



## **Appendix 4 (continued)**

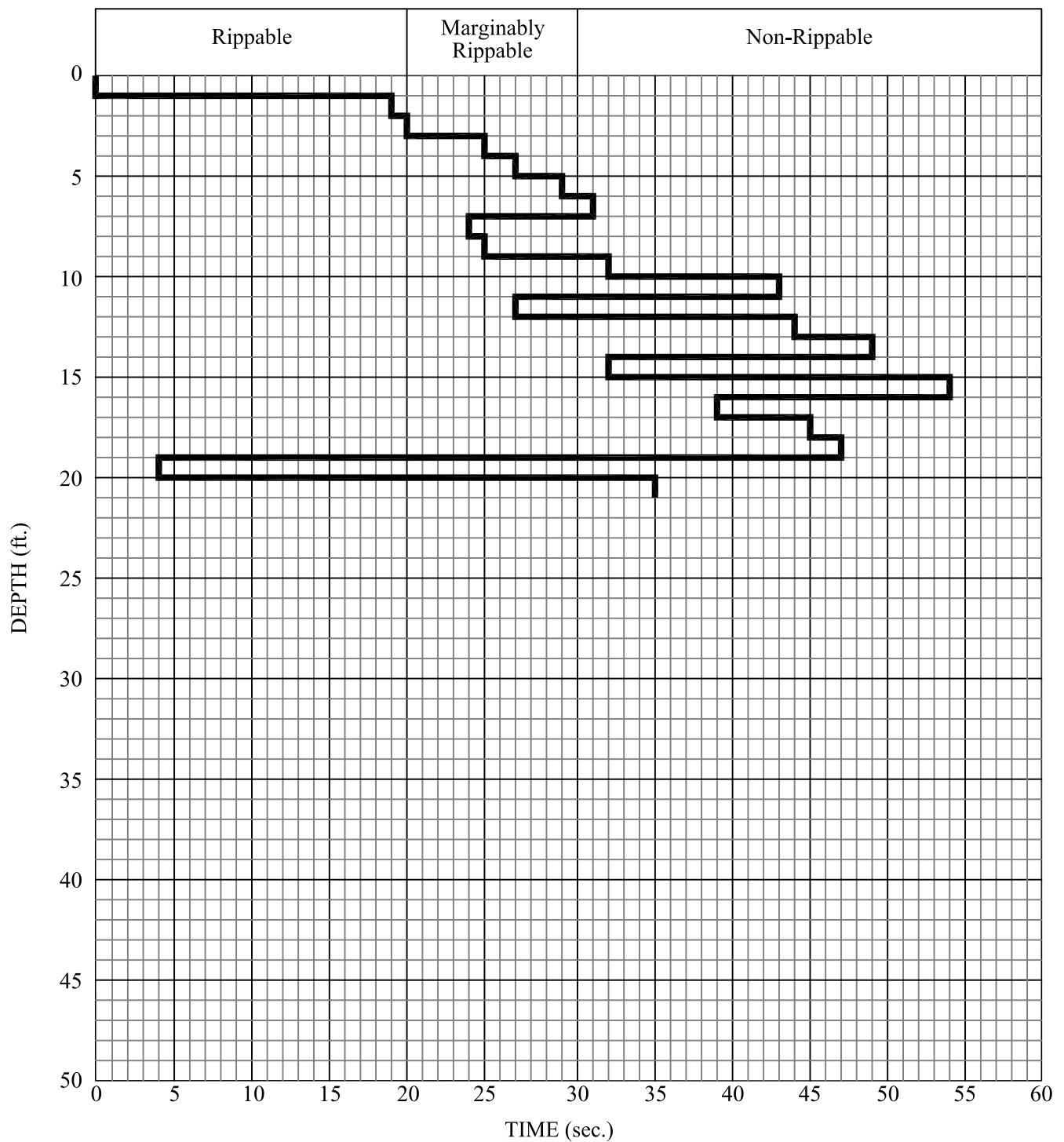
### **Geotechnical Investigation Report**

**APPENDIX C**  
**Rotary Percussion Boring**  
**Field Exploration**

**APPENDIX C**  
**ROTARY PERCUSSION BORING**  
**FIELD EXPLORATION**

---

A total of 25 rotary percussion borings were advanced with a Sandvik DP 1500i track mounted drill rig. A 4.5-inch diameter carbide bit was used to penetrate the site upper residual soil and its underlying less weathered basalt. Compressed air was used to advance the drill bit as well as to flush away the rock cutting. An engineer with Hawaii Geotechnical Consulting, Inc. observed and directed the percussion boring investigation and maintained a log of the advancement rates within the underlying rock. The advancement rates are presented in the Logs of Borings in Appendix B. The rotary percussion boring locations are presented on the Rotary Percussion Boring Location Plan, Figure 2.



