Name : AM_Kaanapali - Nohea Kai
Site Code : 00000000
Start Date : 11/29/2012
Page No : 1

Groups Printed- Unshifted

	KAANAPALI From North					NOHEA KAI From East					KAANAPALI From South					NOHEA KAI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	4	18	0	0	22	0	0	0	0	0	0	35	26	2	63	19	0	5	12	36	121
06:45 AM	10	31	0	0	41	0	0	0	0	0	0	52	25	0	77	24	0	5	9	38	156
Total	14	49	0	0	63	0	0	0	0	0	0	87	51	2	140	43	0	10	21	74	277
07:00 AM	8	51	0	0	59	0	0	0	0	0	0	47	20	0	67	27	0	3	7	37	163
07:15 AM	4	44	0	0	48	0	0	0	0	0	0	68	45	0	113	19	0	5	15	39	200
07:30 AM	5	45	0	0	50	0	0	0	0	0	0	56	53	0	109	29	0	3	22	54	213
07:45 AM	9	32	0	0	41	0	0	0	0	0	0	66	38	0	104	31	0	2	24	57	202
Total	26	172	0	0	198	0	0	0	0	0	0	237	156	0	393	106	0	13	68	187	778
08:00 AM	9	50	0	0	59	0	0	0	0	0	0	58	22	0	80	20	0	4	19	43	182
08:15 AM	8	48	0	0	56	0	0	0	0	0	0	64	28	0	92	31	0	4	14	49	197
08:30 AM	7	67	0	0	74	0	0	0	0	0	0	59	25	0	84	39	0	7	13	59	217
Grand Total	64	386	0	0	450	0	0	0	0	0	0	505	282	2	789	239	0	38	135	412	1651
Apprch %	14.2	85.8	0	0		0	0	0	0		0	64	35.7	0.3		58	0	9.2	32.8		
Total %	3.9	23.4	0	0	27.3	0	0	0	0	0	0	30.6	17.1	0.1	47.8	14.5	0	2.3	8.2	25	

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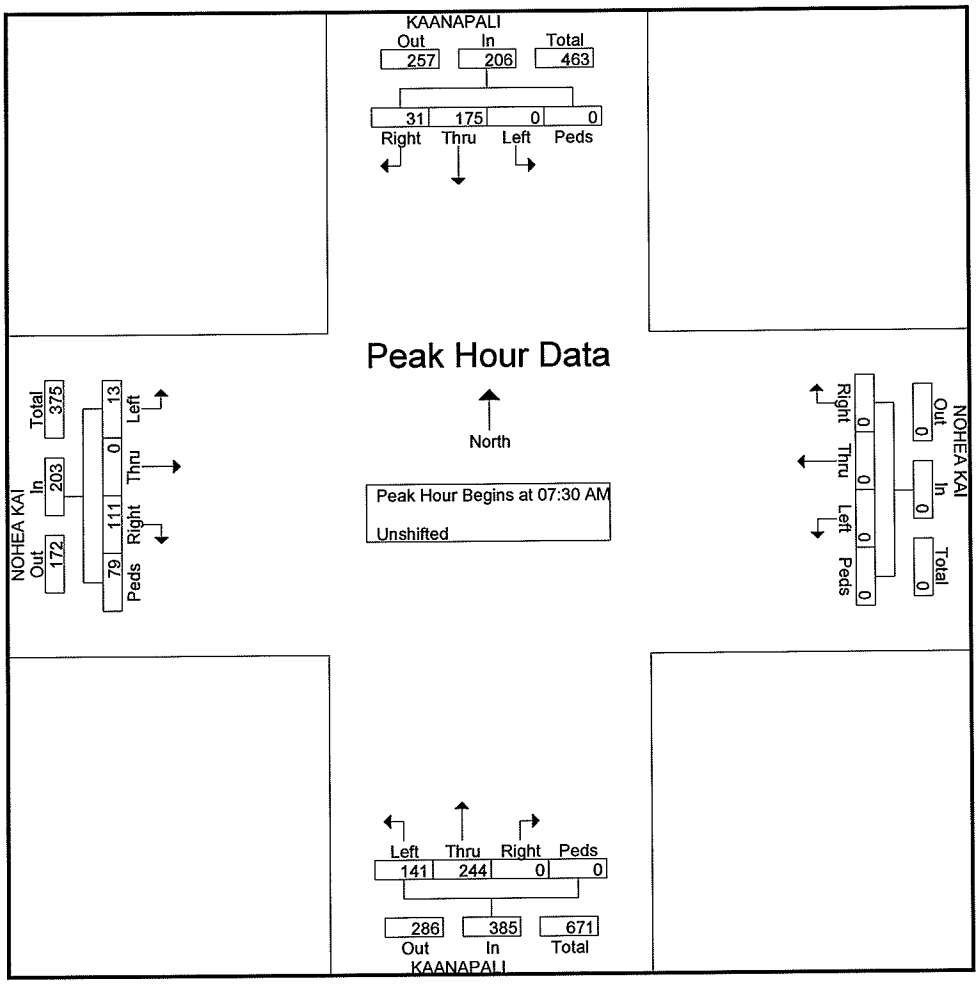
File Name : AM_Kaanapali - Nohea Kai
Site Code : 00000000
Start Date : 11/29/2012
Page No : 2

	KAANAPALI From North					NOHEA KAI From East					KAANAPALI From South					NOHEA KAI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	5	45	0	0	50	0	0	0	0	0	0	56	**53**	0	**109**	29	0	3	22	54	**213**
07:45 AM	**9**	32	0	0	41	0	0	0	0	0	0	**66**	38	0	104	**31**	0	2	**24**	**57**	202
08:00 AM	9	**50**	0	0	**59**	0	0	0	0	0	0	58	22	0	80	20	0	**4**	19	43	182
08:15 AM	8	48	0	0	56	0	0	0	0	0	0	64	28	0	92	31	0	4	14	49	197
Total Volume	31	175	0	0	206	0	0	0	0	0	0	244	141	0	385	111	0	13	79	203	794
% App. Total	15	85	0	0		0	0	0	0		0	63.4	36.6	0		54.7	0	6.4	38.9		
PHF	.861	.875	.000	.000	.873	.000	.000	.000	.000	.000	.000	.924	.665	.000	.883	.895	.000	.813	.823	.890	.932



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File Name : AM_Kaanapali - Westin Main
Site Code : 00000000
Start Date : 11/29/2012
Page No : 1

Groups Printed- Unshifted

	KAANAPALI From North					WESTIN MAIN From East					KAANAPALI From South					WESTIN MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:45 AM	3	34	0	0	37	0	0	0	0	0	0	53	1	0	54	6	0	2	0	8	99
Total	3	34	0	0	37	0	0	0	0	0	0	53	1	0	54	6	0	2	0	8	99
07:00 AM	1	46	0	0	47	0	0	0	0	0	0	44	3	0	47	7	0	1	0	8	102
07:15 AM	0	39	0	0	39	0	0	0	0	0	0	60	10	0	70	11	0	1	0	12	121
07:30 AM	2	43	0	0	45	0	0	0	0	0	0	49	3	0	52	7	0	0	0	7	104
07:45 AM	2	31	0	0	33	0	0	0	0	0	0	59	8	0	67	5	0	1	0	6	106
Total	5	159	0	0	164	0	0	0	0	0	0	212	24	0	236	30	0	3	0	33	433
08:00 AM	2	51	0	0	53	0	0	0	0	0	0	49	4	0	53	8	0	3	0	11	117
08:15 AM	2	47	0	0	49	0	0	0	0	0	0	60	7	0	67	11	0	0	0	11	127
08:30 AM	1	62	0	0	63	0	0	0	0	0	0	56	4	0	60	12	0	0	0	12	135
Grand Total	13	353	0	0	366	0	0	0	0	0	0	430	40	0	470	67	0	8	0	75	911
Apprch %	3.6	96.4	0	0		0	0	0	0		0	91.5	8.5	0		89.3	0	10.7	0		
Total %	1.4	38.7	0	0	40.2	0	0	0	0	0	0	47.2	4.4	0	51.6	7.4	0	0.9	0	8.2	

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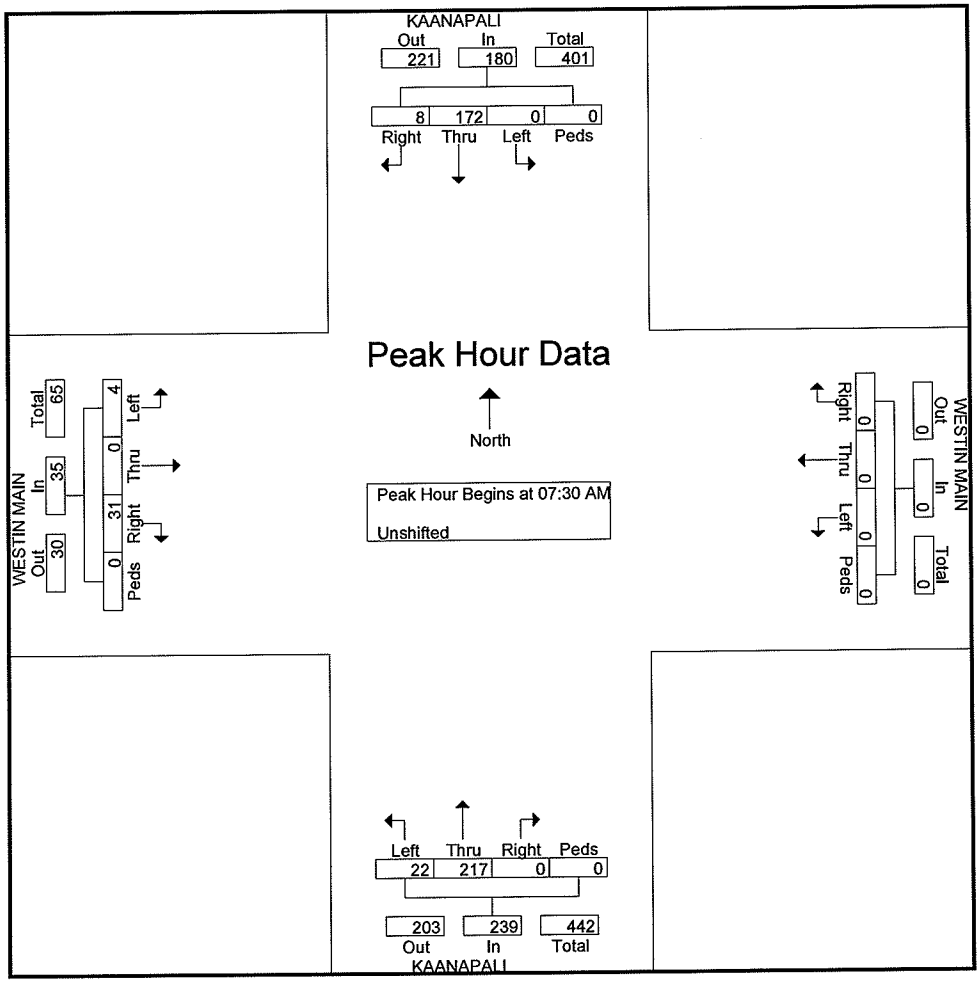
File Name : AM_Kaanapali - Westin Main
Site Code : 00000000
Start Date : 11/29/2012
Page No : 2

	KAANAPALI From North					WESTIN MAIN From East					KAANAPALI From South					WESTIN MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**2**	43	0	0	45	0	0	0	0	0	0	49	3	0	52	7	0	0	0	7	104
07:45 AM	2	31	0	0	33	0	0	0	0	0	0	59	**8**	0	**67**	5	0	1	0	6	106
08:00 AM	2	**51**	0	0	**53**	0	0	0	0	0	0	49	4	0	53	8	0	**3**	0	**11**	117
08:15 AM	2	47	0	0	49	0	0	0	0	0	0	**60**	7	0	67	**11**	0	0	0	11	**127**
Total Volume	8	172	0	0	180	0	0	0	0	0	0	217	22	0	239	31	0	4	0	35	454
% App. Total	4.4	95.6	0	0		0	0	0	0		0	90.8	9.2	0		88.6	0	11.4	0		
PHF	1.00	.843	.000	.000	.849	.000	.000	.000	.000	.000	.000	.904	.688	.000	.892	.705	.000	.333	.000	.795	.894



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File Name : AM_Kaanapali - Westin Back Gate
Site Code : 00000000
Start Date : 11/29/2012
Page No : 1

Groups Printed- Unshifted

	KAANAPALI From North					WESTIN BACK GATE From East					KAANAPALI From South					WESTIN BACK GATE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	7	20	0	0	27	0	0	0	0	0	0	36	0	0	36	3	0	0	4	7	70
06:45 AM	9	30	0	0	39	0	0	0	0	0	0	57	0	0	57	5	0	0	3	8	104
Total	16	50	0	0	66	0	0	0	0	0	0	93	0	0	93	8	0	0	7	15	174
07:00 AM	10	51	0	0	61	0	0	0	0	0	0	48	0	0	48	5	0	0	0	5	114
07:15 AM	9	40	0	0	49	0	0	0	0	0	0	64	0	0	64	8	0	0	7	15	128
07:30 AM	12	43	0	0	55	0	0	0	0	0	0	58	0	0	58	8	0	0	26	34	147
07:45 AM	13	35	0	0	48	0	0	0	0	0	0	64	0	0	64	6	0	0	0	6	118
Total	44	169	0	0	213	0	0	0	0	0	0	234	0	0	234	27	0	0	33	60	507
08:00 AM	16	50	0	0	66	0	0	0	0	0	0	62	0	0	62	13	0	0	6	19	147
08:15 AM	16	45	0	0	61	0	0	0	0	0	0	65	0	0	65	11	0	0	17	28	154
08:30 AM	12	54	0	0	66	0	0	0	0	0	0	65	0	0	65	17	0	0	11	28	159
Grand Total	104	368	0	0	472	0	0	0	0	0	0	519	0	0	519	76	0	0	74	150	1141
Apprch %	22	78	0	0		0	0	0	0		0	100	0	0		50.7	0	0	49.3		
Total %	9.1	32.3	0	0	41.4	0	0	0	0	0	0	45.5	0	0	45.5	6.7	0	0	6.5	13.1	

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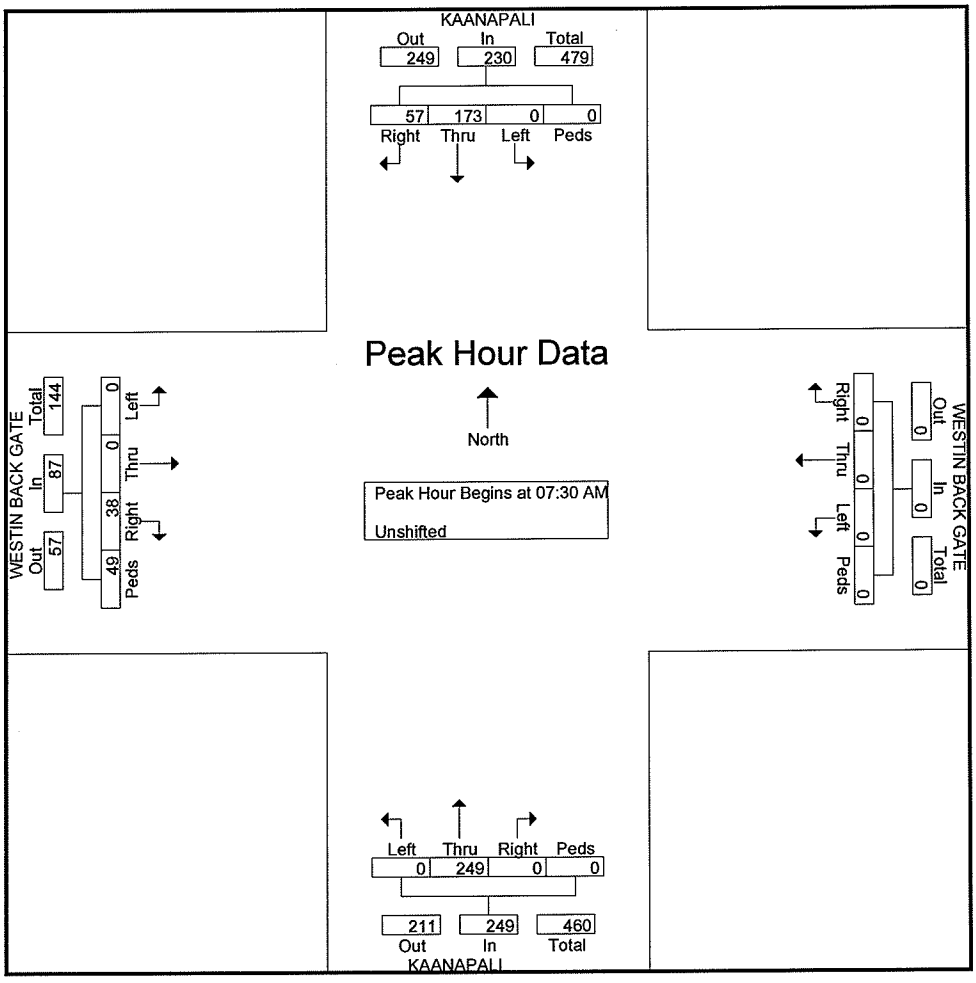
File Name : AM_Kaanapali - Westin Back Gate
Site Code : 00000000
Start Date : 11/29/2012
Page No : 2

	KAANAPALI From North					WESTIN BACK GATE From East					KAANAPALI From South					WESTIN BACK GATE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	12	43	0	0	55	0	0	0	0	0	0	58	0	0	58	8	0	0	**26**	**34**	147
07:45 AM	13	35	0	0	48	0	0	0	0	0	0	64	0	0	64	6	0	0	0	6	118
08:00 AM	**16**	**50**	0	0	**66**	0	0	0	0	0	0	62	0	0	62	**13**	0	0	6	19	147
08:15 AM	16	45	0	0	61	0	0	0	0	0	0	**65**	0	0	**65**	11	0	0	17	28	**154**
Total Volume	57	173	0	0	230	0	0	0	0	0	0	249	0	0	249	38	0	0	49	87	566
% App. Total	24.8	75.2	0	0		0	0	0	0		0	100	0	0		43.7	0	0	56.3		
PHF	.891	.865	.000	.000	.871	.000	.000	.000	.000	.000	.000	.958	.000	.000	.958	.731	.000	.000	.471	.640	.919



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File Name : PM_Honoapiilani - Kaanapali
Site Code : 00000000
Start Date : 11/28/2012
Page No : 1

Groups Printed- Unshifted

	HONOAPIILANI From North					KAANAPALI From East					HONOAPIILANI From South					KAANAPALI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	33	233	12	0	278	2	2	1	0	5	4	282	119	0	405	137	5	60	2	204	892
03:15 PM	26	233	7	0	266	1	2	1	0	4	2	243	97	0	342	118	1	53	0	172	784
03:30 PM	35	266	23	0	324	3	8	5	0	16	1	265	116	0	382	117	1	52	0	170	892
03:45 PM	31	247	4	0	282	2	0	6	0	8	3	235	106	0	344	125	1	63	1	190	824
Total	125	979	46	0	1150	8	12	13	0	33	10	1025	438	0	1473	497	8	228	3	736	3392
04:00 PM	36	333	16	0	385	4	1	1	0	6	2	290	99	0	391	195	3	80	0	278	1060
04:15 PM	38	349	17	0	404	0	2	4	0	6	6	255	111	0	372	133	1	54	0	188	970
04:30 PM	43	338	10	0	391	3	0	5	0	8	6	292	85	0	383	125	4	64	0	193	975
04:45 PM	34	226	9	0	269	0	0	4	0	4	1	222	69	0	292	84	0	45	0	129	694
Total	151	1246	52	0	1449	7	3	14	0	24	15	1059	364	0	1438	537	8	243	0	788	3699
Grand Total	276	2225	98	0	2599	15	15	27	0	57	25	2084	802	0	2911	1034	16	471	3	1524	7091
Apprch %	10.6	85.6	3.8	0		26.3	26.3	47.4	0		0.9	71.6	27.6	0		67.8	1	30.9	0.2		
Total %	3.9	31.4	1.4	0	36.7	0.2	0.2	0.4	0	0.8	0.4	29.4	11.3	0	41.1	14.6	0.2	6.6	0	21.5	

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File Name : PM_Honoapiilani - Kaanapali
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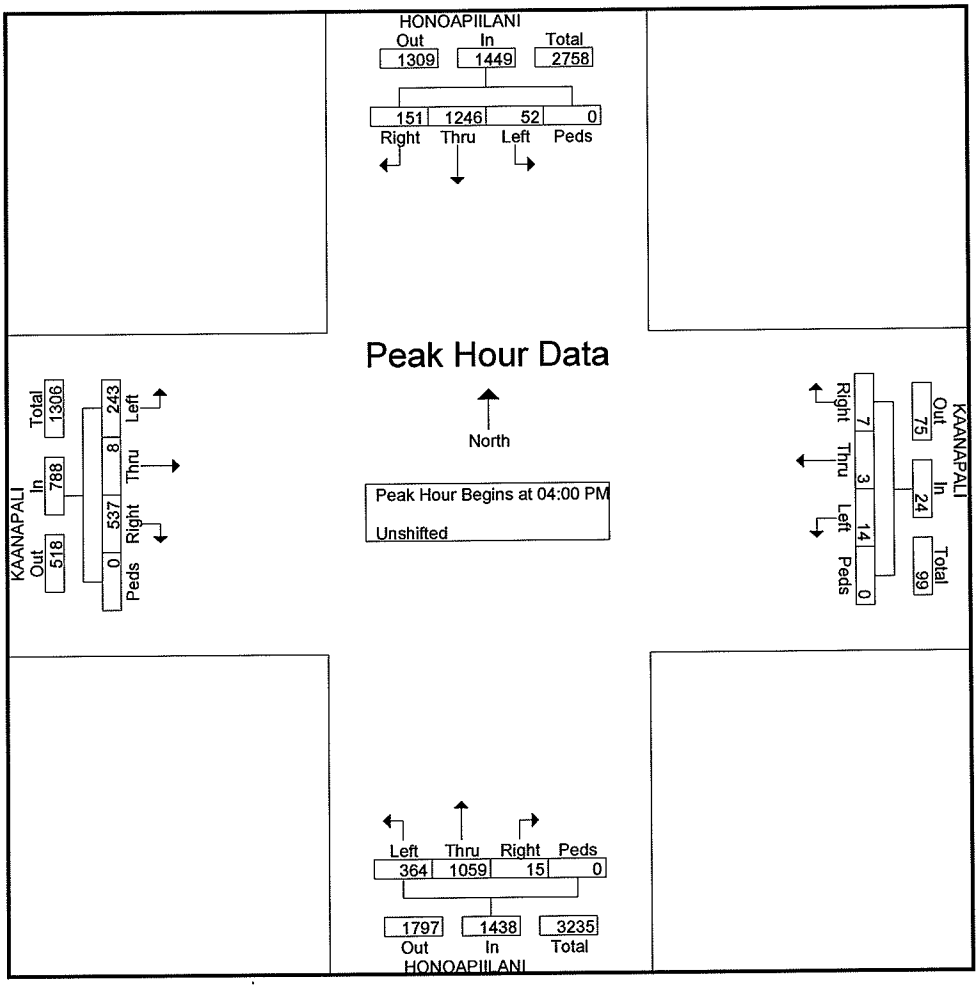
	HONOAPIILANI From North					KAANAPALI From East					HONOAPIILANI From South					KAANAPALI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	36	333	16	0	385	**4**	1	1	0	6	2	290	99	0	**391**	**195**	3	**80**	0	**278**	**1060**
04:15 PM	38	**349**	**17**	0	**404**	0	**2**	4	0	6	**6**	255	**111**	0	372	133	1	54	0	188	970
04:30 PM	**43**	338	10	0	391	3	0	**5**	0	**8**	6	**292**	85	0	383	125	**4**	64	0	193	975
04:45 PM	34	226	9	0	269	0	0	4	0	4	1	222	69	0	292	84	0	45	0	129	694
Total Volume	151	1246	52	0	1449	7	3	14	0	24	15	1059	364	0	1438	537	8	243	0	788	3699
% App. Total	10.4	86	3.6	0		29.2	12.5	58.3	0		1	73.6	25.3	0		68.1	1	30.8	0		
PHF	.878	.893	.765	.000	.897	.438	.375	.700	.000	.750	.625	.907	.820	.000	.919	.688	.500	.759	.000	.709	.872



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Start Date : 11/28/2012
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Groups Printed- Unshifted

	HONOAPIILANI From North					KEKAA From East					HONOAPIILANI From South					KEKAA From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	39	259	0	0	298	0	0	0	0	0	0	310	19	0	329	23	0	1	0	24	651
03:15 PM	33	235	0	0	268	0	0	0	0	0	0	297	20	0	317	12	0	2	0	14	599
03:30 PM	30	272	0	0	302	0	0	0	0	0	0	320	23	0	343	19	0	0	0	19	664
03:45 PM	34	274	0	0	308	0	0	0	0	0	0	243	23	0	266	21	0	0	0	21	595
Total	136	1040	0	0	1176	0	0	0	0	0	0	1170	85	0	1255	75	0	3	0	78	2509
04:00 PM	37	316	0	0	353	0	0	0	0	0	0	356	31	0	387	46	1	0	1	48	788
04:15 PM	32	349	0	0	381	0	0	0	0	0	0	308	22	0	330	25	1	1	0	27	738
04:30 PM	31	352	0	0	383	0	0	0	0	0	0	359	20	0	379	12	1	0	0	13	775
04:45 PM	55	327	0	0	382	0	0	0	0	0	0	321	27	0	348	24	1	0	0	25	755
Total	155	1344	0	0	1499	0	0	0	0	0	0	1344	100	0	1444	107	4	1	1	113	3056
Grand Total	291	2384	0	0	2675	0	0	0	0	0	0	2514	185	0	2699	182	4	4	1	191	5565
Apprch %	10.9	89.1	0	0		0	0	0	0		0	93.1	6.9	0		95.3	2.1	2.1	0.5		
Total %	5.2	42.8	0	0	48.1	0	0	0	0	0	0	45.2	3.3	0	48.5	3.3	0.1	0.1	0	3.4	

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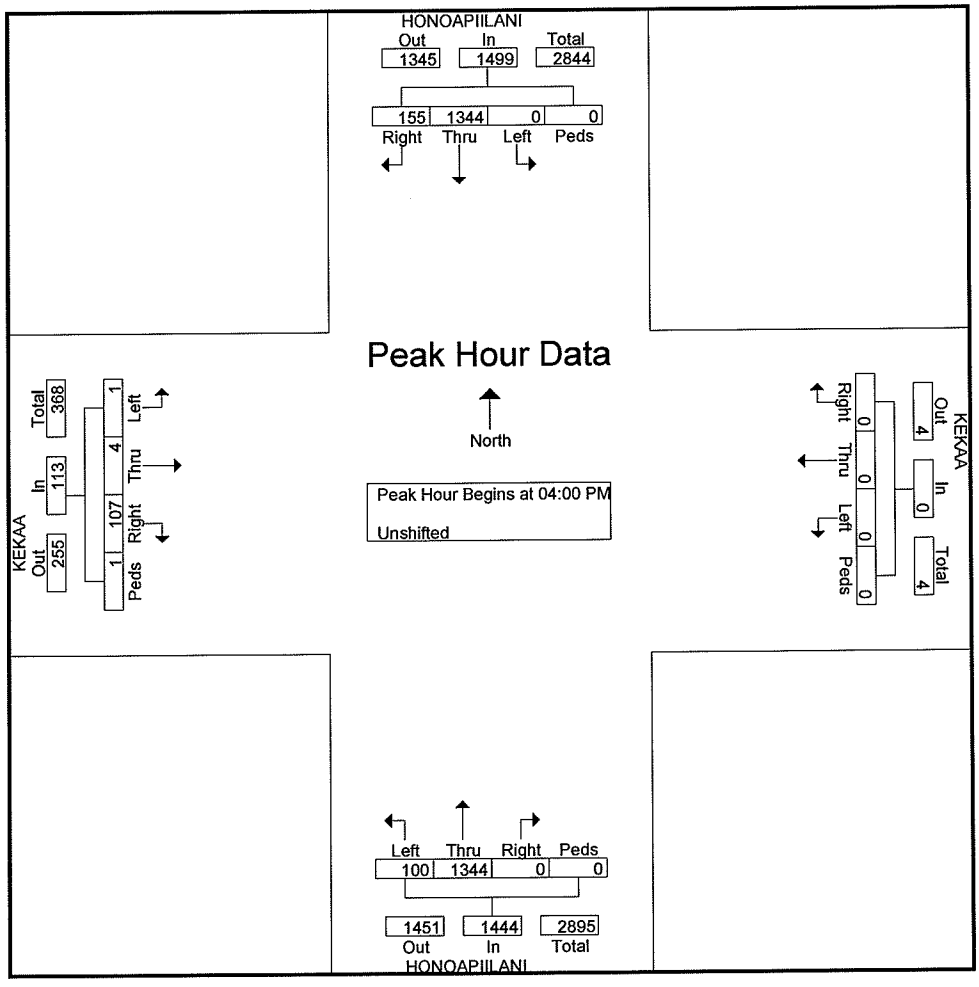
	HONOAPIILANI From North					KEKAA From East					HONOAPIILANI From South					KEKAA From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	37	316	0	0	353	0	0	0	0	0	0	356	**31**	0	**387**	**46**	**1**	0	**1**	**48**	**788**
04:15 PM	32	349	0	0	381	0	0	0	0	0	0	308	22	0	330	25	1	**1**	0	27	738
04:30 PM	31	**352**	0	0	**383**	0	0	0	0	0	0	**359**	20	0	379	12	1	0	0	13	775
04:45 PM	**55**	327	0	0	382	0	0	0	0	0	0	321	27	0	348	24	1	0	0	25	755
Total Volume	155	1344	0	0	1499	0	0	0	0	0	0	1344	100	0	1444	107	4	1	1	113	3056
% App. Total	10.3	89.7	0	0		0	0	0	0		0	93.1	6.9	0		94.7	3.5	0.9	0.9		
PHF	.705	.955	.000	.000	.978	.000	.000	.000	.000	.000	.000	.936	.806	.000	.933	.582	1.00	.250	.250	.589	.970



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Groups Printed- Unshifted

	KAANAPALI From North					From East					KAANAPALI From South					NOHEA KAI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	10	110	0	1	121	0	0	0	0	0	0	78	43	0	121	49	0	8	8	65	307
03:15 PM	5	77	0	0	82	0	0	0	0	0	0	77	30	0	107	36	0	7	8	51	240
03:30 PM	16	109	0	0	125	0	0	0	0	0	0	92	47	0	139	37	0	6	13	56	320
03:45 PM	13	90	0	0	103	0	0	0	0	0	0	70	38	0	108	46	0	8	0	54	265
Total	44	386	0	1	431	0	0	0	0	0	0	317	158	0	475	168	0	29	29	226	1132
04:00 PM	7	143	1	0	151	0	0	0	0	0	0	67	46	0	113	92	1	10	11	114	378
04:15 PM	11	108	1	0	120	0	0	0	0	0	0	58	58	0	116	58	0	6	8	72	308
04:30 PM	14	107	0	0	121	0	0	0	0	0	0	86	40	0	126	63	0	9	7	79	326
04:45 PM	9	96	0	1	106	0	0	0	0	0	0	79	47	0	126	45	1	3	9	58	290
Total	41	454	2	1	498	0	0	0	0	0	0	290	191	0	481	258	2	28	35	323	1302
Grand Total	85	840	2	2	929	0	0	0	0	0	0	607	349	0	956	426	2	57	64	549	2434
Apprch %	9.1	90.4	0.2	0.2		0	0	0	0		0	63.5	36.5	0		77.6	0.4	10.4	11.7		
Total %	3.5	34.5	0.1	0.1	38.2	0	0	0	0	0	0	24.9	14.3	0	39.3	17.5	0.1	2.3	2.6	22.6	

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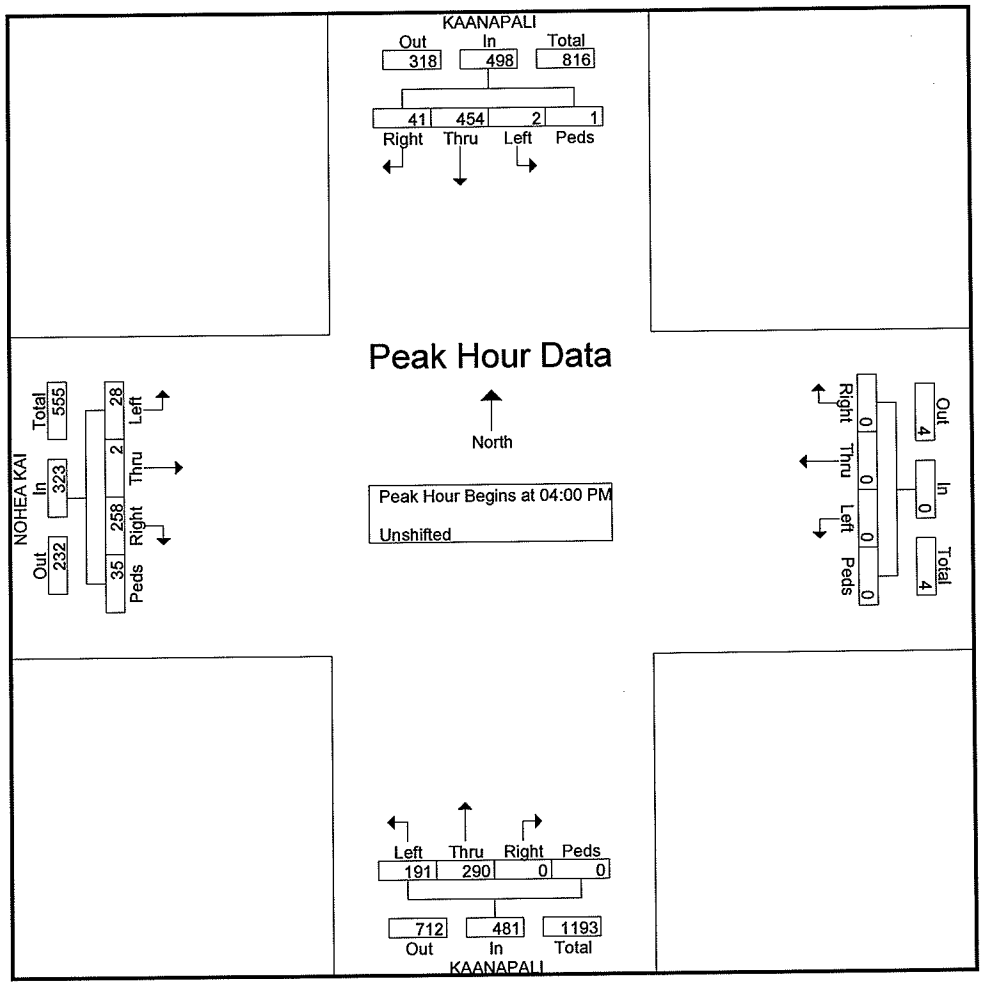
	KAANAPALI From North					From East					KAANAPALI From South					NOHEA KAI From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	7	**143**	**1**	0	**151**	0	0	0	0	0	0	67	46	0	113	**92**	**1**	**10**	**11**	**114**	**378**
04:15 PM	11	108	1	0	120	0	0	0	0	0	0	58	**58**	0	116	58	0	6	8	72	308
04:30 PM	**14**	107	0	0	121	0	0	0	0	0	0	**86**	40	0	**126**	63	0	9	7	79	326
04:45 PM	9	96	0	1	106	0	0	0	0	0	0	79	47	0	126	45	1	3	9	58	290
Total Volume	41	454	2	1	498	0	0	0	0	0	0	290	191	0	481	258	2	28	35	323	1302
% App. Total	8.2	91.2	0.4	0.2		0	0	0	0		0	60.3	39.7	0		79.9	0.6	8.7	10.8		
PHF	.732	.794	.500	.250	.825	.000	.000	.000	.000	.000	.000	.843	.823	.000	.954	.701	.500	.700	.795	.708	.861



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File Name : PM_Kaanapali - Westin Back Gate
Site Code : 00000000
Start Date : 11/28/2012
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Groups Printed- Unshifted