Date Completed: 07/20/2017

Logged By: Gibbens/Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

**Hawaii Geotechnical  
Consulting, Inc.**

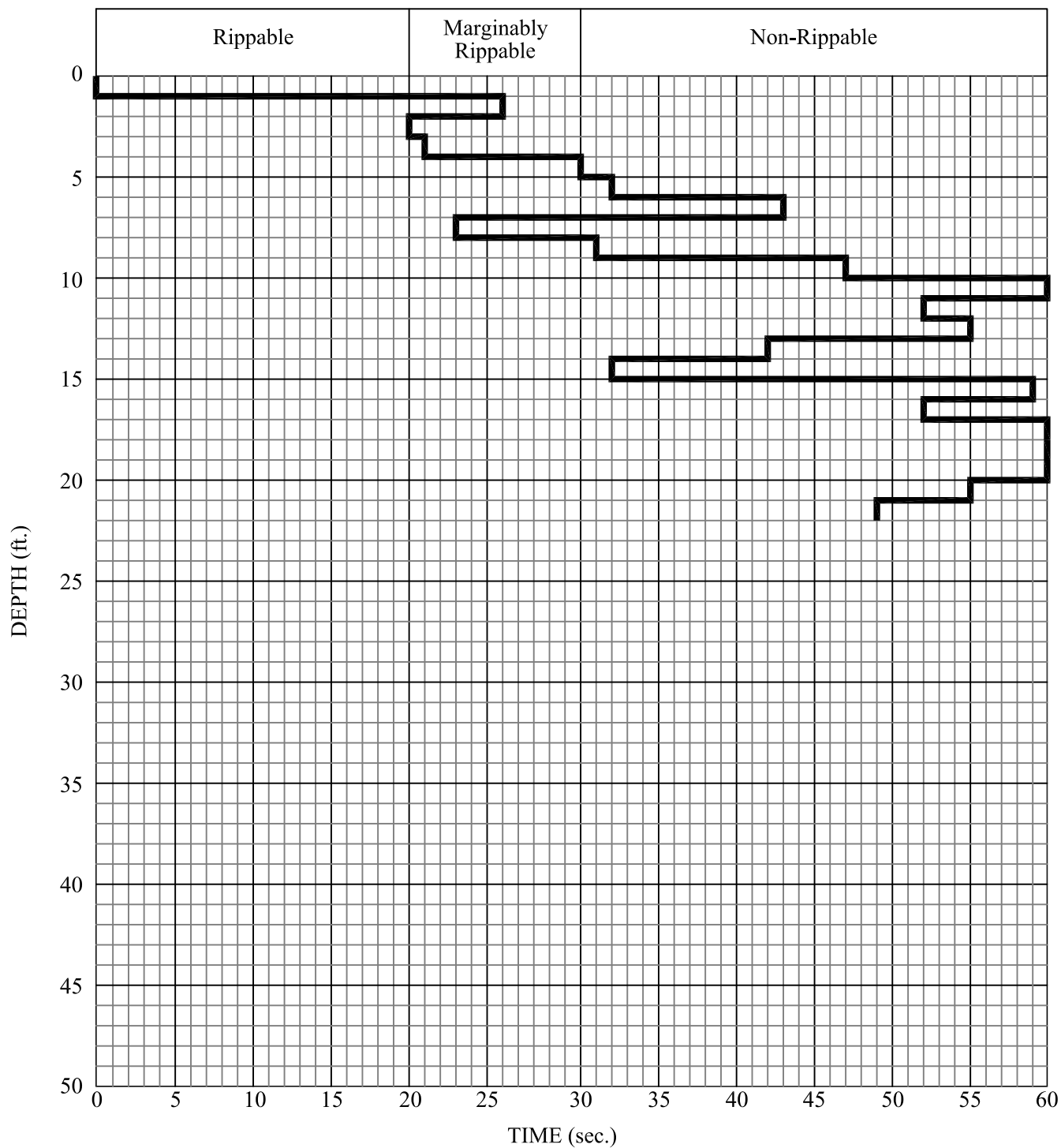
WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B1**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-1**





Date Completed: 07/20/2017

Logged By: Gibbens/Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

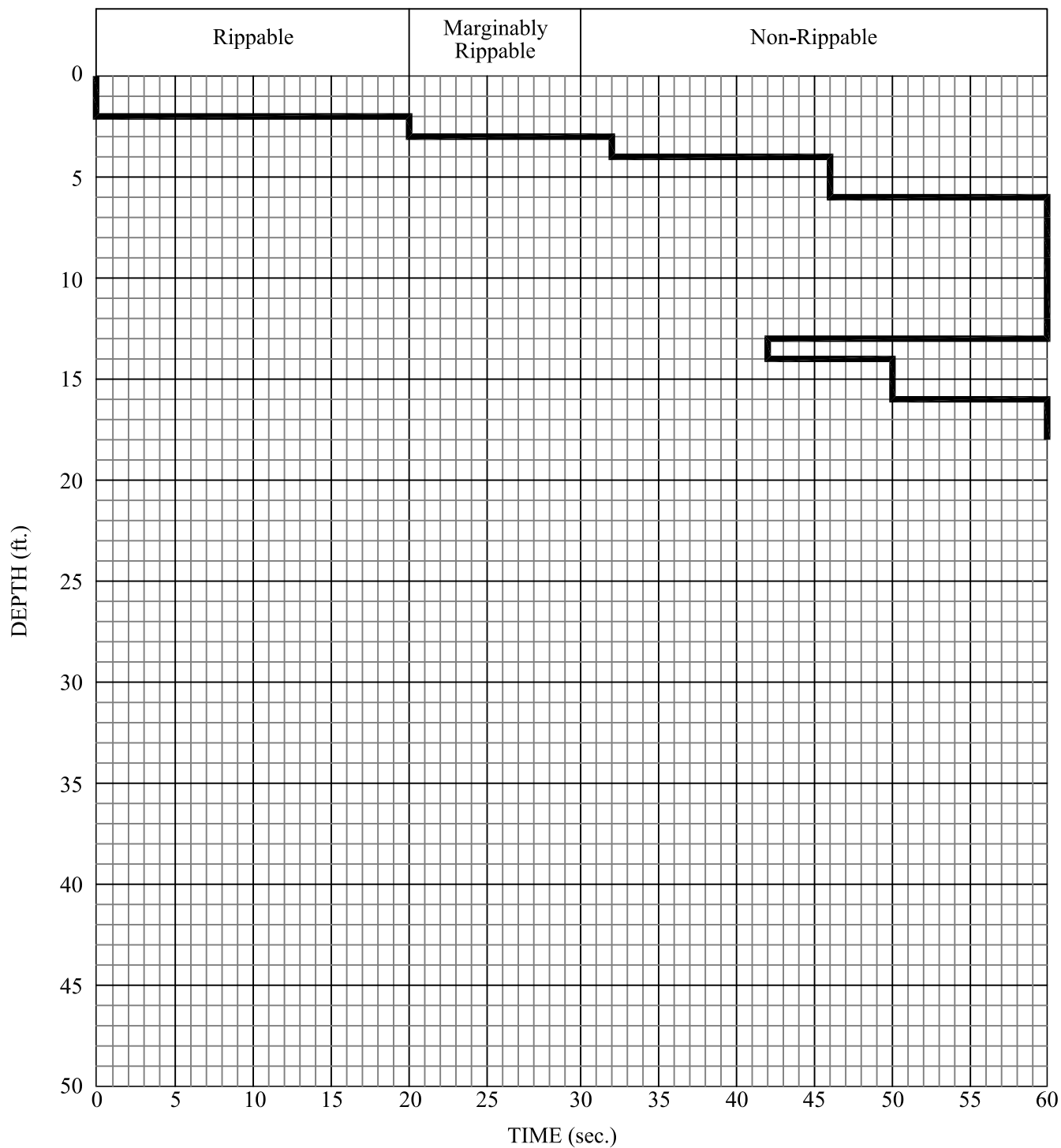
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B2**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-2**