	KAANAPALI From North					WESTIN BACK GATE From East					KAANAPALI From South					WESTIN BACK GATE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	14	110	0	0	124	0	0	0	0	0	0	78	0	0	78	13	0	0	14	27	229
03:15 PM	13	65	0	0	78	0	0	0	0	0	0	85	0	0	85	13	0	0	23	36	199
03:30 PM	10	135	0	0	145	0	0	0	0	0	0	86	0	0	86	14	0	0	16	30	261
03:45 PM	6	105	0	0	111	0	0	0	0	0	0	71	0	0	71	7	0	0	7	14	196
Total	43	415	0	0	458	0	0	0	0	0	0	320	0	0	320	47	0	0	60	107	885
04:00 PM	15	148	0	0	163	0	0	0	0	0	0	71	0	0	71	17	0	0	19	36	270
04:15 PM	11	120	0	0	131	0	0	0	0	0	0	60	0	0	60	8	0	0	14	22	213
04:30 PM	12	126	0	0	138	0	0	0	0	0	0	85	0	0	85	6	0	0	16	22	245
04:45 PM	9	79	0	0	88	0	0	0	0	0	0	76	0	0	76	10	0	0	12	22	186
Total	47	473	0	0	520	0	0	0	0	0	0	292	0	0	292	41	0	0	61	102	914
Grand Total	90	888	0	0	978	0	0	0	0	0	0	612	0	0	612	88	0	0	121	209	1799
Apprch %	9.2	90.8	0	0		0	0	0	0		0	100	0	0		42.1	0	0	57.9		
Total %	5	49.4	0	0	54.4	0	0	0	0	0	0	34	0	0	34	4.9	0	0	6.7	11.6	

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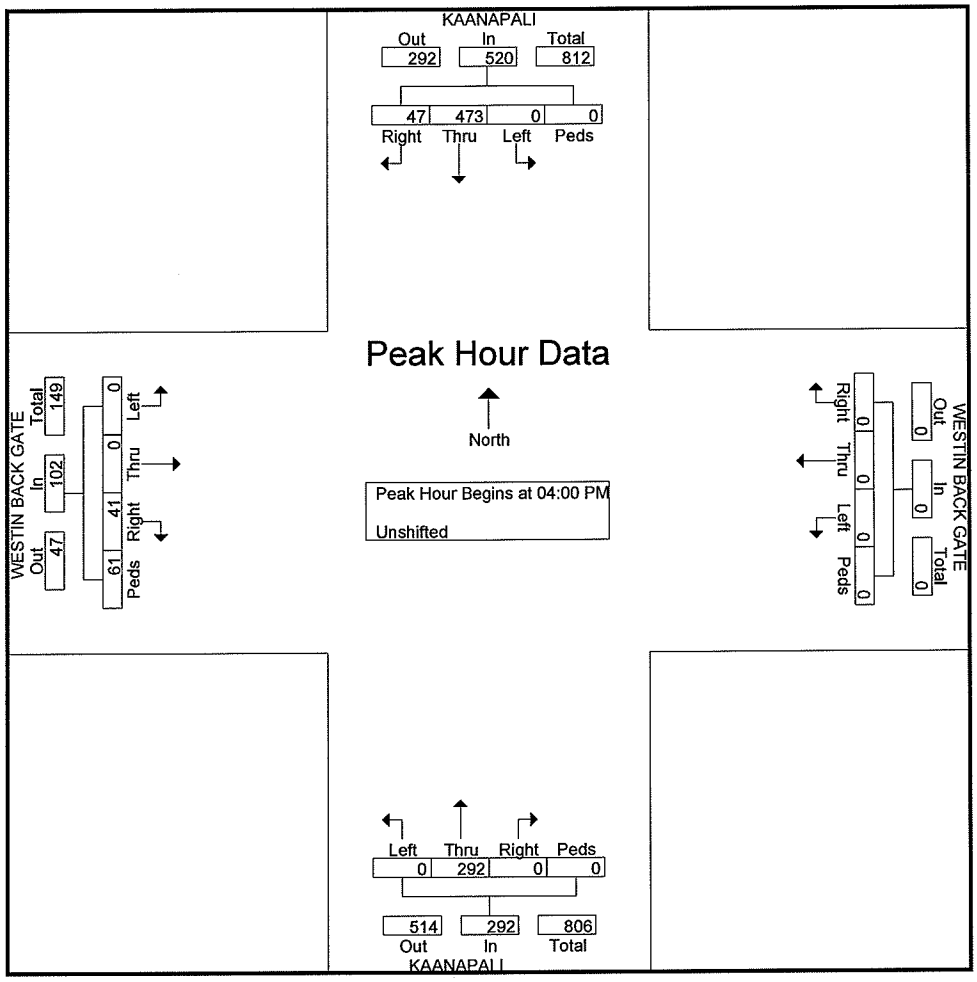
	KAANAPALI From North					WESTIN BACK GATE From East					KAANAPALI From South					WESTIN BACK GATE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**15**	**148**	0	0	**163**	0	0	0	0	0	0	71	0	0	71	**17**	0	0	**19**	**36**	**270**
04:15 PM	11	120	0	0	131	0	0	0	0	0	0	60	0	0	60	8	0	0	14	22	213
04:30 PM	12	126	0	0	138	0	0	0	0	0	0	**85**	0	0	**85**	6	0	0	16	22	245
04:45 PM	9	79	0	0	88	0	0	0	0	0	0	76	0	0	76	10	0	0	12	22	186
Total Volume	47	473	0	0	520	0	0	0	0	0	0	292	0	0	292	41	0	0	61	102	914
% App. Total	9	91	0	0		0	0	0	0		0	100	0	0		40.2	0	0	59.8		
PHF	.783	.799	.000	.000	.798	.000	.000	.000	.000	.000	.000	.859	.000	.000	.859	.603	.000	.000	.803	.708	.846



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File Name : PM_Kaanapali - Westin Main
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Groups Printed- Unshifted

	KAANAPALI From North					WESTIN MAIN From East					KAANAPALI From South					WESTIN MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	3	116	0	0	119	0	0	0	0	0	0	64	8	0	72	4	0	2	0	6	197
03:15 PM	7	66	0	0	73	0	0	0	0	0	0	85	8	0	93	11	0	2	0	13	179
03:30 PM	0	135	0	0	135	0	0	0	0	0	0	81	10	0	91	9	0	1	0	10	236
03:45 PM	6	115	0	0	121	0	0	0	0	0	0	68	6	0	74	6	0	2	0	8	203
Total	16	432	0	0	448	0	0	0	0	0	0	298	32	0	330	30	0	7	0	37	815
04:00 PM	2	145	0	0	147	0	0	0	0	0	0	66	7	0	73	7	0	1	0	8	228
04:15 PM	1	129	0	0	130	0	0	0	0	0	0	55	9	0	64	10	0	1	0	11	205
04:30 PM	0	125	0	0	125	0	0	0	0	0	0	79	15	0	94	5	0	1	0	6	225
04:45 PM	4	105	0	0	109	0	0	0	0	0	0	76	5	0	81	14	0	3	0	17	207
Total	7	504	0	0	511	0	0	0	0	0	0	276	36	0	312	36	0	6	0	42	865
Grand Total	23	936	0	0	959	0	0	0	0	0	0	574	68	0	642	66	0	13	0	79	1680
Apprch %	2.4	97.6	0	0		0	0	0	0		0	89.4	10.6	0		83.5	0	16.5	0		
Total %	1.4	55.7	0	0	57.1	0	0	0	0	0	0	34.2	4	0	38.2	3.9	0	0.8	0	4.7	

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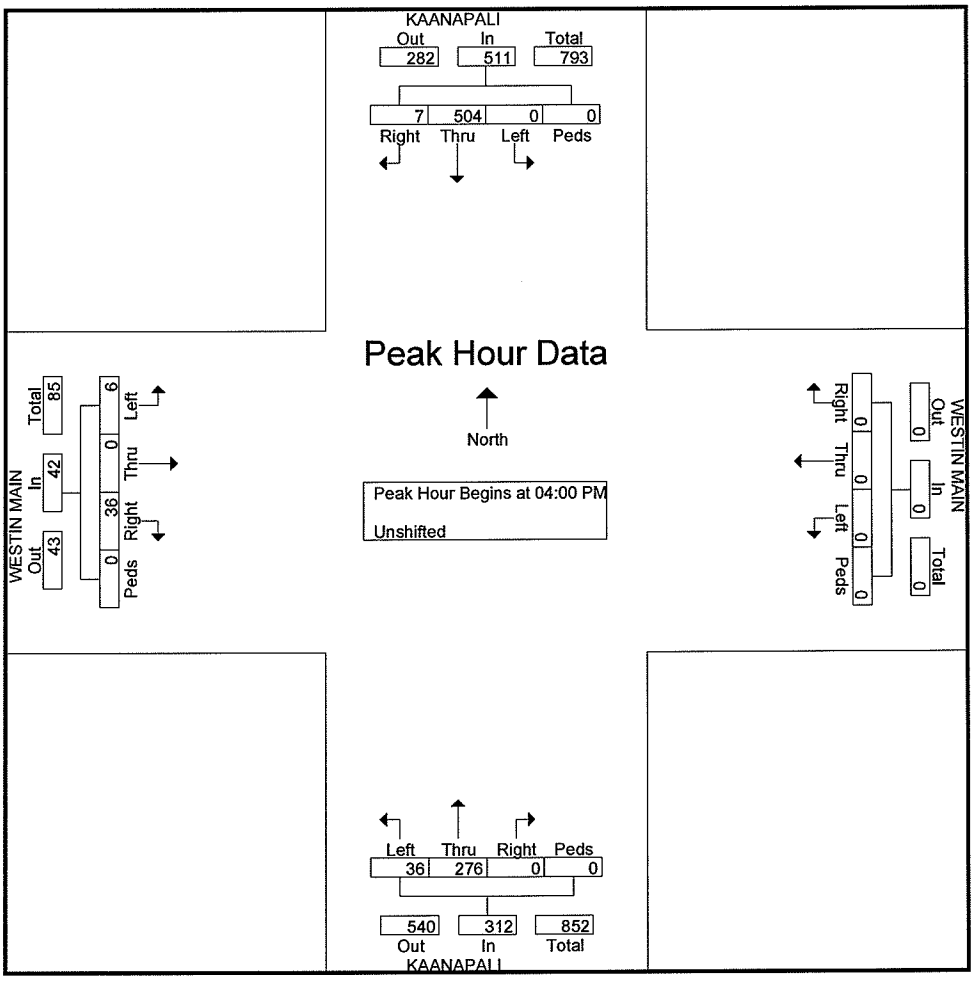
	KAANAPALI From North					WESTIN MAIN From East					KAANAPALI From South					WESTIN MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	2	**145**	0	0	**147**	0	0	0	0	0	0	66	7	0	73	7	0	1	0	8	**228**
04:15 PM	1	129	0	0	130	0	0	0	0	0	0	55	9	0	64	10	0	1	0	11	205
04:30 PM	0	125	0	0	125	0	0	0	0	0	0	**79**	**15**	0	**94**	5	0	1	0	6	225
04:45 PM	**4**	105	0	0	109	0	0	0	0	0	0	76	5	0	81	**14**	0	**3**	0	**17**	207
Total Volume	7	504	0	0	511	0	0	0	0	0	0	276	36	0	312	36	0	6	0	42	865
% App. Total	1.4	98.6	0	0		0	0	0	0		0	88.5	11.5	0		85.7	0	14.3	0		
PHF	.438	.869	.000	.000	.869	.000	.000	.000	.000	.000	.000	.873	.600	.000	.830	.643	.000	.500	.000	.618	.948



APPENDIX B

LEVEL OF SERVICE CRITERIA

APPENDIX B – LEVEL OF SERVICE (LOS) CRITERIA

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS (HCM 2000)

Level of service for signalized intersections is directly related to delay values and is assigned on that basis. Level of Service is a measure of the acceptability of delay values to motorists at a given intersection. The criteria are given in table below.

Level-of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec./veh.)
A	< 10.0
B	>10.0 and ≤ 20.0
C	>20.0 and ≤ 35.0
D	>35.0 and ≤ 55.0
E	>55.0 and ≤ 80.0
F	> 80.0

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 2000)

The level of service criteria for unsignalized intersections is defined as the average control delay, in seconds per vehicle.

LOS delay threshold values are lower for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections than those of signalized intersections. This is because more vehicles pass through signalized intersections, and therefore, drivers expect and tolerate greater delays. While the criteria for level of service for TWSC and AWSC intersections are the same, procedures to calculate the average total delay may differ.

Level of Service Criteria for Two-Way Stop-Controlled Intersections

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	> 50

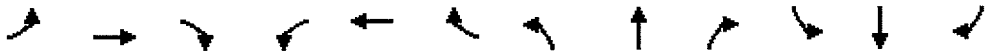
APPENDIX C

LEVEL OF SERVICE CALCULATIONS

APPENDIX C

LEVEL OF SERVICE CALCULATIONS

- Exist AM

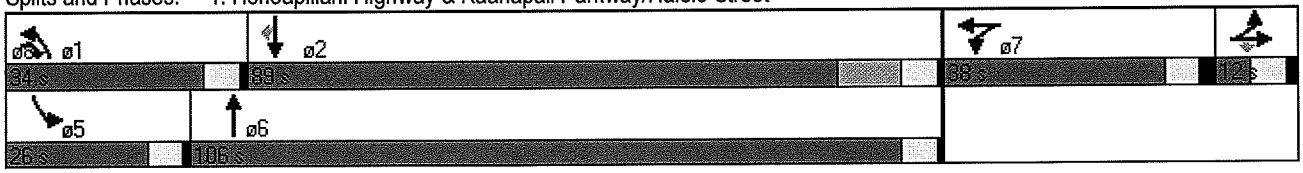


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	5	259	8	3	4	390	1080	12	19	901	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		300	0		0	400		0	320		320
Storage Lanes	0		2	0		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.966			0.998				0.850
Flt Protected		0.954			0.973		0.950			0.950		
Satd. Flow (prot)	0	1777	2787	0	1751	0	3433	3532	0	1770	3539	1583
Flt Permitted		0.954			0.973		0.950			0.950		
Satd. Flow (perm)	0	1777	2787	0	1751	0	3433	3532	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			282		4			1				138
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		1114			700			1110			1202	
Travel Time (s)		25.3			15.9			16.8			18.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	5	282	9	3	4	424	1174	13	21	979	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	282	0	16	0	424	1187	0	21	979	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	50	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									2
Detector Phase	8	8	1	7	7		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0		5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.0	12.0	11.0	14.0	14.0		11.0	13.0		11.0	13.0	13.0
Total Split (s)	12.0	12.0	34.0	38.0	38.0		34.0	106.0		26.0	89.0	89.0
Total Split (%)	6.6%	6.6%	18.7%	20.9%	20.9%		18.7%	58.2%		14.3%	48.9%	48.9%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	5.0	5.0	28.0	31.0	31.0		28.0	100.0		20.0	83.0	83.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-3.0	-2.0		-3.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.0	4.0		2.0	4.0	4.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)				7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)				23.0	23.0			11.0			25.0	25.0
Pedestrian Calls (#/hr)				4	4			2			10	10
Act Effct Green (s)		8.9	33.5		14.0		20.1	59.9		8.7	39.3	39.3
Actuated g/C Ratio		0.10	0.38		0.16		0.23	0.67		0.10	0.44	0.44
v/c Ratio		0.83	0.23		0.06		0.55	0.50		0.12	0.62	0.15
Control Delay		79.5	4.4		35.6		37.1	11.7		51.5	23.3	3.1
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		79.5	4.4		35.6		37.1	11.7		51.5	23.3	3.1
LOS		E	A		D		D	B		D	C	A
Approach Delay		30.2			35.6			18.4			21.7	
Approach LOS		C			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 182			
Actuated Cycle Length: 88.8			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Honoapiilani Highway & Kaanapali Parkway/Halelo Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	6	50	36	277	226	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.880				0.992	
Flt Protected	0.994			0.994		
Satd. Flow (prot)	1629	0	0	3518	3511	0
Flt Permitted	0.994			0.994		
Satd. Flow (perm)	1629	0	0	3518	3511	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	369			299	301	
Travel Time (s)	5.6			6.8	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	54	39	301	246	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	340	259	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	43	0	283	189	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.963	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3408	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3408	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	201			301	395	
Travel Time (s)	3.0			6.8	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	47	0	308	205	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	47	0	308	273	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Volume (vph)	158	290	217	31	13	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.981		0.878	
Flt Protected		0.983			0.995	
Satd. Flow (prot)	0	3479	3472	0	1627	0
Flt Permitted		0.983			0.995	
Satd. Flow (perm)	0	3479	3472	0	1627	0
Link Speed (mph)		30	30		45	
Link Distance (ft)		1114	299		311	
Travel Time (s)		25.3	6.8		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	315	236	34	14	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	487	270	0	151	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	67	100	1139	983	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.979	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	3539	3465	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	3539	3465	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	532			980	388	
Travel Time (s)	8.1			14.8	5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	73	109	1238	1068	176
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	73	109	1238	1244	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.5%		ICU Level of Service A	
Analysis Period (min) 15			

APPENDIX C

LEVEL OF SERVICE CALCULATIONS

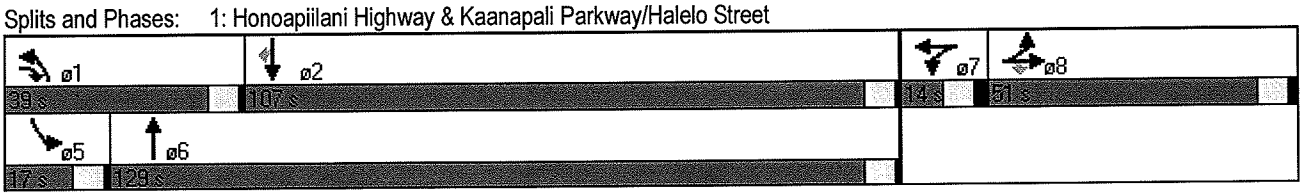
- Exist PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	278	8	610	14	3	7	420	1175	15	52	1382	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		300	0		0	400		0	320		320
Storage Lanes	0		2	0		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.958			0.998				0.850
Flt Protected		0.954			0.972		0.950			0.950		
Satd. Flow (prot)	0	1777	2787	0	1735	0	3433	3532	0	1770	3539	1583
Flt Permitted		0.954			0.972		0.950			0.950		
Satd. Flow (perm)	0	1777	2787	0	1735	0	3433	3532	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110		8			1				119
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		1114			700			1110			1202	
Travel Time (s)		25.3			15.9			16.8			18.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	9	663	15	3	8	457	1277	16	57	1502	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	311	663	0	26	0	457	1293	0	57	1502	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	50	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									2
Detector Phase	8	8	1	7	7		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0		5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.0	12.0	11.0	14.0	14.0		11.0	13.0		11.0	13.0	13.0
Total Split (s)	51.0	51.0	39.0	14.0	14.0		39.0	129.0		17.0	107.0	107.0
Total Split (%)	24.2%	24.2%	18.5%	6.6%	6.6%		18.5%	61.1%		8.1%	50.7%	50.7%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	44.0	44.0	33.0	7.0	7.0		33.0	123.0		11.0	101.0	101.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-3.0	-2.0		-3.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.0	4.0		2.0	4.0	4.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)				7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)				23.0	23.0			11.0			25.0	25.0
Pedestrian Calls (#/hr)				4	4			2			10	10
Act Effct Green (s)		40.0	75.8		14.3		31.6	111.6		11.7	91.6	91.6
Actuated g/C Ratio		0.21	0.40		0.08		0.17	0.59		0.06	0.48	0.48
v/c Ratio		0.83	0.56		0.19		0.80	0.62		0.53	0.88	0.23
Control Delay		94.1	40.7		72.0		90.4	29.2		115.2	52.9	13.2
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		94.1	40.7		72.0		90.4	29.2		115.2	52.9	13.2
LOS		F	D		E		F	C		F	D	B
Approach Delay		57.8			72.0			45.2			50.6	
Approach LOS		E			E			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 211			
Actuated Cycle Length: 190			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 50.2		Intersection LOS: D	
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Honoapiilani Highway & Kaanapali Parkway/Halelo Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	9	58	58	311	558	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.883				0.997	
Flt Protected	0.993			0.992		
Satd. Flow (prot)	1633	0	0	3511	3529	0
Flt Permitted	0.993			0.992		
Satd. Flow (perm)	1633	0	0	3511	3529	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	369			299	301	
Travel Time (s)	5.6			6.8	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	63	63	338	607	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	401	619	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	46	0	330	521	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.986	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3490	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3490	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	201			301	395	
Travel Time (s)	3.0			6.8	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	50	0	359	566	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	50	0	359	623	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.1%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Volume (vph)	213	347	530	41	28	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.989		0.877	
Flt Protected		0.981			0.996	
Satd. Flow (prot)	0	3472	3500	0	1627	0
Flt Permitted		0.981			0.996	
Satd. Flow (perm)	0	3472	3500	0	1627	0
Link Speed (mph)		30	30		45	
Link Distance (ft)		1114	299		311	
Travel Time (s)		25.3	6.8		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	377	576	45	30	315
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	609	621	0	345	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.2%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	119	111	1491	1491	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.984	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	3539	3483	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	3539	3483	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	532			980	388	
Travel Time (s)	8.1			14.8	5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	129	121	1621	1621	187
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	129	121	1621	1808	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.7%		ICU Level of Service B	
Analysis Period (min) 15			

APPENDIX C

LEVEL OF SERVICE CALCULATIONS

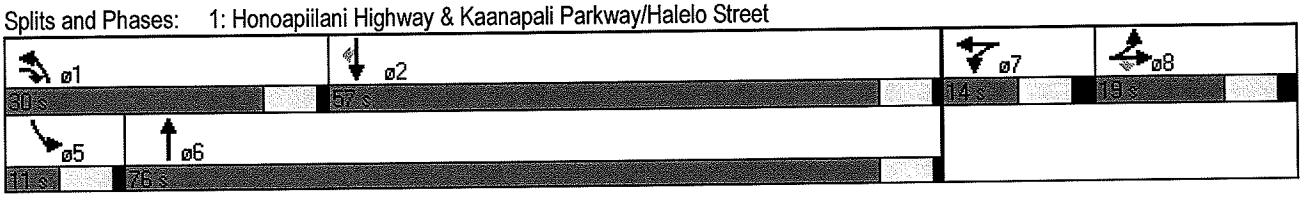
- Exist AM with Mitigations

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	5	259	8	3	4	390	1080	12	19	901	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		300	0		0	400		0	320		320
Storage Lanes	2		1	0		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Frt		0.855	0.850		0.966			0.998				0.850
Flt Protected	0.950				0.973		0.950			0.950		
Satd. Flow (prot)	3433	1513	1504	0	1751	0	3433	3532	0	1770	3539	1583
Flt Permitted	0.950				0.973		0.950			0.950		
Satd. Flow (perm)	3433	1513	1504	0	1751	0	3433	3532	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		138	144		4			2				209
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		1114			700			1110			1202	
Travel Time (s)		25.3			15.9			16.8			18.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	5	282	9	3	4	424	1174	13	21	979	116
Shared Lane Traffic (%)			49%									
Lane Group Flow (vph)	142	143	144	0	16	0	424	1187	0	21	979	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	50	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									2
Detector Phase	8	8	1	7	7		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0		5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.0	12.0	11.0	14.0	14.0		11.0	13.0		11.0	13.0	13.0
Total Split (s)	19.0	19.0	30.0	14.0	14.0		30.0	76.0		11.0	57.0	57.0
Total Split (%)	15.8%	15.8%	25.0%	11.7%	11.7%		25.0%	63.3%		9.2%	47.5%	47.5%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	12.0	12.0	24.0	7.0	7.0		24.0	70.0		5.0	51.0	51.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0		-3.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.0	4.0		2.0	4.0	4.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)				7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)				23.0	23.0			11.0			25.0	25.0
Pedestrian Calls (#/hr)				4	4			2			10	10
Act Effct Green (s)	12.1	12.1	34.8		14.1		18.2	55.3		7.9	35.7	35.7
Actuated g/C Ratio	0.14	0.14	0.40		0.16		0.21	0.64		0.09	0.41	0.41
v/c Ratio	0.30	0.43	0.21		0.06		0.59	0.53		0.13	0.67	0.15
Control Delay	43.1	14.6	6.0		35.0		38.8	13.5		53.1	25.8	0.4
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	43.1	14.6	6.0		35.0		38.8	13.5		53.1	25.8	0.4
LOS	D	B	A		C		D	B		D	C	A
Approach Delay		21.1			35.0			20.2			23.7	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 86.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 21.6		Intersection LOS: C	
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Honoapiilani Highway & Kaanapali Parkway/Halelo Street



APPENDIX C

LEVEL OF SERVICE CALCULATIONS

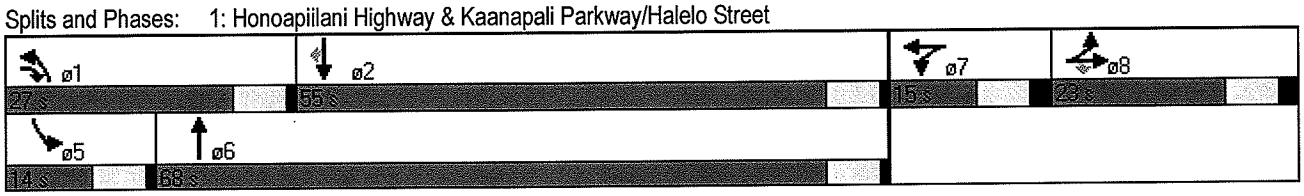
• Exist PM with Mitigations

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	278	8	610	14	3	7	420	1175	15	52	1382	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		300	0		0	400		0	320		320
Storage Lanes	2		1	0		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Frt		0.854	0.850		0.958			0.998				0.850
Flt Protected	0.950				0.972		0.950			0.950		
Satd. Flow (prot)	3433	1511	1504	0	1735	0	3433	3532	0	1770	3539	1583
Flt Permitted	0.950				0.972		0.950			0.950		
Satd. Flow (perm)	3433	1511	1504	0	1735	0	3433	3532	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		325	132		8			2				209
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		1114			700			1110			1202	
Travel Time (s)		25.3			15.9			16.8			18.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	9	663	15	3	8	457	1277	16	57	1502	189
Shared Lane Traffic (%)			49%									
Lane Group Flow (vph)	302	334	338	0	26	0	457	1293	0	57	1502	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	50	50	50	50	50		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									2
Detector Phase	8	8	1	7	7		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0		5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.0	12.0	11.0	14.0	14.0		11.0	13.0		11.0	13.0	13.0
Total Split (s)	23.0	23.0	27.0	15.0	15.0		27.0	68.0		14.0	55.0	55.0
Total Split (%)	19.2%	19.2%	22.5%	12.5%	12.5%		22.5%	56.7%		11.7%	45.8%	45.8%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	16.0	16.0	21.0	8.0	8.0		21.0	62.0		8.0	49.0	49.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0		-3.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.0	4.0		2.0	4.0	4.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)				7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)				23.0	23.0			11.0			25.0	25.0
Pedestrian Calls (#/hr)				4	4			2			10	10
Act Effct Green (s)	16.4	16.4	40.4		14.1		19.9	65.9		9.1	52.4	52.4
Actuated g/C Ratio	0.15	0.15	0.36		0.13		0.18	0.59		0.08	0.47	0.47
v/c Ratio	0.60	0.67	0.54		0.12		0.75	0.62		0.40	0.91	0.22
Control Delay	52.9	13.6	21.9		36.5		54.4	21.2		63.5	40.0	3.4
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	52.9	13.6	21.9		36.5		54.4	21.2		63.5	40.0	3.4
LOS	D	B	C		D		D	C		E	D	A
Approach Delay		28.7			36.5			29.9			36.8	
Approach LOS		C			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 112.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 32.3		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Honoapiilani Highway & Kaanapali Parkway/Halelo Street



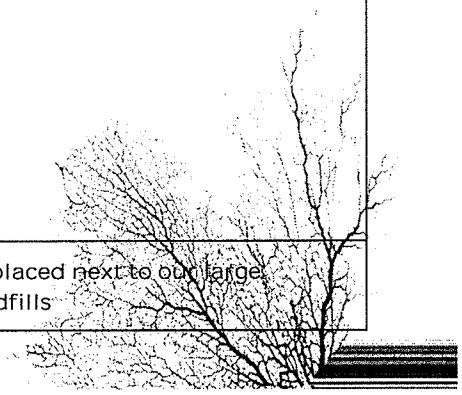
APPENDIX E.

Westin Maui Resort & Spa Sustainability Programs

Sustainability Programs

THE WESTIN MAUI RESORT & SPA

Category	Program Details
Rooms	✓ Participation Westin Brand Program in– Make a Green Choice. This program gives the option to our guests to forego housekeeping services, which saves in water, energy, and cleaning chemicals for cleaning and laundering guest room linen. ✓ In Room Recycling Program – Waste diversion initiative where plastic water bottles and newspaper are separated and not taken to landfill ✓ Toilet Paper use in locker rooms – partially empty toilet paper rolls from guest rooms are replaced and instead of throwing it away, we use the half rolls in our associate restrooms ✓ Front Desk (FD) eFolio – saves on folio paper that are formerly printed for guests to review their bill upon check out. Folios are now automatically emailed to guests that provide email address when they arrive. ✓ iPads ordered & received for the FD to eliminate some of the paper collateral being utilized from FD to guests (maps, resort fee cards, view, upsell opportunities, etc) ✓ All paper comment cards and guest feedback collateral are now electronically delivered for FD and Food & Beverage ✓ Water System in Laundry – maximizes efficiency with the washers with mixing ratios to minimize chemicals and water used ✓ For Earth Day, guests invited to plant herbs and flowers that we will utilize in the Spa for teas and aroma ✓ New laundry equipment for water conservation
Spa	✓ Fitness Center – filtered tapped water system so that we don't need to use plastic water bottles for dispensing ✓ All paper bags and paper products are duro brand; Duro's Environmental Statement. Duro is committed to the protection of the Earth through recycling and the promotion of paper as a renewable, sustainable resource. We recycle 100% of our Kraft and Bleached paper waste from our production process and are making committed efforts towards using recycled paper in the making of our bags. Along with our valued business partners, our combined efforts are assisting in protecting the environment and our planet. ✓ Use of all eco-friendly plastic cups and plastic containers – PLA Plant based Plastics
Food & Beverage	✓ Utilize left over coffee grounds from F&B to fertilize landscaping areas ✓ Donate leftover food to local pig farmers for waste diversion ✓ F&B Elimination of all plastic bags ✓ F&B Elimination of all Styrofoam products ✓ Renewable & Compostable Straws
Energy & Engineering	✓ CFL bulbs in guest rooms ✓ Energy Police Program – monthly rotation for departments to walk the property daily and turn off all lights in unoccupied rooms ✓ Public area and back of house lighting (LED and fluorescent) ✓ Air Handlers: four units replaced with newer, more efficient equipment ✓ New Transformer ✓ Condenser Water Pump VFD's ✓ ECM motors for walk-in refrigerators ✓ Kitchen exhaust hood VFD's ✓ Rooftop bathroom exhaust fan replacements ✓ Pool weir leak repair ✓ Shower head replacement ✓ Smart irrigation system ✓ Occupancy sensors for mezzanine level meeting rooms ✓ Outdoor lighting replacement: LED lighting
Others	✓ Recycling program for admin (paper) – recycle bins are placed next to our large printers and copy machines to keep paper out of the landfills



APPENDIX F.

Correspondence with Kaanapali Operations Association, Inc.

JUN 24 2013

KAANAPALI OPERATIONS ASSOCIATION, INC.
2530 KEKAA DRIVE, RM. B-2
LAHAINA, HAWAII 96761
TELEPHONE (808) 661-7370
FAX LINE (808) 661-7371

June 21, 2013

Mr. Gregg Lundberg, General Manager
THE WESTIN MAUI RESORT & SPA
2365 Kaanapali Pkwy.
Lahaina, HI 96761

gregg.lundberg@westin.com

RE: WESTIN MAUI MASTER PLAN: Conceptual Design Review

Dear Mr. Lundberg:

The Kaanapali Resort Design Review Committee (KRDRC) has considered the proposed new improvements at the *Westin Maui*, located at 2365 Kaanapali Parkway, Lahaina HI, as represented in the submittals and presentations as noted below, in the context of the "conceptual review" and offers the following comments:

SUBMITTALS & PRESENTATIONS:

Submitted drawings and exhibits to the KRDRC for the conceptual design for the Westin Maui by *WCIT Architecture* titled **"Westin Maui Master Plan- Starwood Hotels, Kaanapali Maui Hawaii- Special Management Area (SMA) Permit"**, dated "March 5, 2013", and a presentation at the Westin by *Greg Lundberg, General Manager* of the Westin Maui Resort & Spa, *Larry Cunha, AIA VP* WCIT Architecture, and *Karlynn K.Fukuda,* VP Munekiyo & Hiraga, Inc. at the Westin, and a site visit and tour with above on May 30, 2013.

SCOPE OF WORK:

The scope of work under review for the Westin Maui are renovations and improvements the property including:

1. New 5-story parking structure located at the south-east corner of the property;
2. Improvements to the existing spa area (Level-2) located on the north-west side of the property;
3. Improvements to the existing restaurant (Level-1) located on the north-west side of the property;
4. Improvements and expansion to the existing Ballroom (Level-2) and Meeting room (Level-1) area located on the north-east side of the property;
5. Modifications to the existing lanai railing design for the typical units.

COMMENTS & FINDINGS:

Based upon review of the submitted drawings and exhibits, and in consideration of the presentation made by the Westin design consultants and General Manager to the KRDRC as noted above, the KRDRC has determined conceptual design approval for the project will be granted based on the following criteria:

1. NEW PARKING STRUCTURE:

The proposed architectural design for the new parking structure as represented in the submitted drawings and exhibits noted above- for the purposes of the "conceptual review" is acceptable subject to the following comments:

1. The proposed parking structure as represented in the submitted drawings appears well detailed and integrated architecturally with the surrounding buildings on the property and within the resort- and the KRDRC appreciates the efforts by the Westin and its design team to accomplish this, however the overall height and scale of the structure is large and imposing, and out of scale with the other existing parking structures on other properties along Kaanapali Parkway which are maximum 3 stories, and it affects view planes within the resort, and efforts should be made by the Westin to reduce these effects.

2. During the development of the preliminary design modifications should be made to lower the overall height of the structure by at least 1-story either eliminating a story or lowering the structure height by having level-1 of the structure below grade, thereby reducing the overall height of the structure by at least 10'. The footprint of the structure could be expanded to the north to keep the reduction of parking stalls to a minimum.

3. During the development of the preliminary design consideration should be given to reducing the scale and scope of the structure by increasing the setbacks from the property line- particular the south property line, and by increasing the landscaping in the setback area.

4. During the development of the preliminary design consideration should be given to reducing the impact of the structure to the neighboring property on the south side- the Kaanapali Alii. The Westin should engage with the Alii to review options to accomplish this goal- see comments above.

5. During the development of the preliminary design consideration should be given to maintaining as much as possible the existing Monkeypod tree canopy in the current parking area, which is an important feature of the property.

6. During the development of the preliminary design consideration should be given to increasing the landscaping screen buffer of the proposed parking structure, especially along the north, south and east sides of the structure.

2. RENOVATIONS TO THE SPA AREA:

The proposed architectural design for the renovated spa area as represented in the submitted drawings and exhibits noted above- for the purposes of the "conceptual review" is acceptable based on the following comments:

1. The proposed renovations to the spa area as represented in the submitted drawings appears well designed and integrated into the existing property and is acceptable.

3. RENOVATIONS TO THE RESTAURANT AREA:

The proposed architectural design for the renovated restaurant area as represented in the submitted drawings and exhibits noted above- for the purposes of the "conceptual review" is acceptable based on the following comments:

1. The proposed renovations to the restaurant area as represented in the submitted drawings appears well designed and integrated into the existing property and is acceptable. The KDRC supports the efforts of the Westin to obtain SMA approval to allow the proposed 1-story roof structure.

4. RENOVATIONS TO THE BALLROOM AND MEETING AREA:

The proposed architectural design for the renovated ballroom and meeting area as represented in the submitted drawings and exhibits noted above- for the purposes of the "conceptual review" is acceptable based on the following comments:

1. The proposed renovations to the ballroom and meeting area as represented in the submitted drawings appears well designed and integrated into the existing property and is acceptable.

5. RENOVATIONS TO THE LANAI RAILINGS:

The proposed architectural design for the lanai railings as represented in the mock-up reviewed by the KRDRC on May 30, 2013, for the purposes of "final review" is acceptable based on the following comments:

1. The proposed curved lanai railing detail as represented in the mock-up appears well designed and is acceptable.

ADDITIONAL REQUIREMENTS FOR CONCEPTUAL APPROVAL

1. The Westin should commit to cleaning up the unapproved construction along the group entrance at the Whalers Village/Westin service road. The Westin should commit to opening up the driveway as originally designed, to prevent buses from reversing into the driveway, and enabling entering from the service road and exiting on the parkway.

2. The Westin should commit to resolving the drainage condition at Nohea Kai and Kaanapali Parkway to address the "black lagoon" condition caused by the loading dock drainage system.

3. The Westin should commit to cleaning up miscellaneous problems accrued over time such as unapproved improvements particularly in the service and "back of house" areas

such as vents, roof mounted Christmas decoration mounting wires etc.