Date Completed: 07/20/2017

Logged By: Gibbens/Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

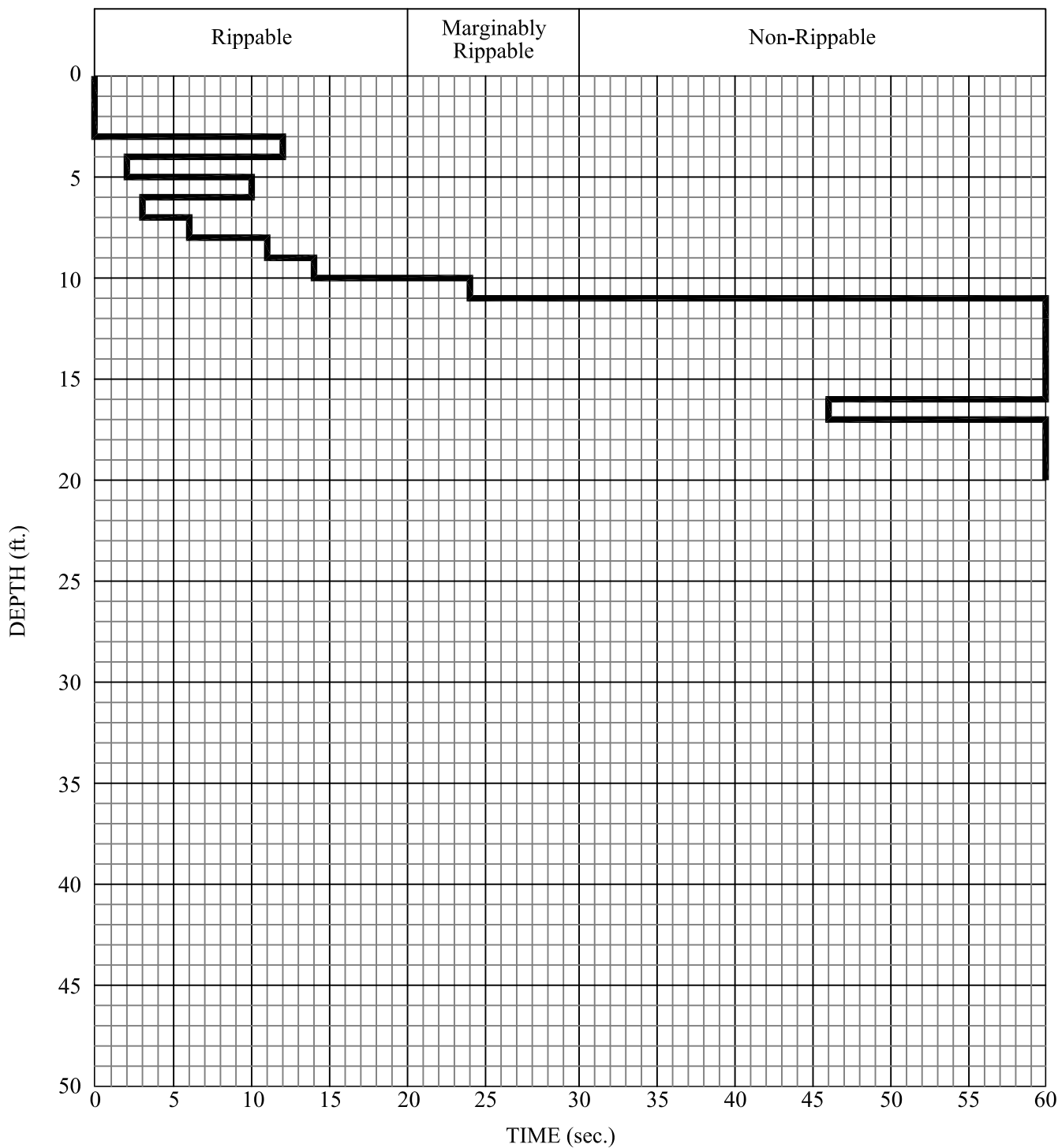
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B3**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-3**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