DRAWINGS AND PRESENTATIONS FOR PRELIMINARY SUBMITTAL

1. Provide more complete and detailed architectural and engineering drawings at the next submittal. The drawing set may be considered as a "design development" set.

2. The Westin should submit (3) copies of the Grading and Drainage report for the project to the KRDRC.

3. The Westin should submit a view plane analysis for the project to the KRDRC.

4. The Westin should submit a floor area ratio study for the project to the KRDRC.

5. The Westin should submit a report on the proposed sustainability efforts associated with the project such as solar, reuse of materials, reducing the impact on Maui landfills, and other recycling efforts. This report may be part of the preliminary review presentation. Please note if the project will be trying to achieve a LEEDS rating.

6. The Westin should submit a preliminary lighting plan for the project area prepared and stamped by an electrical engineer licensed in the State of Hawaii at the next submittal. Provide product data on proposed lighting fixtures.

7. When the Westin design consultants are ready to submit for preliminary review- they should schedule a time and place mutually agreeable to present the updated design to the KRDRC. The Westin should plan on having all major consultants associated with the project at the presentation meeting.

The KRDRC would like to express an appreciation of the efforts by the Westin and its design consultants have put into the presentations, submittals and exhibits so far, as well as the cooperation in refining the project design.

The design committee is looking forward to reviewing the preliminary submittal.

Sincerely,

Wayne N. Hedani
President and General Manager
Kaanapali Operations Association, Inc.

cc: KRDRC
Larry Cunha, AIA, WCIT ARCHITECTURE
Karlynn K. Fukuda, Munekiyo & Hiraga, Inc.

December 9, 2013

Kaanapali Operations Association, Inc.
2530 Kekaa Drive, Room B-2
Lahaina, Hawaii 96761
Attention: Mr. Wayne N. Hedani
President and General Manager

Re: Westin Maui Resort & Spa Master Plan Improvements (the "Project")

Dear Mr. Hedani:

Thank you for your letter dated June 21, 2013 and for meeting with us on December 2, 2013. We believe the feedback which we received from Kaanapali Operations Association, Inc. ("KOA") and the Kaanapali Resort Design Review Committee ("KRDRC") has been very constructive. On behalf of Westin Maui LLC, the owner of the Westin Maui Resort & Spa, we hereby submit this letter to KOA and the KRDRC to complete the review and approval process outlined in Section II.C of the Kaanapali Beach Resort Design Standards and Restrictions for Hotel, Condominium and Commercial Development (the "Design Standards").

INFORMATION FOR MEETING #2 PREVIOUSLY PROVIDED TO KOA

In May 2013, we provided to the KRDRC the following plans required under Section II.c.(2) of the Design Standards:

a. View Planes and Corridors;
b. Overall Building Massing; and
c. Schematic Landscaping Plans.[1]

During our meeting on December 2, 2013, we outlined for the KRDRC a number of revisions which were made to the May 2013 plans. Per the KRDRC's request, we provide the following summary of those revisions:

1. Parking Structure
   a. The parking structure will be lowered 1/2 a story (4 feet), such that the new heights of the parking structure will be 4 1/2 and 3 1/2 stories. At its tallest point, the height of the structure will be approximately 36'. Previously, the parking structure was proposed at grade.

[1] Information on phasing and future expansion, referenced in Section II.C of the Design Standards, was not previously provided to the KRDRC, as it has no application to the Project.

b. In response to discussions with the Kaanapali Alii board of directors, the fifth (now 4 1/2) level of the parking structure was reconfigured to be adjacent to the Kaanapali Parkway portion of the structure, rather than along the south end of the parking structure. Additionally, the number of parking stalls was reduced by 36 stalls, due to a 3,000-square foot reduction in the proposed ballroom and meeting room expansion.

c. The building setback along the south portion of the structure will continue to be 20 feet. Additionally landscaping from the May 2013 plan submittal is proposed to be increased. Further, the 20-foot setback will be utilized for landscaping. Previously, there was surface parking proposed for that area.

d. A new landscaping facility is included in the lower level of the parking structure. This will replace the existing shipping containers located in the south area of the surface parking lot. This addition was proposed to address comments from the Kaanapali Alii board of directors.

2. Ballroom Expansion and Back of House Addition
   a. The proposed ballroom expansion was reduced from the originally proposed 15,000-square foot expansion, to 12,000 square feet. This reduction will allow for an outdoor function area on the ground level. This reduction provided for the lot coverage needed for the enclosure of the existing Back of House/Laundry area, located adjacent to the ballrooms.

   b. As previously noted, enclosure of the existing Back of House/Laundry area will be completed, which is a new improvement which was not included in the May 2013 submittal. The Back of House/Laundry area will be a single story structure and will allow for the removal of materials from the bus turnaround area.

3. Bus Turnaround Area
   a. Improvements to the bus turnaround area in the north portion of the Westin Maui site are new from the May 2013 submittal. Curb cuts to the bus turnaround area are proposed to allow for greater turning radius for buses utilizing the bus drop off area.

The above-described revisions are reflected in the December 9, 2013 set of plans enclosed with this letter. Per the suggestion of the KRDRC, these plans now include building section drawings, with dimensions.

INFORMATION FOR MEETING #2 BEING PROVIDED TO KOA WITH THIS LETTER

The following is being provided to complete the submission to the KRDRC of information required under Section II.C of the Design Standards:

i. Program.

Proposed improvements to the Westin Maui Resort & Spa include:

a. Construction of a new parking structure in the existing south parking lot;
b. Conversion of the existing second floor convention hall into a new ballroom to include a 12,000 sq. ft. expansion;
c. Expansion of the existing first floor ballroom;
d. Expansion of the existing spa by approximately 4,240 sq. ft. within the existing building footprint;
e. Demolition of the existing water feature, restroom and storage building within the shoreline setback area;
f. Installation of a deck area and approximately 4,120 sq. ft. roof structure to replace the area of the demolished water feature, restroom, and storage building;
g. Demolition of the existing retail kiosk within the shoreline setback area;
h. Installation of an approximately 2,570 sq. ft. open air roof structure to cover the existing restaurant deck area in the shoreline setback area;
i. Interior renovations to existing guestrooms and public corridor areas, renovations to existing pools and water features, as well as back of house areas; and
j. Installation of underground utilities, landscaping, and other related improvements to support the above-noted improvements.

In order to remain current and competitive, the Westin Maui Resort & Spa maintains a program to visually and functionally enhance the resort. The proposed Project will not increase the number of employees or add to the number of guestrooms, but will allow the Westin Maui Resort & Spa to maintain its competitive market position and also provide much needed onsite parking for guests and employees. To compete in the global market, the West Maui Resort & Spa strives to upgrade its properties to meet consumer demands and expectations.

ii. Cost Estimates and Feasibility.

The estimated cost of the proposed Project is approximately $55 million. Construction will commence upon receipt of all applicable permits and approvals. Construction is estimated to begin in the first quarter of 2015 and is anticipated to occur over a period of 30 months.

iii. Traffic Flow and Impact, Including Parking.

The proposed Project entails renovation work at an existing resort property and creates no additional guestrooms. In the short term, there will be an increase in the number of vehicle trips to the Project site during the construction phase, though the relative increase in vehicle trips on Honoapiilani Highway will be minimal.

In the long term, while the proposed master plan improvements will serve to enhance the attractiveness of the Westin Maui Resort & Spa, those improvements will not in themselves generate additional vehicle trips. The improvements will not result in additional hotel rooms or destinations which will either generate or attract additional vehicle trips. As a result, no significant impacts on the area roadway system are anticipated.

The traffic impact analysis report for the Project ("TIAR") concluded that with the implementation of the State Department of Transportation's Lahaina Bypass Road, Honoapiilani Highway will be relieved of some of the northbound and southbound traffic volumes which would, in turn, improve the level of service ("LOS") at the Honoapiilani Highway and Kaanapali Parkway intersection. Without the Lahaina Bypass Road, based on existing conditions, improvements to the Honoapiilani Highway and Kaanapali Parkway intersection to modify the eastbound approach to include two (2) dedicated left-turn lanes, a shared through/right-turn lane and a dedicated right-turn lane would be needed to achieve LOS E or better at the intersection.

Addtionally, the proposed parking structure will provide the number of parking stalls required by the County of Maui for the existing and proposed expansion at the Westin Maui Resort & Spa as well as parking stalls to meet our employee parking needs. The parking structure design underwent revisions since our May 2013 meeting with the KRDRC, in large part due to discussions which Westin Maui, LLC held with the Kaanapali Alii board of directors. A copy of the plans showing such revisions was submitted to you by me via email on November 30, 2013.

iv. Vehicular and Utility Service.

With the proposed Project improvements, there are no anticipated changes to the existing vehicular patterns at the Westin Maui Resort & Spa. There are no changes planned for the entry driveways off of Kaanapali Parkway nor are there any new driveways planned.

The proposed Project improvements include utility improvements such as drainage, water and electrical infrastructure to accommodate the proposed improvements at the Westin Maui Resort & Spa.

v. Density.

In order for the Westin Maui Resort & Spa to remain competitive and to enhance the employee experience the proposed Project will need to increase the density of the site. In general the Project improvements will conform to all applicable development standards of the Maui County Code applicable to the H-2 zoning district. Among other things, the development standards for height limitations, front yard, rear yard and side yard setbacks and floor area ratio are being met or exceeded.

vi. Entry.

As previously noted, there is no anticipated change to the proposed vehicle entry at the Westin Maui Resort & Spa. There are renovation activities proposed for the lobby and porte cochere areas; however, the improvements are mainly to refresh the entry experience for guests.

vii. Functional Relationships and Flow Diagrams.

The proposed Project improvements will work in concert with the existing improvements at the Westin Maui Resort & Spa. The proposed improvements are designed to provide for functionality for guests and employees as well as improve the overall experience and service for the Westin Maui Resort & Spa.

viii. Basic Environmental Considerations.

a. Surrounding Land Use. The proposed Project is not anticipated to have an adverse effect on adjacent properties or uses, including any adjacent hotel, commercial, and recreational uses.

b. Climate. The proposed Project will not significantly alter the local topography or terrain. Therefore, the Project is not anticipated to impact the climate.

c. Topography and Soils. The topography of the subject property will not be significantly altered nor will the soil composition be changed. Site work at the Project site will be performed within areas already graded and developed for resort use. Ground altering work will occur in the existing parking lot during the construction of the new parking structure. However, the finish grades at all work sites will not be significantly altered. The proposed Project will not negatively impact the underlying soils, as the subject property has been fully developed and is currently being used as the Westin Maui Resort & Spa. To prevent soil erosion during site work, applicable Best Management Practices will be implemented at the Project site. In view of the foregoing, the proposed Project is not anticipated to adversely affect the topography and soils in the area.

d. Flood and Tsunami Hazards. The subject property is primarily located within Flood Zone X, with a small portion lying within Flood Zone VE. The proposed Project will occur entirely within Flood Zone X. Flood Zone X is characterized as areas outside the 0.2 percent annual chance floodplain. According to the Tsunami Flood Zone Evacuation Maps, the subject property is located within the tsunami evacuation area (County of Maui, Civil Defense Agency). Flood Zone X represents areas of low flood risk with no development restrictions. The Westin Maui Resort & Spa has established emergency and civil defense procedures to provide the necessary guidance to organize and direct operations at the resort in the event of an emergency or civil defense action, such as a tsunami. No adverse impacts to flood and tsunami hazard parameters are anticipated to result from the proposed Project.

e. Flora and Fauna. The subject property does not contain any rare, threatened, or endangered species or critical habitat for such species. Therefore, the proposed Project is not anticipated to have a negative impact on the biological resources in the region.

f. Air Quality and Noise. Construction activities will generate short-term air quality and noise impacts. Dust control measures such as dust screens will be implemented to minimize wind-blown particulates. Noise impacts generated by construction equipment will be minimized with the use of equipment mufflers or other noise-attenuating equipment and proper vehicle maintenance. Best Management Practices will be implemented to mitigate adverse air quality and noise impacts. After the conclusion of construction, the improvements are not anticipated to produce any air quality or noise impacts.

g. Chemicals and Hazardous Materials. There are no new activities proposed within the Project improvements which would potentially include hazardous materials or chemicals which may be potentially harmful. The Westin Maui Resort & Spa will continue to maintain its maintenance and leak detection protocols for the existing underground fuel storage tanks. No construction activities are proposed for the tanks. During ground altering activities, precautions will be taken to ensure that any work within the vicinity of the underground tanks would not affect the structural integrity of the tanks. Filtering systems to capture petroleum from any parking structure runoff will be installed. Any known and any as yet undiscovered asbestos containing materials or other hazardous materials will be dealt with in accordance with law.

COMMENTS AND FINDINGS

In your June 21, 2013 letter, under the heading "COMMENTS & FINDINGS", you provide comments numbered 1 through 6 concerning the proposed new parking structure. The following is our response thereto:

1. " . . . the overall height and scale of the structure is large and imposing and out of scale with the other existing parking structures on other properties along Kaanapali Parkway which are maximum 3 stories, and it affects view planes within the resort . . ."

Under Section III.C of the Design Standards, building heights are generally limited to 60 feet, although a maximum of 80 feet may be permitted if setbacks qualify a structure for square footage bonuses. The exception to this standard is in the H-2 zoning district, where the Maui County Code will prevail. As you know, the Westin Maui Resort & Spa is situated in the H-2 zoning district, and under Maui County Code section 19.14.040, the maximum number of stories in the H-2 zoning district is twelve stories. The proposed parking structure will consists of five levels and four levels, with the first level being below grade by four feet. As such, we believe we are well within the height limits of both the Design Standards and the Maui County Code.

Under Section III.A of the Design Standards, views to the ocean and beachfront are to be protected from encroachment. Those ocean views which are considered to be most important are identified in Exhibit A to the Design Standards, entitled "Primary View Paths". We believe that the proposed parking structure does not encroach into any of the Primary View Paths.

2. "During the development of the preliminary design modifications should be made to lower the overall height of the structure by at least 1-story either eliminating a story or lowering the structure height by having level-I of the structure below grade, thereby reducing the overall height of the structure by at least 10'. The footprint of the structure could be expanded to the north to keep the reduction of parking stalls to a minimum."

Please see our response to comment #1 above regarding the overall height of the parking structure, and the fact that the plans have been revised from our original submittal such that the first level will be four feet below grade. Also, we did explore the feasibility of enlarging the footprint of the parking structure and moving it further north. However, this would have caused the resort to exceed the maximum lot coverage permitted by the Maui County Code. As a result, we decided not to pursue this measure further.

3. "During the development of the preliminary design consideration should be given to reducing the scale and scope of the structure by increasing the setbacks from the property line - particular the south property line, and by increasing the landscaping in the setback area."

As noted in our response to comment #4 below, we engaged in substantial discussions with representatives of Kaanapali Alii. During those discussions, one request from Kaanapali Alii was to move the parking structure closer to our common property line (south property line) so as to reduce the potential impact on their mauka views.

Kaanapali Alii specifically asked that the structure be situated at the 10' setback. In the end, we had to advise Kaanapali Alii that the minimum setback allowed under the Maui County Code for structures 5 to 6 stories tall was 20'. Therefore, the parking structure will be situated at the 20' setback. Also, as we confirmed to the KRDRC, this setback area will be landscaped, and there are no plans to install any other improvements in this area.

4. "During the development of the preliminary design consideration should be given to reducing the impact of the structure to the neighboring property on the south side- the Kaanapali Alii. The Westin should engage with the Alii to review options to accomplish this goal- see comments above."

As we explained to the KRDRC, we had numerous meetings with representatives of Kaanapali Alii, including at least three (3) meetings which were held at the hotel, two (2) site visits and numerous one-on-one meetings with members of the AOAO board of directors. As a part of these meetings, Westin Maui LLC explored a number of alternatives for the parking structure design, including spreading out the parking structure on the existing south parking lot, moving the parking structure from an east-west alignment to an north-south alignment to be parallel to Kaanapali Parkway and reviewing the option of having two (2) parking structures in the north and south parking lots which would also require a realignment of the entry driveway. Additionally, options on the configuration of the parking structure were also considered including shortening the west portion closest to Kaanapali Alii.

The option to spread out the parking structure further on the south parking lot would allow for a reduction in height of the parking structure; however, this would enlarge the mass of the structure and would also cause the Westin Maui property to exceed its lot coverage requirement as set by the County of Maui. In order to permit this option, the Westin Maui would need to seek a variance from the County of Maui, but there was no guarantee that the variance would be granted. As such, this option was not pursued. The Kaanapali Alii board also requested review of an option to move the parking structure 90 degrees, so that it would be parallel to Kaanapali Parkway. However, upon review of this option, Westin Maui LLC was concerned about the potential visual impacts to the views from Kaanapali Parkway along the property. Additionally, upon review of this option, the Kaanapali Alii also expressed concerns about the greater visual impact to views from their units with the parking structure moved further away from their building. The two (2) parking structure option was also studied; however, it presented the same concerns with exceeding the limits on lot coverage as well as vehicle flow patterns and as such, was not pursued further. As explained to the KRDRC, one of the primary goals driving the parking structure size is the need to provide the number of stalls required by the County of Maui for existing and proposed improvements as well as our need to provide on-site parking for our employees.

Overall the meetings with Kaanapali Alii were productive and convinced us that the following revisions to the proposed structure were appropriate:

- Lowering the by structure by ½ level 4' below grade; by doing so, the 4 and 5 level structure became a 3 ½ & 4 ½ level structure with a maximum height at the highest point of each level to be 32' at the elevator tower (28' at the trellis) and 36' respectively;

- Adding screens to the structure on the sides facing the Kaanapali Ali'i to reduce both light and noise transmission;

- Adding a trellis system to cover the parking stalls on the top levels of the structure;

- Diminishing or eliminating the peaked roof of the elevator core closest to the hotel building, or repositioning the placement of the elevator in the structure;

- Increasing the landscaping plan around the building to create a lush visual barrier around the structure; and

- Creating a lighting plan for the top level of the structure.

5. "During the development of the preliminary design consideration should be given to maintaining as much as possible the existing Monkeypod tree canopy in the current parking area, which is an important feature of the property."

Westin Maui LLC will endeavor to maintain as much of the existing Monkeypod tree canopy in the parking area as reasonably possible. As explained to the KRDRC, given the current plans for the parking structure, we believe that only two rows of trees where the parking structure will be built will need to be removed. We should be able to maintain the row of Monkeypod trees along the property boundary with Kaanapali Alii. Also, per the suggestion of the KRDRC, Westin Maui LLC will explore the feasibility of incorporating more landscaping to the top deck of the parking structure.

6. "During the development of the preliminary design consideration should be given to increasing the landscaping screen buffer of the proposed parking structure, especially along the north, south and east sides of the structure."

Westin Maui LLC is committed to increasing the landscaping buffer of along the north, south and east sides of the proposed parking structure. Also, at the suggestion of the KRDRC, landscaping will be installed in the area between the parking structure and

Kaanapali Parkway, as well as along the edge between the 4th and 5th levels of the parking structure.

ADDITIONAL REQUIREMENTS FOR CONCEPTUAL APPROVAL

In your June 21, 2013 letter, under the heading "ADDITIONAL REQUIREMENTS FOR CONCEPTUAL APPROVAL", you ask that Westin Maui LLC commit to addressing a number of specific issues. The following is our response thereto:

A. The "unapproved construction along the group entrance at the Whalers Village/Westin service road".

Westin Maui LLC will open up the service driveway on the north side of the hotel ballroom so that Westin Maui shuttle buses as well as tour buses dropping off and picking up Westin Maui guests can enter and exit onto Kaanapali Parkway. As we explained to the KRDRC, the revisions to the May 2013 plans include enclosure of the existing Back of House/Laundry area and additional landscaping along the new building edge. This area will become a single story structure and will allow for the removal of materials which currently block the service driveway.

B. The "drainage condition at Nohea Kai and Kaanapali Parkway to address the 'black lagoon' condition caused by the loading dock drainage system".

As explained to the KRDRC, Westin Maui LLC has taken the initiative to clean out the area referred to as the black lagoon", and as of the date of this letter, this area is no longer black. However, as we also explained, we have confirmed that (i) the drainage systems of at least three properties are connected thereto: Kaanapali Alii, the Westin Maui Resort & Spa, and the Whaler's Village; and (ii) the "black lagoon", itself, is not situated on the Westin Maui Resort & Spa property. The KRDRC indicated that the firm of Austin Tsutsumi & Associates has been engaged to study the cause of this problem, and we look forward to hearing the results of this study and working with the KRDRC in doing our share to determine the appropriate solution.

C. The "miscellaneous problems accrued over time such as unapproved improvements particularly in the service and 'back of house' areas such as vents, roof mounted Christmas decoration mounting wires etc."

Westin Maui LLC is committed to looking further into these problems and doing what is reasonably possible to address them.

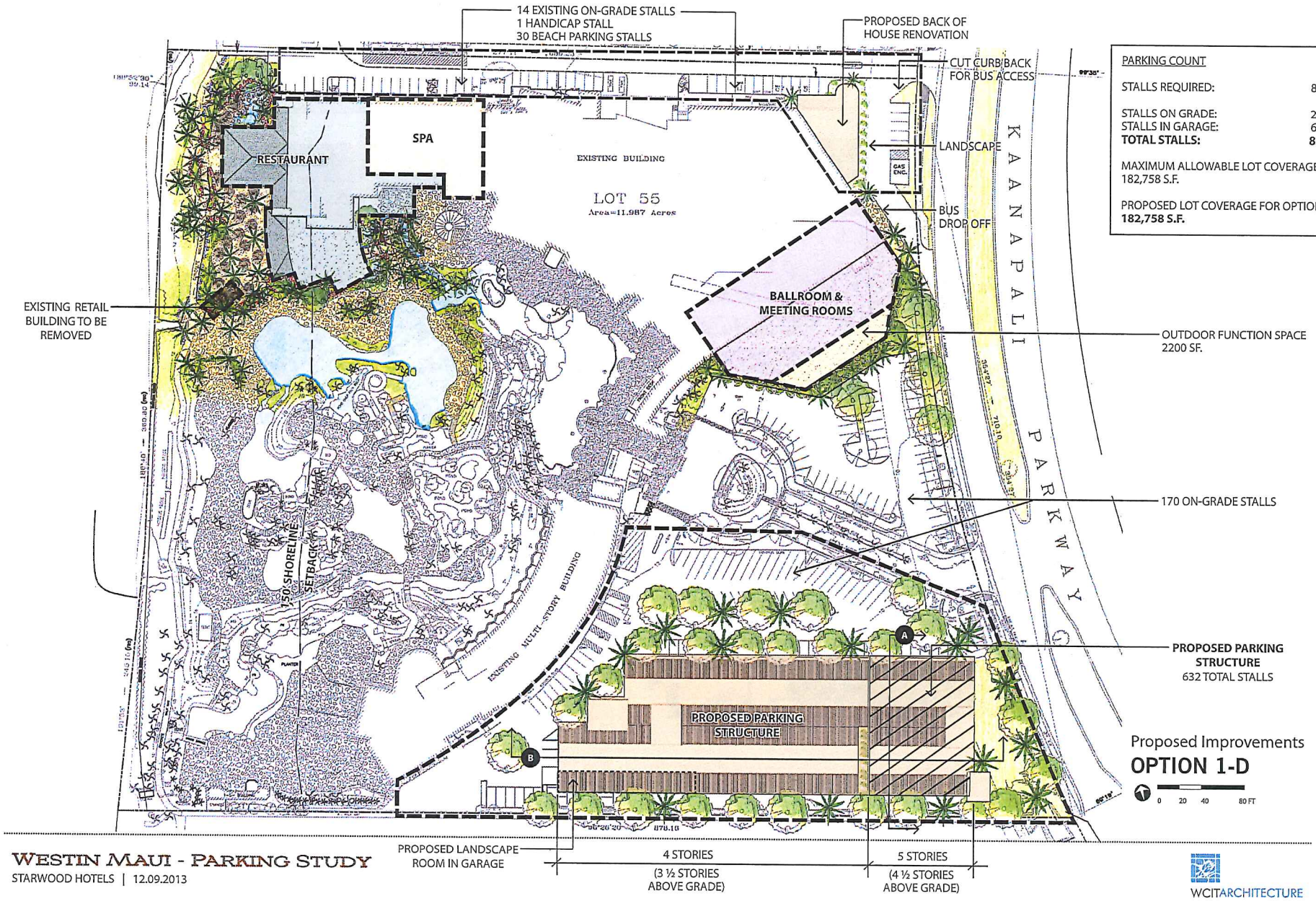
* * * * *

We believe that with the submission of this letter, Westin Maui LLC has satisfied Meeting #2 and the requirements under Section II.C.(2) of the Design Standards. Accordingly, and as mentioned during our meeting on December 2nd, we respectfully request written confirmation of KOA's approval with respect to this stage of the Design Standards' review process. Thank you.

Sincerely,

Gregg Lundberg
General Manager
The Westin Maui Resort & Spa

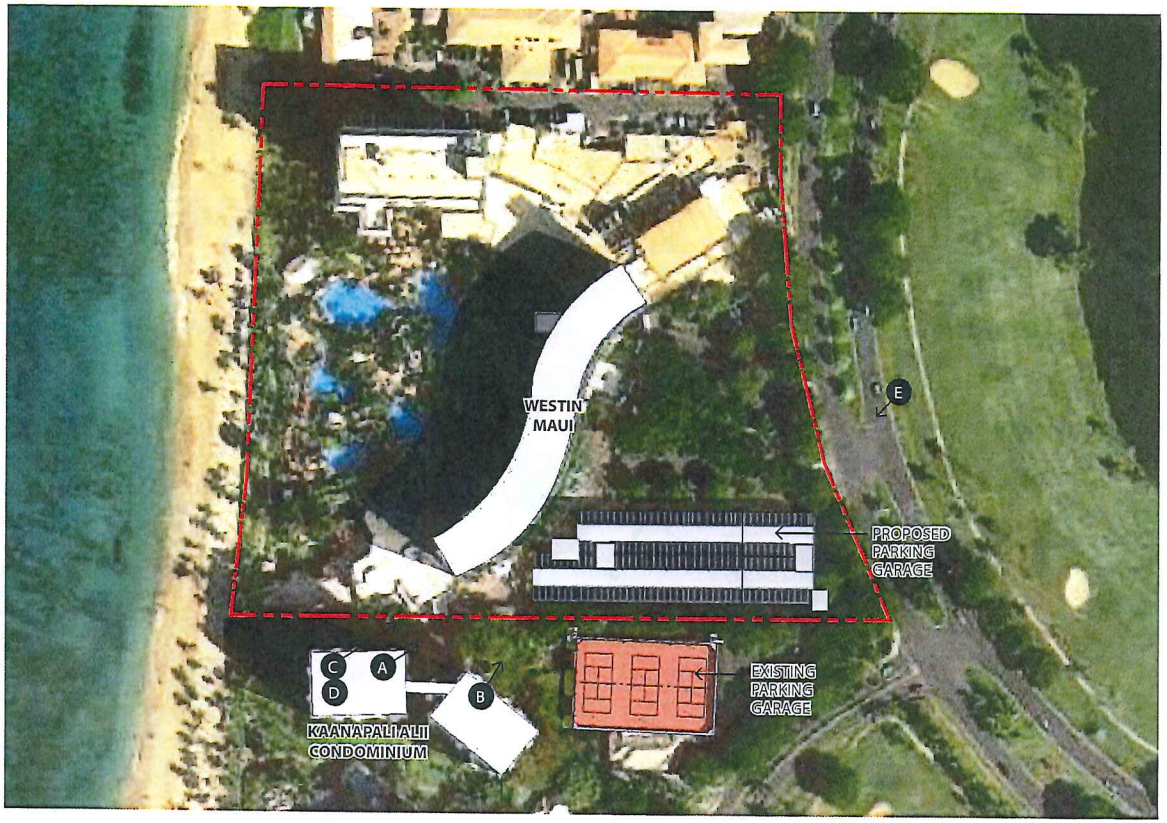
Enclosures



WESTIN MAUI - PARKING STUDY

STARWOOD HOTELS | 12.09.2013

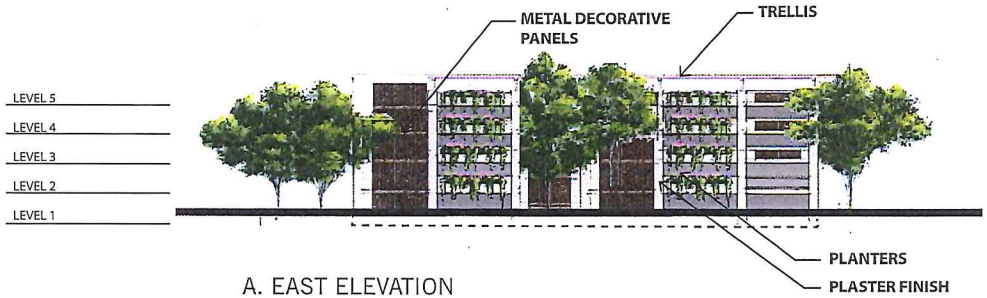
WCITARCHITECTURE



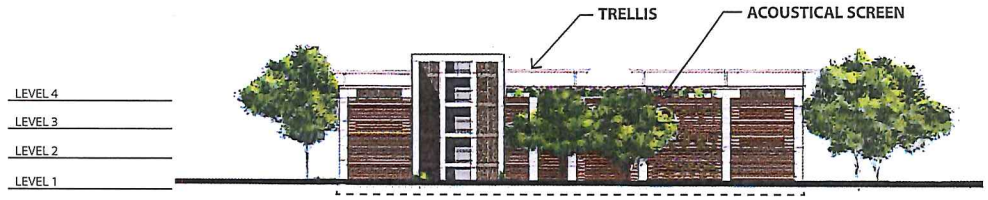
Proposed Improvements

OPTION 1-D

0 20 40 80 FT



A. EAST ELEVATION

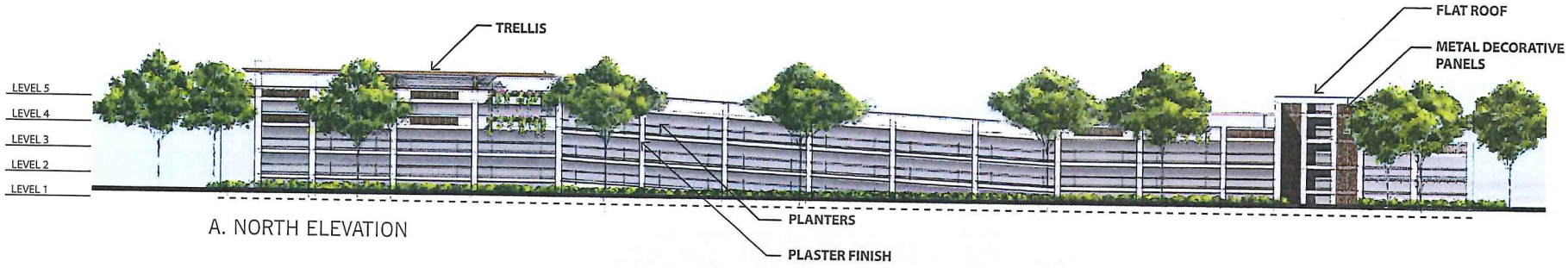


B. WEST ELEVATION

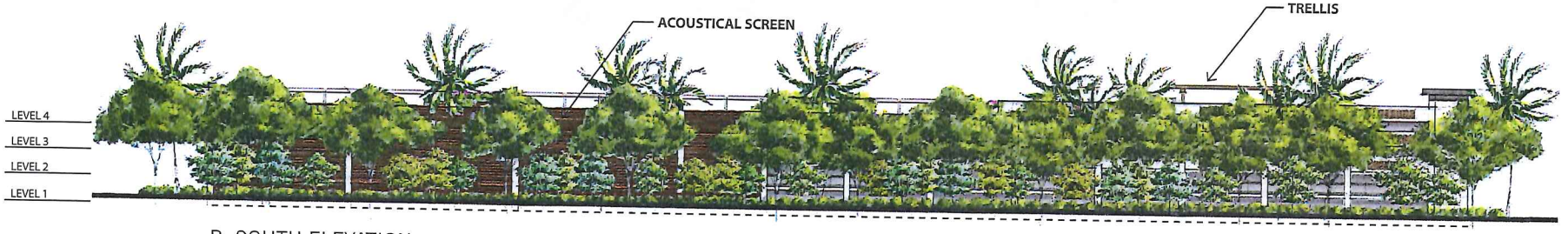
KEYPLAN

Proposed Parking Structure Elevations

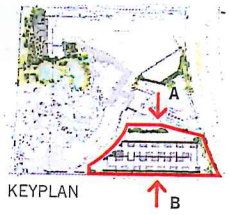
0 8 16 32 FT



A. NORTH ELEVATION



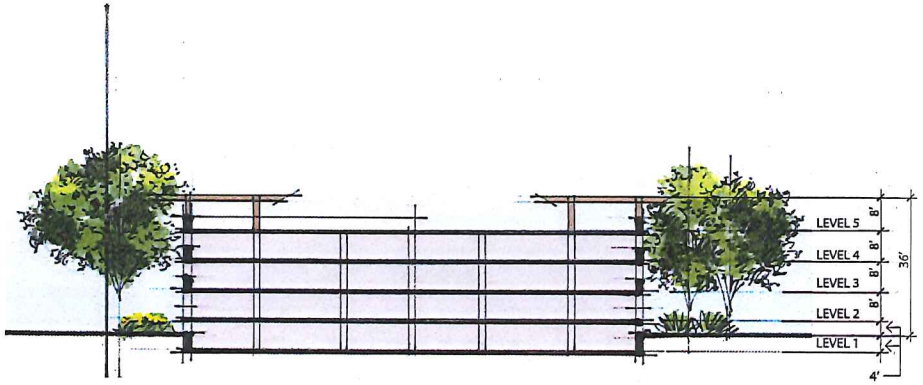
B. SOUTH ELEVATION



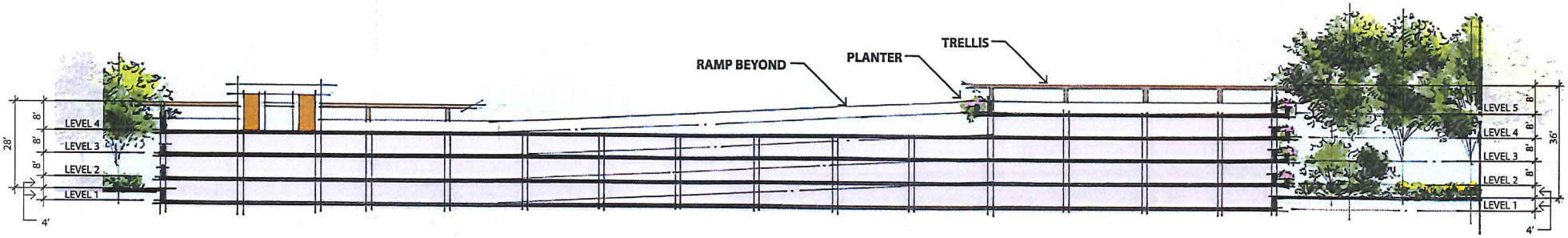
KEYPLAN

Proposed Parking Structure Elevations

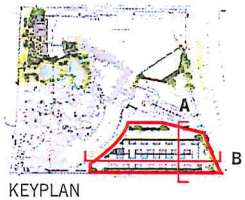
0 8 16 32 FT



SECTION A



SECTION B



KEYPLAN

Proposed Parking Structure Sections

0 8 16 32 FT

View "A" - 2nd Floor (Unit 121)

View "B" - 4th Floor (Unit 242)

View "C" - 9th Floor (Unit 193)

View "D" - 11th Floor (Unit 1103)

Option 1-D
Parking Garage
View Corridor Study

0 8 16 32 FT

View "E" - Street view without trees

View "E" - Street view with trees

Option 1-D
Parking Garage
View Corridor Study

0 8 16 32 FT

APPENDIX G.

Special Management Area Minor Permit and Shoreline Setback Approval (February 15, 2000)

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 15, 2000

Mr. Edward K. Sowers
Westin Maui Hotel
2365 Kaanapali Parkway
Lahaina, Hawaii 96761

Dear Mr. Sowers:

Re: Special Management Area Assessment/Determination, and Shoreline Setback Approval for the Proposed Construction of Americans with Disabilities Act (ADA) Compliant Walkway Improvements and a New Bridge from the Beach Walkway to the Sound of the Falls Restaurant at the Westin Maui Hotel at TMK: 4-4-008:Por. of 19, Kaanapali, Maui, Hawaii (SM2 2000/0010) (SSA 2000/0002)

The Maui Planning Department (Department) is in receipt of your applications, dated February 7, 2000, requesting approval of ADA compliant walkway improvements for the Sound of the Falls Restaurant at the Westin Maui Hotel. The Department notes that the proposed improvements are located within the 150 ft. shoreline setback area and are limited to public walkways from the existing beach walkway and a new bridge over the existing pond to serve as a new entrance to the restaurant. Further, all work is ~~makai~~ mauka of the existing beach walkway.