**Hawaii Geotechnical  
Consulting, Inc.**

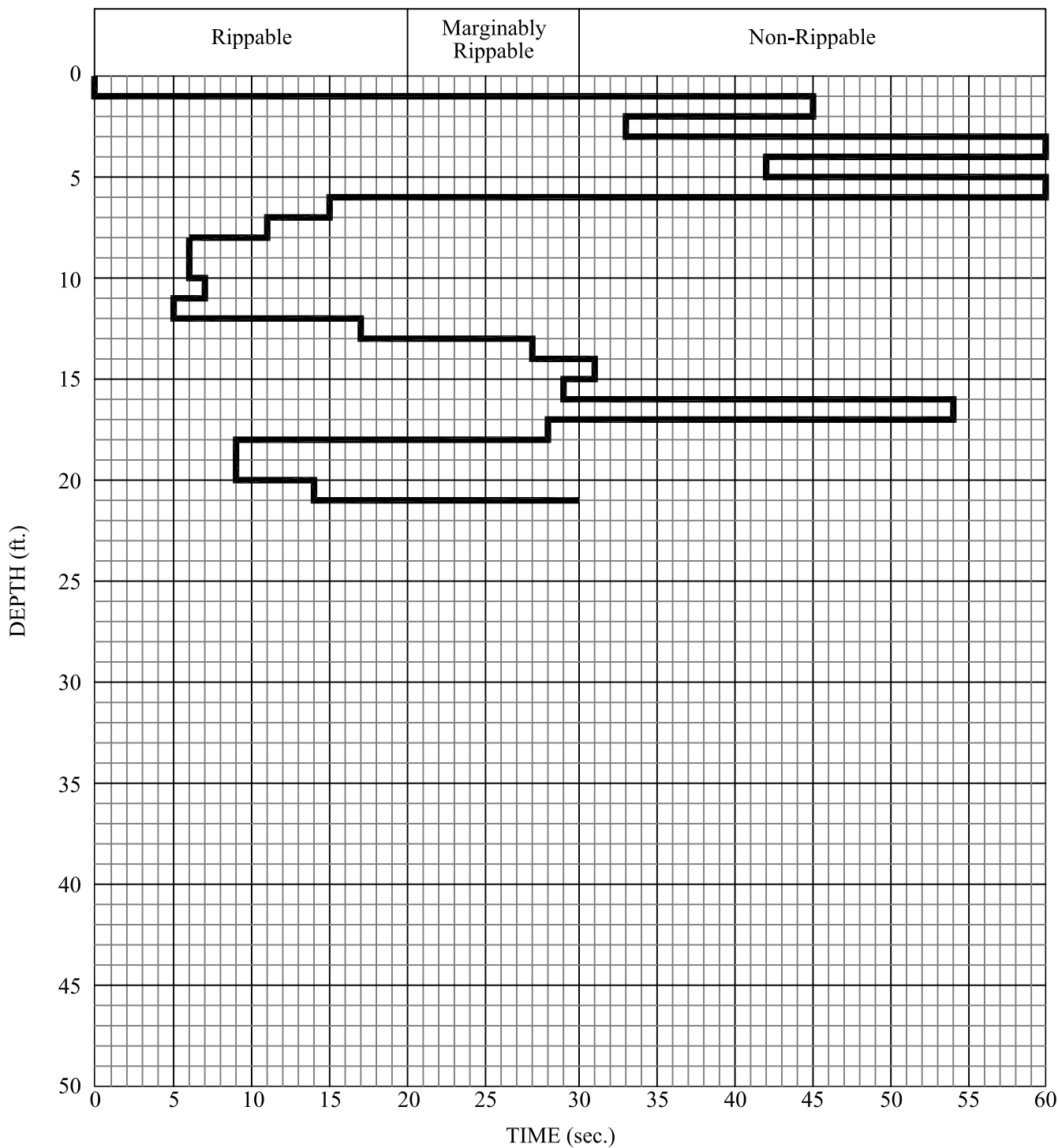
WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

FIGURE

**B4**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-4**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

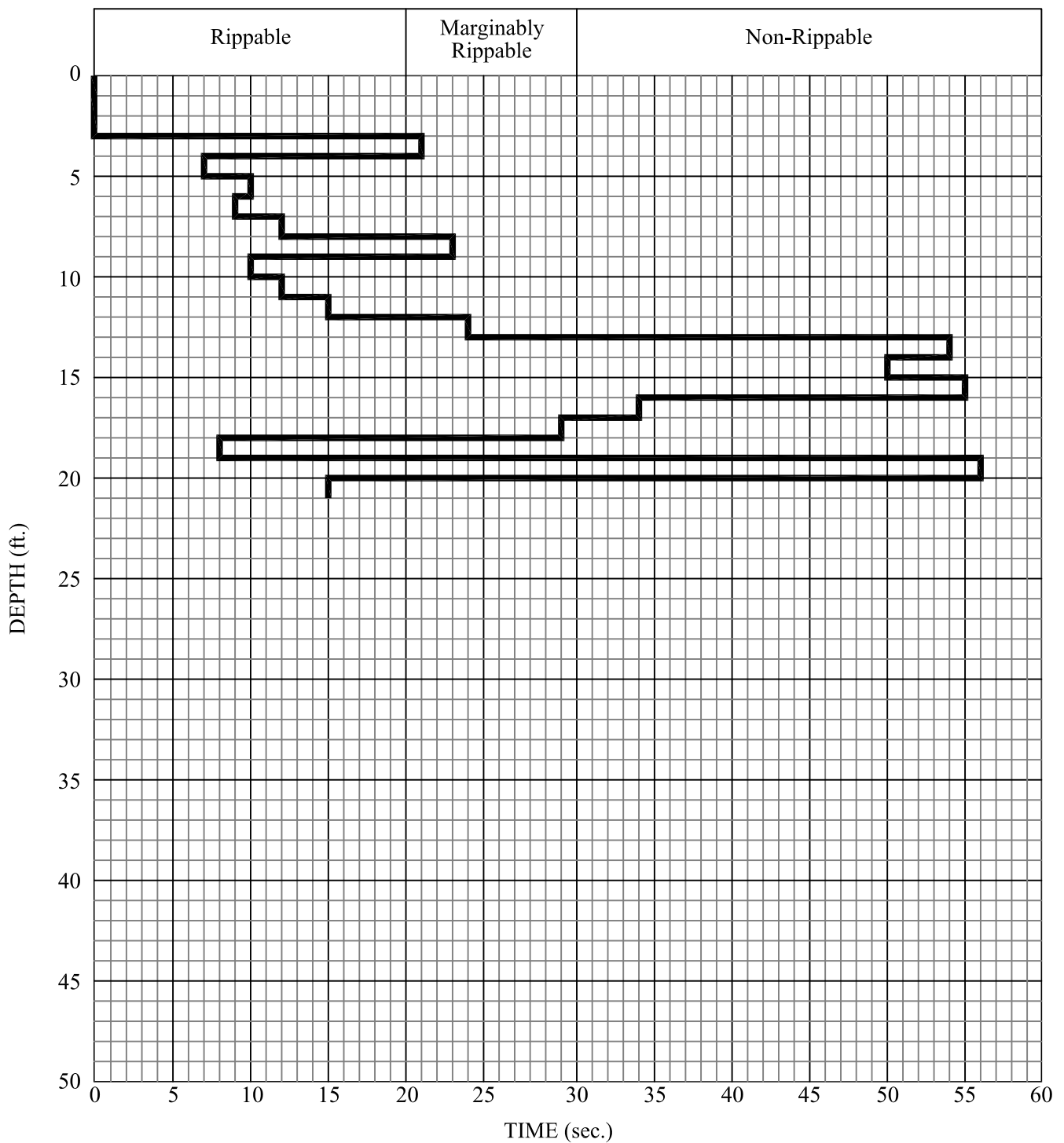
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B5**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-5**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

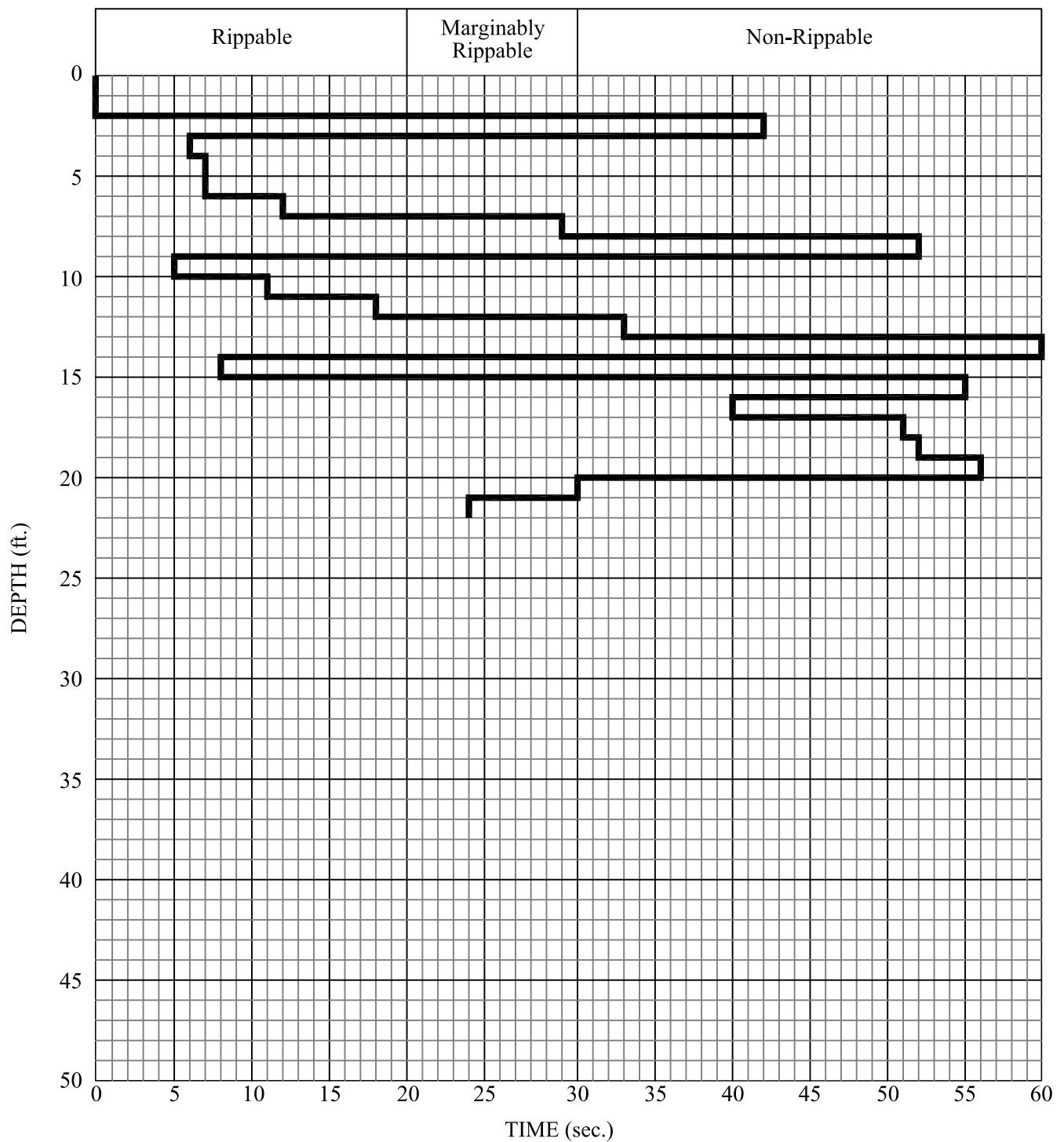
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B6**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-6**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