Pursuant to Chapter 343, Environmental Impact Statements, Hawaii Revised Statutes, the work is limited to "minor alterations in the condition of land, water or vegetation" and "construction and placement of minor structures accessory to existing facilities," and as such, qualifies as an exempt class of action which does not have any cumulative significant impact.

Pursuant to Section 12-5-11(e)(3) of the Shoreline Setback Rules of the Maui Planning Commission, the proposed improvements qualify as "paved walkways for public access" which do not affect beach processes, do not artificially fix the shoreline, and do not interfere with public access or public views to and along the shoreline and are hereby determined to constitute a minor structure.

Further, pursuant to Sections 12-202-12 and 12-202-14 of the Special Management Area Rules of the Maui Planning Commission, a determination has been made relative to the above project that:

1. Said project is a development;

2. Said project has a valuation not in excess of $125,000.00 (Valuation: $100,000.00);

3. Said project has no significant adverse environmental or ecological effect taking into account potential cumulative effects; and

4. Said project is consistent with the objectives, policies, and Special Management Area guidelines set forth in the Hawaii Revised Statutes (HRS), Chapter 205-A, and is consistent with the County General Plan and Zoning.

In consideration of the above determinations, you are hereby granted a Shoreline Setback Approval and Special Management Area Minor Permit Approval, subject to the following conditions:

1. That construction shall be in accordance with plans received on February 7, 2000.

2. That a building permit shall be obtained prior to the initiation of construction (if applicable).

3. That work within the minimum 40 ft. setback area shall be limited to public access walkways and landscape planting and irrigation.

4. That appropriate measures shall be taken to mitigate the short-term and long-term impacts of the project relative to soil erosion from wind, rain, and ambient noise levels.

5. That construction shall be initiated by August 30, 2000, and shall be completed within one (1) year of said initiation.

6. That full compliance with all other applicable governmental requirements shall be rendered.

Thank you for your cooperation. If additional clarification is required, please contact Ms. Colleen Suyama, Staff Planner, of this office at 270-7735.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:CMS:cmb
c: Clayton Yoshida, AICP, Deputy Director of Planning
Aaron Shinmoto, Planning Program Administrator (2)
Colleen Suyama, Staff Planner
Milton Arakawa, Munekiyo, Arakawa & Hiraga, Inc.
Greg Bayless, Bayless Architects, Inc.
LUCA (2)
DLNR, Maui
Office of Planning
00/SM2 Minor Permit File
00/SSA File
00/CZM File
General File
(S:\planning\westinfa)

APPENDIX H.

EA Exemption, SMA Exemption and Shoreline Setback Approval (March 18, 2009)

CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

KATHLEEN ROSS AOKI
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 18, 2009

Mr. Kyle Ginoza
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Ginoza:

SUBJECT: SPECIAL MANAGEMENT AREA (SMA) ASSESSMENT AND SHORELINE SETBACK APPROVAL ASSESSMENT FOR POOL DECK RENOVATION AT THE WESTIN MAUI RESORT & SPA, KA'ANAPALI, ISLAND OF MAUI, HAWAII, TMK: (2) 4-4-008:019 (SMX 2008/0417) (SSA 2008/0041) (SM5 2009/0081) (EAE 2009/0009)

This letter is in response to your Special Management Area Assessment Use Permit Application and Shoreline Setback Assessment Application received on September 18, 2008, for the subject permits.

The proposed actions at the Westin Maui Resort & Spa property, which is located in the Ka`anapali Resort on Maui, is to complete various repairs and maintenance for approximately 50,000 square feet of existing flagstone floor surface in the pool and lanai areas with repairs consisting of new flagstone or other hard surface. In addition, new utility lines will be installed to supply tiki torches in the pool area under portions of the flagstone floor surface prior to repair. The project area is a portion of the resort, which contains the pool and lanai areas, and which is located within the County's Special Management Area (SMA). The coastline in the vicinity of the project area is a sandy beach (Ka`anapali Beach). The Department acknowledges that a portion of the proposed scope of work is located within the Shoreline Setback Area.

In accordance with the *Special Management Area Rules for the Maui Planning Commission* (SMA Rules), Sections 12-202-12 and 12-202-14, the *Shoreline Rules for the Maui Planning Commission, as amended* (Shoreline Rules), Chapter 12-203, a determination has been made relative to the above project that:

1. The project has a valuation greater than $125,000.00; **(Valuation: $3,890,000.00)**

2. Under the SMA Rules, the proposed action is considered "Repair, maintenance or interior alterations to existing structures";

3. The project is not a development, according to Section 205A-22, HRS, and is exempt from the SMA rules, provided the use, activity, or operation does not have a cumulative impact or significant environmental or ecological effect on the Special Management Area;

4. Appropriate Best Management Practices will be practiced during the repairs to safeguard against any construction debris or runoff from entering the ocean and to preserve and protect the natural resources of the coastal zone;

5. The subject property is an improved resort/hotel property located in an area of existing urban development. There are no wetlands on the subject property, nor are there any important habitats or cultural resources. The project area has been substantially altered by its development as a resort; the proposed action represents minor, maintenance-oriented work to the resort. An Archaeological Monitoring Plan for the project was submitted to the State Historic Preservation Division (SHPD) and accepted on September 17, 2008, Log No.: 2008.3848, Dc. No.: 0809PC20 Archaeology;

6. The proposed action will not result in cumulative impacts to the environment, nor will it involve a commitment to larger actions. The proposed action represents improvements to facilities at an existing resort property. The proposed action will not place new demands or have an adverse impact upon existing infrastructure and public services;

7. The proposed action is not contrary to the Hawai'i State Plan, the Maui County General Plan, or the West Maui Community Plan. The subject property is in the State "Urban" district and is designated for "Hotel" use by the West Maui Community Plan and for "H-2, Hotel" use by Maui County zoning. As a result, the proposed action is permitted by existing land use plans, policies, and controls;

8. The project site is located primarily within the limits of Flood Zone C, denoting areas of minimal flooding, with a small portion of the site located in Flood Zone A4, with a base flood elevation of 6 feet. All construction activities will be subject to full compliance with Chapter 19.62 Flood Hazard Areas of the Maui County Code. It is noted that the proposed actions do not involve improvements to habitable structures;

9. A portion of the proposed action is located within the shoreline setback area. The proposed improvements are permitted uses within the shoreline setback area. A State Certified Shoreline Survey dated October 18, 2008 has been submitted as part of the Application. Adverse impacts to environmentally sensitive areas are not anticipated; and

10. The project is consistent with the objectives, policies, and Special Management Area guidelines set forth in the Hawaii Revised Statutes (HRS), Chapter 205-A, and is consistent with the County General Plan and Zoning, and the West Maui Community Plan.

The proposed activities are exempt from Chapter 343 rules for preparation of an environmental assessment, under the authority of Chapter 343, HRS, and Chapter 11-200 Hawaii Administrative Rules (HAR), under Exemption Class 2, Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced.

In light of the above determinations, you are hereby granted an Environmental Assessment Exemption.

In light of the above determinations, you are hereby granted a Special Management Area Exemption (SM5) for the proposed actions.

Furthermore, the Department has determined that a portion of the work will take place in the Shoreline Setback Area.

All proposed structures and activities within the Shoreline Setback Area are subject to the restrictions provided for in the *Shoreline Rules for the Maui Planning Commission*, Section 12-203-12, and are limited to only activities and structures permitted under the Shoreline Rules that do not affect beach processes, do not artificially fix the shoreline, and do not interfere with public access or public views to and along the shoreline, including a structure that has been legally permitted, and is the subject of repairs that are valued by a licensed professional engineer or architect at less than 50 percent of the current replacement cost of the structure and which neither enlarges the structure nor intensifies the use of the structure.

The project valuation is estimated at $3,985,000.00. The equivalent cost to replace the existing pool and appurtenant structures is quoted at around $21,000,000.00. Thus, the repairs are less the 50 percent of the pool construction replacement costs.

In light of the above determinations, you are hereby granted a Shoreline Setback Approval.

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner Jim Buika via email at james.buika@mauicounty.gov or by phone at 270-6271.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

For: JEFFREY S. HUNT, AICP
Planning Director

xc: Aaron H. Shinmoto, PE, Planning Program Administrator
James A. Buika, Staff Planner
Project File
SM5 file
EAE file
SSA file
General File

JSH:CIY:JAB:sg
K:\WP_DOCS\PLANNING\SM5\2009\0081_Westinmaui\SSA Approval.Doc

SPECIAL MANAGEMENT AREA ASSESSMENT
Westin Maui Resort Pool Repairs and Maintenance
TMK (2) 4-4-008:019
SMX 20080417 SSA 20080041

DESCRIPTION OF PROPOSED ACTION

Describe Proposed Action:

The applicant proposes various repair and maintenance actions at The Westin Maui Resort & Spa property, which is located in the Ka`anapali Resort on Maui. The project area is a portion of the resort, which contains the pool and lana`i areas, and which is located within the County's Special Management Area (SMA). The property is identified as TMK (2) 4-4-008:019.

The project scope meets the criteria for actions exempt from SMA rules as being considered not "development".

The approximately 50,000 square foot, existing flagstone floor surface in the pool and lana`i areas of the resort will be repaired with new flagstone or other hard surface. This action qualifies for the SMA exemption class related to "Repair, maintenance, or interior alterations to existing structures".

In addition, new utility lines will be installed to supply tiki torches in the pool area under portions of the flagstone floor surface prior to repair. It is anticipated that this action will qualify for the SMA exemption class related to "Installation of underground utility lines and appurtenant aboveground fixtures less than four feet in height along existing corridors".

The project valuation is estimated at $3,985,000. The equivalent cost to replace the existing pool is quoted at around $21,000,000. Thus, the repairs are less the 50% of the pool construction costs.

The environmental setting of the property (description of property):

The Westin Maui Resort & Spa is located at 2365 Ka`anapali Parkway and consists of approximately 750 hotel rooms and related resort amenities. The project site is located on the makai portion of the property. The subject property is identified by Tax Map Key Number (2) 4-4-008:019.

(A) Affects natural or cultural resources (i.e., historic site, excavation on vacant land):

There are no known significant environmental resources on the subject property. The subject property is an improved resort/hotel property located in an area of existing urban development. There are no wetlands on the subject property, nor are there any important habitats or cultural resources. The project area has been substantially altered by its development as a resort; the proposed action represents minor, maintenance-oriented work to the resort. **An Archaeological Monitoring Plan for the project was submitted to the State Historic Preservation Division (SHPD) and accepted on September 17, 2008, Log No.: 2008.3848, Dc. No.: 0809PC20 Archaeology.**

(B) Curtails the range of beneficial uses of the environment:

The proposed action involves a portion of an existing resort property and is limited in size and scope. The proposed action will not impact a scenic view corridor, nor does the project area serve as habitat for rare, threatened, or endangered species of plants and wildlife. The proposed action will not impact environmentally sensitive features, such as wetlands or streams, nor will it create long-term adverse effects upon air and water quality or ambient noise conditions. In this regard, the proposed action does not significantly curtail the beneficial uses of the environment.

(C) Conflicts with the county's or the state's long-term environmental policies or goals (i.e. State Plan, County General Plan, and Community Plan):

The proposed renovations at the subject property do not represent a land use that conflicts with the environmental goals and policies of the Hawai`i State Plan, the Maui County General Plan, and the West Maui Community Plan. The community plan designates the property for "Hotel" use, while Maui County zoning designates the site for "H-2, Hotel" district use. The subject property will continue to be used and operated as a visitor-oriented, hotel resort.

(D) Affects the economic or social welfare and activities of the community, county, or state:

In the short term, the proposed action will provide economic benefits through construction and construction-related employment. Over the long term, the proposed action is intended to enhance the visitor experience and maintain the resort's competitiveness in West Maui's visitor market. No substantial economic or social welfare impacts to the community, County, or State are anticipated.

(E) Involves secondary impacts, such as population changes (i.e. increase/decrease) and increased effects on public facilities, streets, drainage, sewage, and water systems, and pedestrian walkways (i.e. increased demands and deficiencies):

As an improvement to an existing hotel resort use, the proposed action will not have a substantial impact upon the population, nor will it result in any increased demand

or have an adverse effect upon existing utilities, infrastructure, or public services. The proposed action will not alter or extend the service area limits for emergency services, such as police and fire protection. No secondary impacts are anticipated to occur as a result of the proposed action.

(F) **By itself has no significant adverse effects but cumulatively has considerable effect upon the environment (i.e. increased traffic and deficiencies in services) or involves a commitment for larger actions (i.e. more public infrastructure, such as, roads, waterlines, sewers, etc.):**

The proposed action will not result in cumulative impacts to the environment, nor will it involve a commitment to larger actions. The proposed action represents improvements to facilities at an existing resort property. The proposed action will not place new demands or have an adverse impact upon existing infrastructure and public services.

(G) **Affects a rare, threatened, or endangered species of animal or plant, or its habitat (i.e. wetlands, natural area reserve, refuge):**

There are no known rare, threatened, or endangered species of plant or animal life on the subject property, nor are there any wetlands, water bodies, or other critical habitats affected by the proposed action. Consequently, the proposed action is not expected to have an adverse impact on wildlife and sensitive environmental habitats.

(H) **Is contrary to the state plan, county's general plan, appropriate community plans, zoning and subdivision ordinances:**

The proposed action is not contrary to the Hawai'i State Plan, the Maui County General Plan, or the West Maui Community Plan. The subject property is in the State "Urban" district and is designated for "Hotel" use by the West Maui Community Plan and for "H-2, Hotel" use by Maui County zoning. As a result, the proposed action is permitted by existing land use plans, policies, and controls.

(I) **Affects air or water quality or ambient noise levels (i.e. construction impacts):**

Limited short-term construction-related noise and air quality impacts are anticipated. Appropriate Best Management Practices will be implemented to ensure that construction-related impacts are minimized. In the long term, the proposed action is not anticipated to result in any significant air or water quality impacts, nor is it expected to adversely impact ambient noise levels.

(J) **Located in and does it affect an environmentally sensitive area, such as flood plain, shoreline, dunes, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh waters, or coastal waters:**

The project site is located primarily within the limits of Flood Zone C, denoting areas

of minimal flooding, with a small portion of the site located in Flood Zone A4, with a base flood elevation of 6 feet. All construction activities will be subject to full compliance with Chapter 19.62 Flood Hazard Areas of the Maui County Code. It is noted that the proposed actions do not involve improvements to habitable structures.

The project site is also located within the shoreline setback area. The proposed improvements are permitted uses within the shoreline setback area. A State Certified Shoreline Survey data October 18, 2008. Adverse impacts to environmentally sensitive areas are not anticipated.

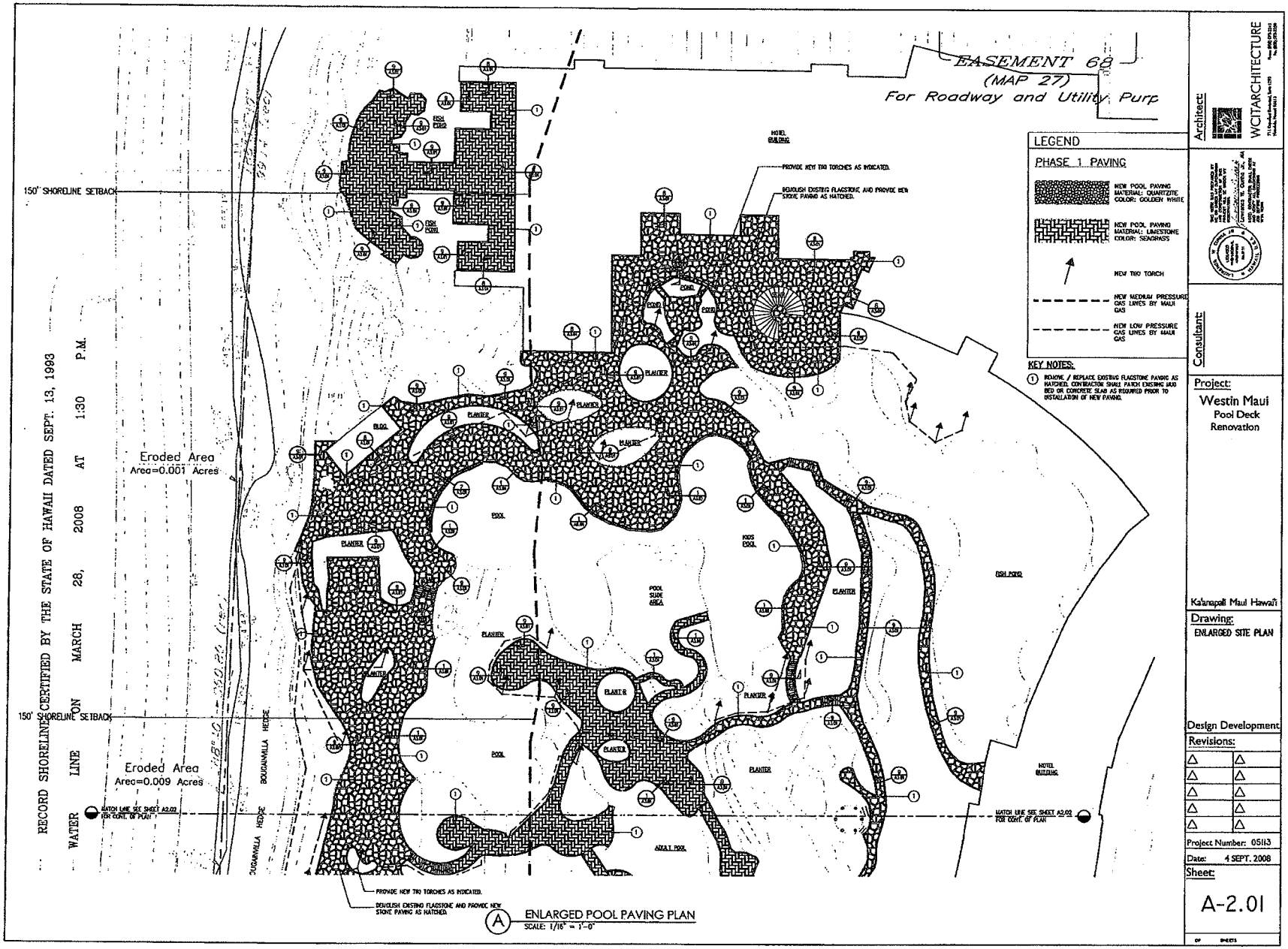
(K) Alters natural land forms (i.e. cut and fill, retaining walls) and existing public views to and along the shoreline:

The proposed improvements will not alter existing natural land forms. The drainage pattern of the site will remain unchanged. As a result, no adverse impacts to drainage conditions are anticipated. Moreover, since the proposed renovations affect existing elements on the resort grounds, they are not expected to significantly alter existing public views to and along the shoreline.