**Hawaii Geotechnical  
Consulting, Inc.**

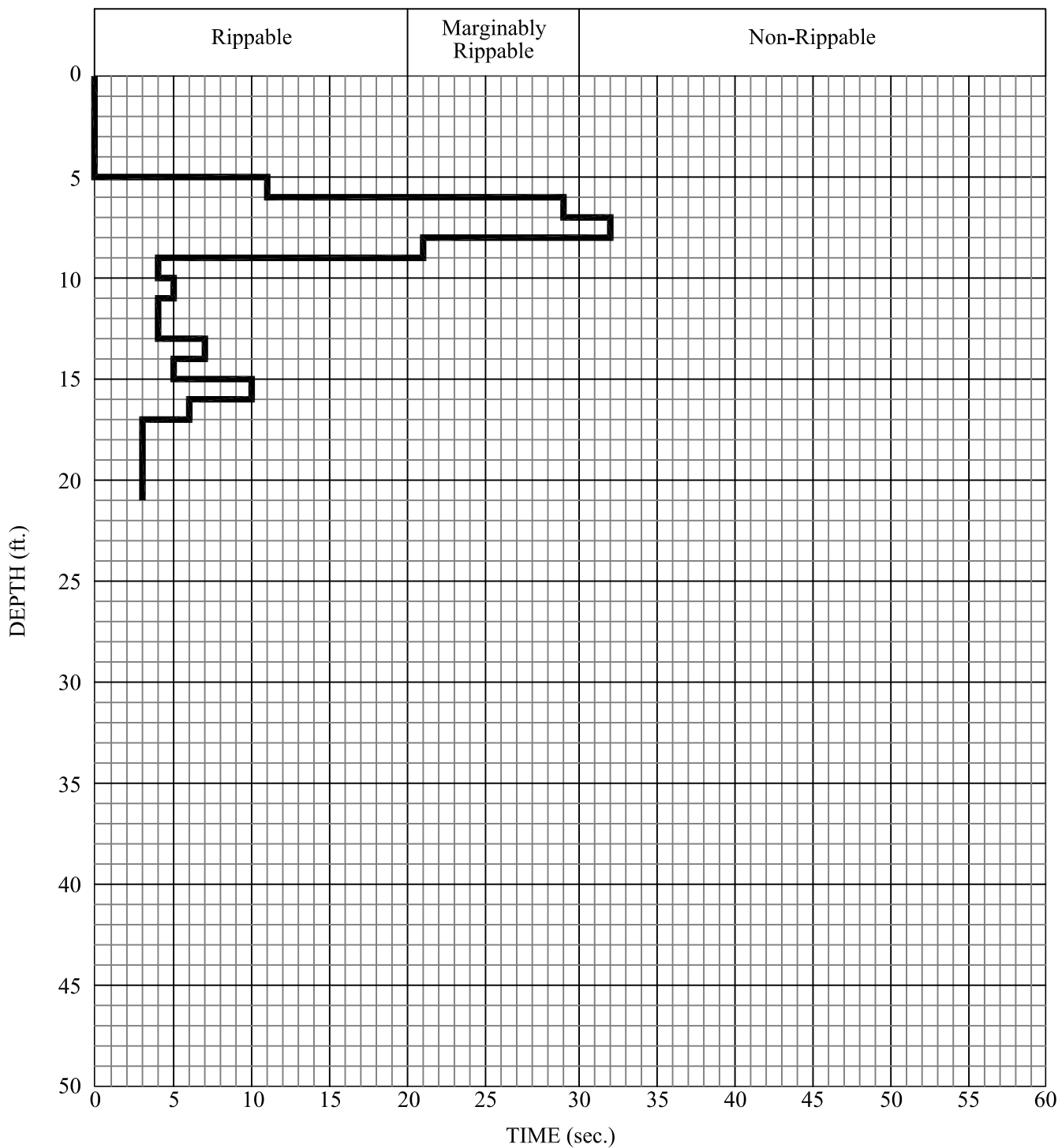
WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