(L) Is contrary to the objectives and policies of chapter 205A, HRS:

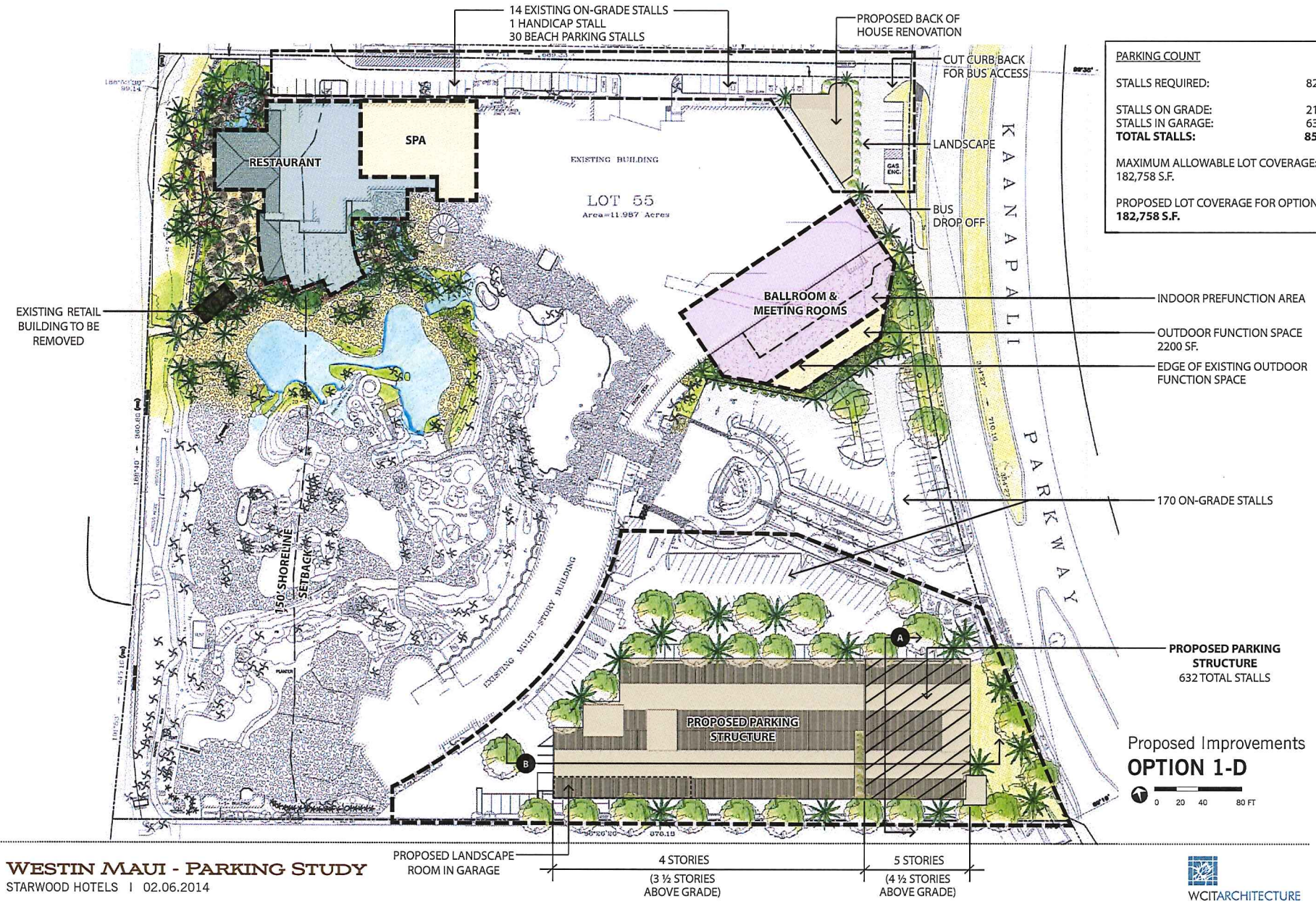
The proposed action is not contrary to the objectives and policies of Chapter 205A, Hawai`i Revised Statutes, relating to coastal zone management (CZM). Recreational, historic, scenic, and marine resources will not be adversely impacted by the proposed project. In addition, coastal and beach processes will not be affected. The proposed action will not adversely impact local economic conditions. The proposed action is also not contrary to the CZM objectives of public awareness, education, and participation. Based on the size and scope of the proposed action, criteria for public participation and review are being accomplished through the SMA Assessment application process.

Planner, Jim Buika, 03.11.09 _____


EASEMENT 68
(MAP 27)
For Roadway and Utility Purp
150' SHORELINE SETBACK
RECORD SHORELINE CERTIFIED BY THE STATE OF HAWAII DATED SEPT. 13, 1993
WATER LINE ON MARCH 28, 2008 AT 1:30 P.M.
Eroded Area
Area=0.001 Acres
Eroded Area
Area=0.009 Acres
150' SHORELINE SETBACK
BOUGAINVILLA HEDGE
MATCH LINE SEE SHEET A2.02 FOR CONT. OF PLAN
MATCH LINE SEE SHEET A2.02 FOR CONT. OF PLAN
HOTEL BUILDING
PROVIDE NEW TIKI TORCHES AS INDICATED.
DEMOLISH EXISTING FLAGSTONE AND PROVIDE NEW STONE PAVING AS HATCHED.
PROVIDE NEW TIKI TORCHES AS INDICATED.
DEMOLISH EXISTING FLAGSTONE AND PROVIDE NEW STONE PAVING AS HATCHED.
POOL
FISH POND
KIDS POOL
POOL SLIDE AREA
ADULT POOL
PLANTER
BLDG.
HOTEL BUILDING
A ENLARGED POOL PAVING PLAN
SCALE: 1/16" = 1'-0"
LEGEND
PHASE 1 PAVING
NEW POOL PAVING MATERIAL: QUARTZITE COLOR: GOLDEN WHITE
NEW POOL PAVING MATERIAL: LIMESTONE COLOR: SEAGRASS
NEW TIKI TORCH
NEW MEDIUM PRESSURE GAS LINES BY MAUI GAS
NEW LOW PRESSURE GAS LINES BY MAUI GAS
KEY NOTES:
1 REMOVE / REPLACE EXISTING FLAGSTONE PAVING AS HATCHED. CONTRACTOR SHALL PATCH EXISTING LAVA BED OR CONCRETE SLAB AS REQUIRED PRIOR TO INSTALLATION OF NEW PAVING.
Architect:
WCITARCHITECTURE
Consultant:
Project:
Westin Maui
Pool Deck
Renovation
Kaanapali Maui Hawai'i
Drawing:
ENLARGED SITE PLAN
Design Development
Revisions:
Project Number: 0513
Date: 4 SEPT. 2008
Sheet:
A-2.01

APPENDIX I.

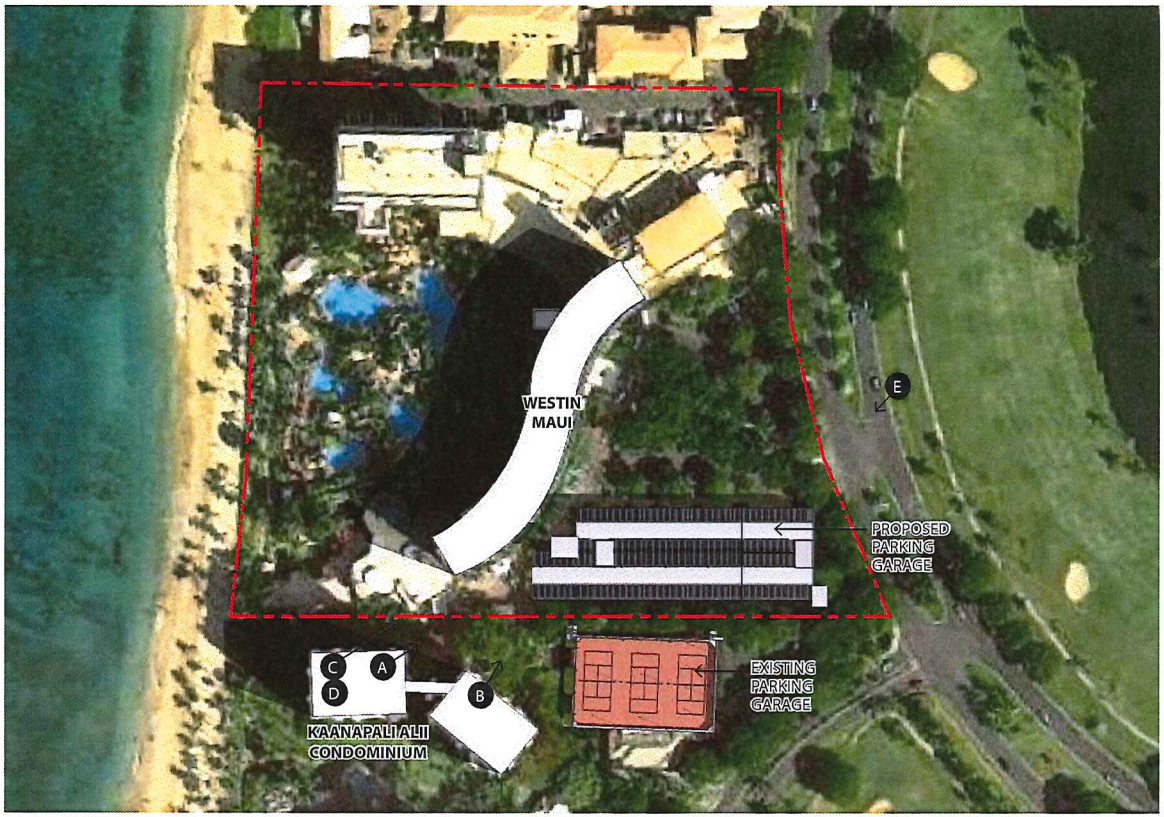
Parking Garage Plans



WESTIN MAUI - PARKING STUDY

STARWOOD HOTELS I 02.06.2014

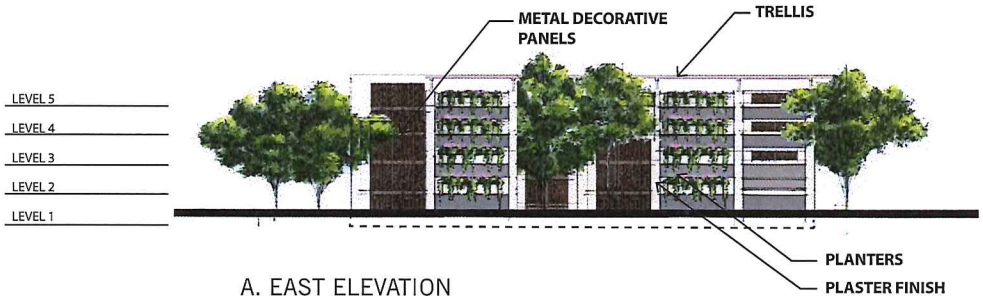
WCITARCHITECTURE



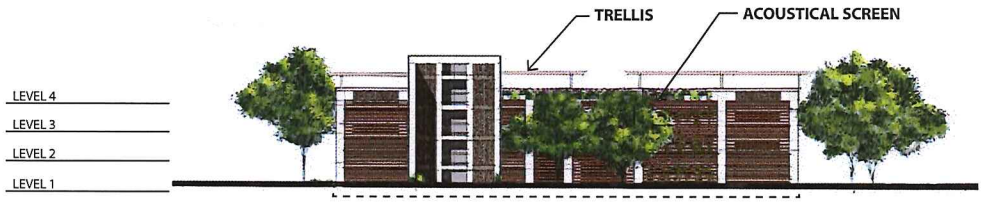
Proposed Improvements

OPTION 1-D

0 20 40 80 FT



A. EAST ELEVATION

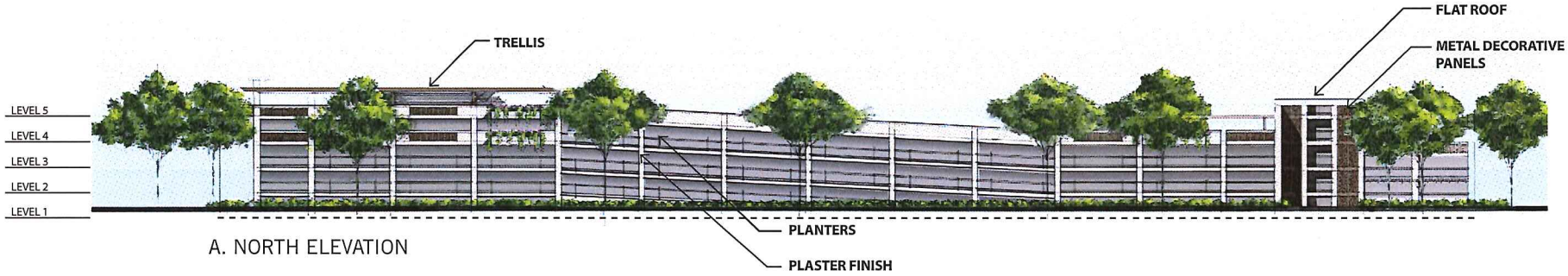


B. WEST ELEVATION

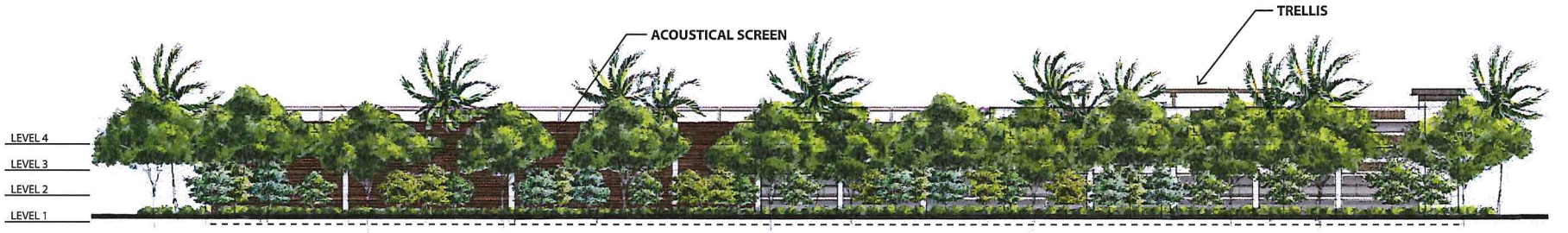
KEYPLAN

Proposed Parking Structure Elevations

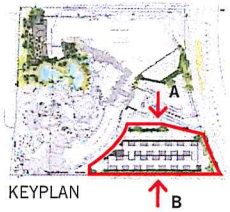
0 8 16 32 FT



A. NORTH ELEVATION



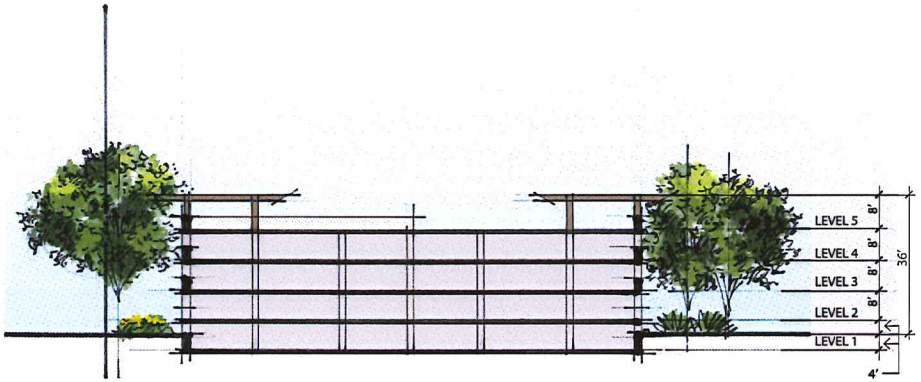
B. SOUTH ELEVATION



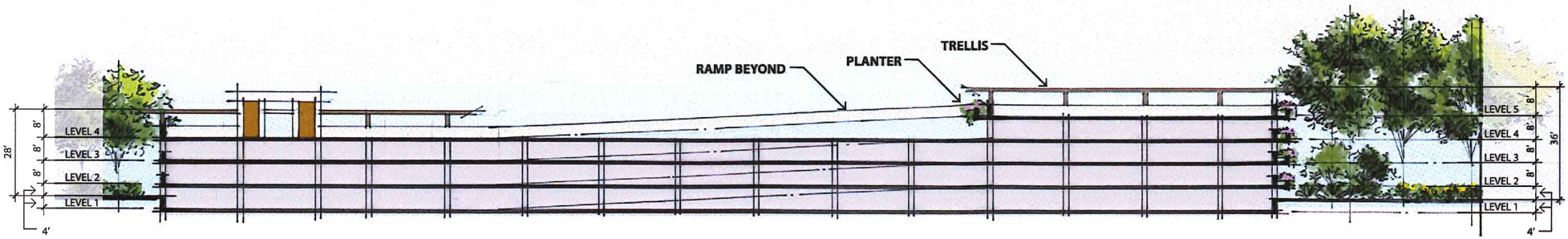
KEYPLAN

Proposed Parking Structure Elevations

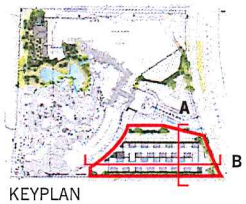
0 8 16 32 FT



SECTION A



SECTION B



KEYPLAN

Proposed Parking Structure Sections

0 8 16 32 FT

Existing View "A" - 2nd Floor (Unit 121)

Proposed View "A" - 2nd Floor (Unit 121)

Existing View "B" - 4th Floor (Unit 242)

Proposed View "B" - 4th Floor (Unit 242)

Option 1-D
Parking Garage
View Corridor Study

0 8 16 32 FT

Existing View "C" - 9th Floor (Unit 193)

Proposed View "C" - 9th Floor (Unit 193)

Existing View "D" - 11th Floor (Unit 1103)

Proposed View "D" - 11th Floor (Unit 1103)

Option 1-D
Parking Garage
View Corridor Study

0 8 16 32 FT

View "E" - Street view without trees

View "E" - Street view with trees

Option 1-D
Parking Garage
View Corridor Study

0 8 16 32 FT