FIGURE

**B7**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-7**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

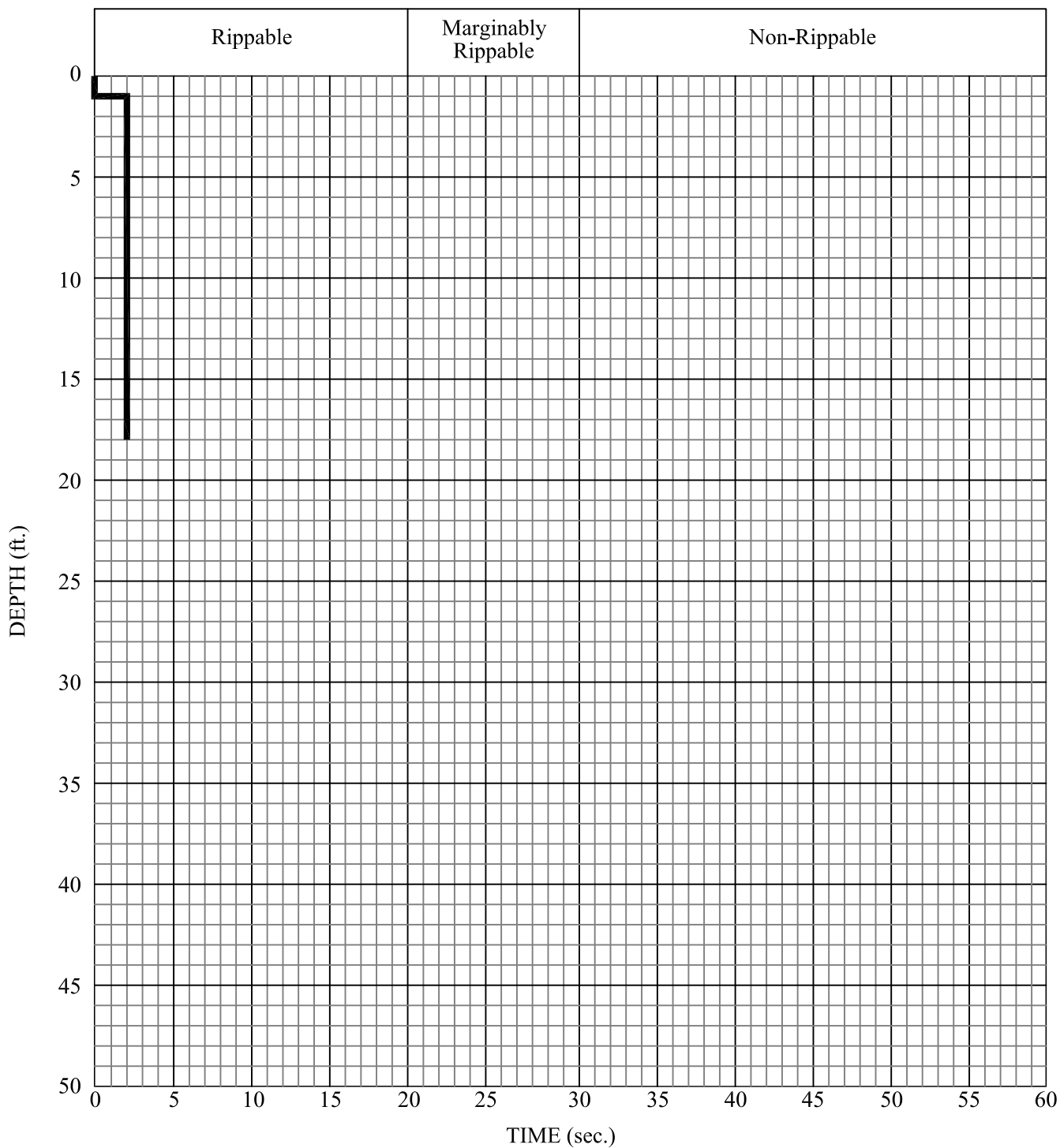
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

FIGURE  
**B8**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-8**



Date Completed: 07/20/2017

Logged By: Gibbens/Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

**Hawaii Geotechnical  
Consulting, Inc.**

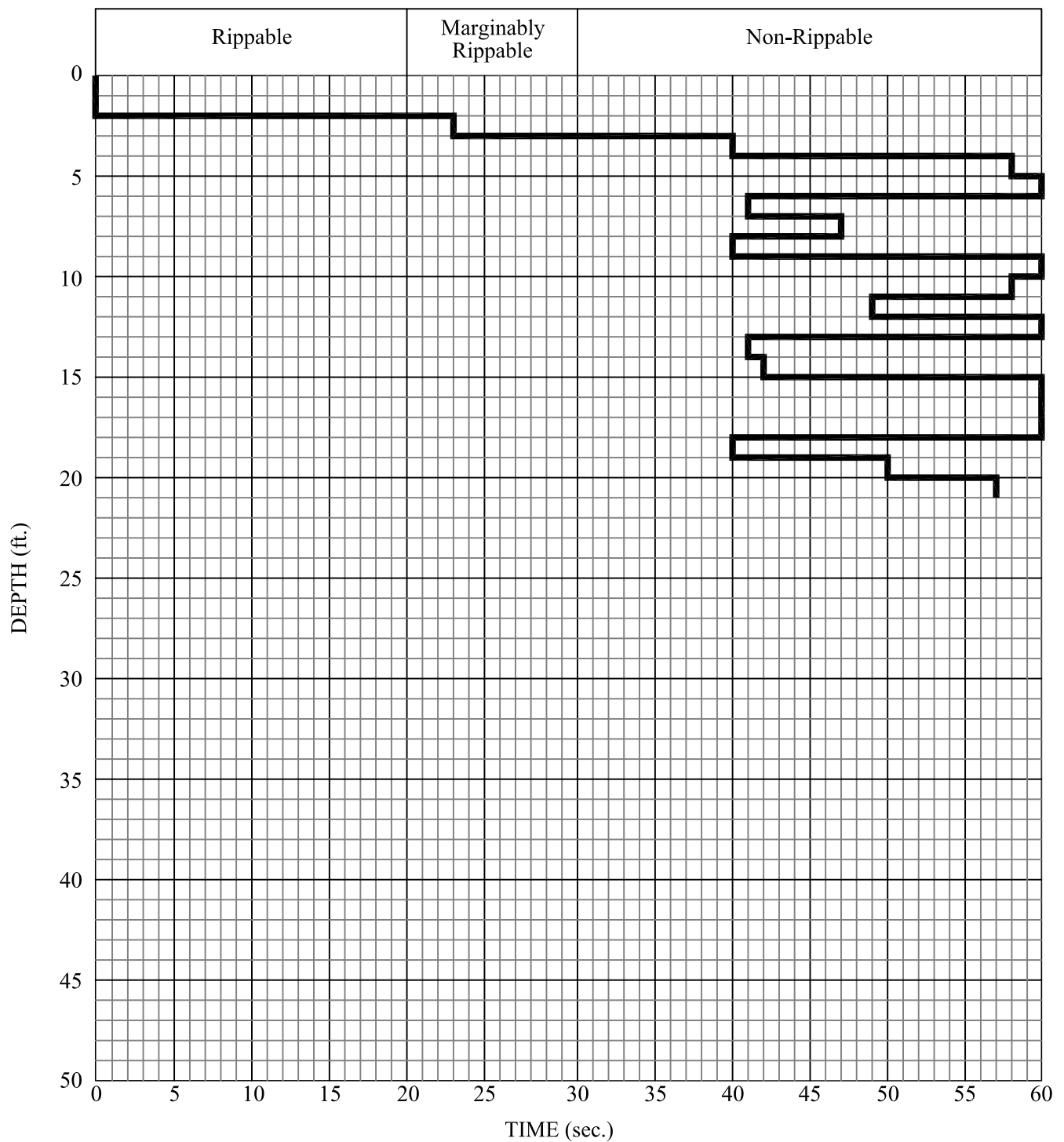
WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B9**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-9**





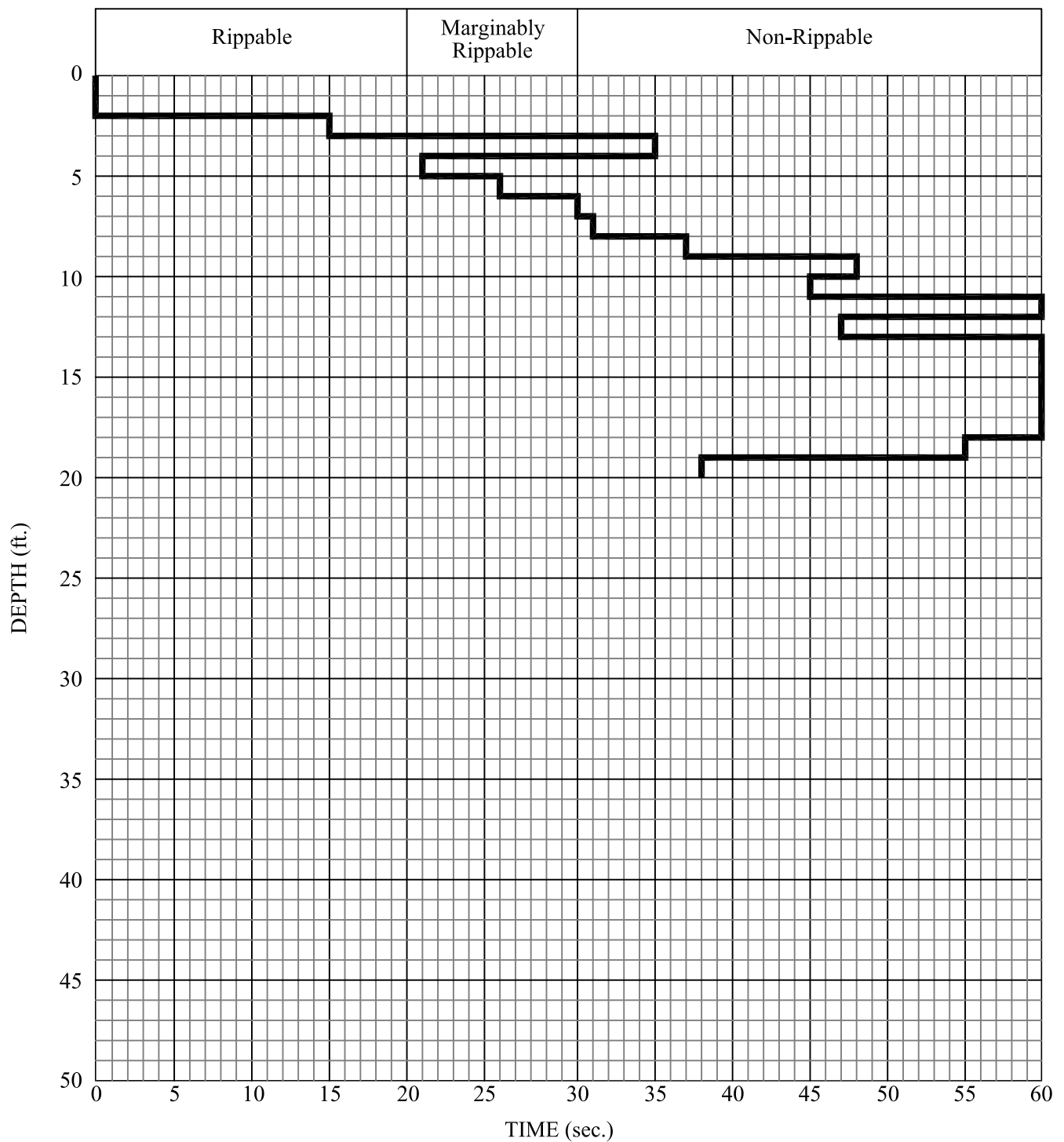
# Hawaii Geotechnical Consulting, Inc.

PROJECT NO. 17025.01  
DATE 07/23/2017

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

# LOG OF BORING RPB-10

**FIGURE**  
**B10**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

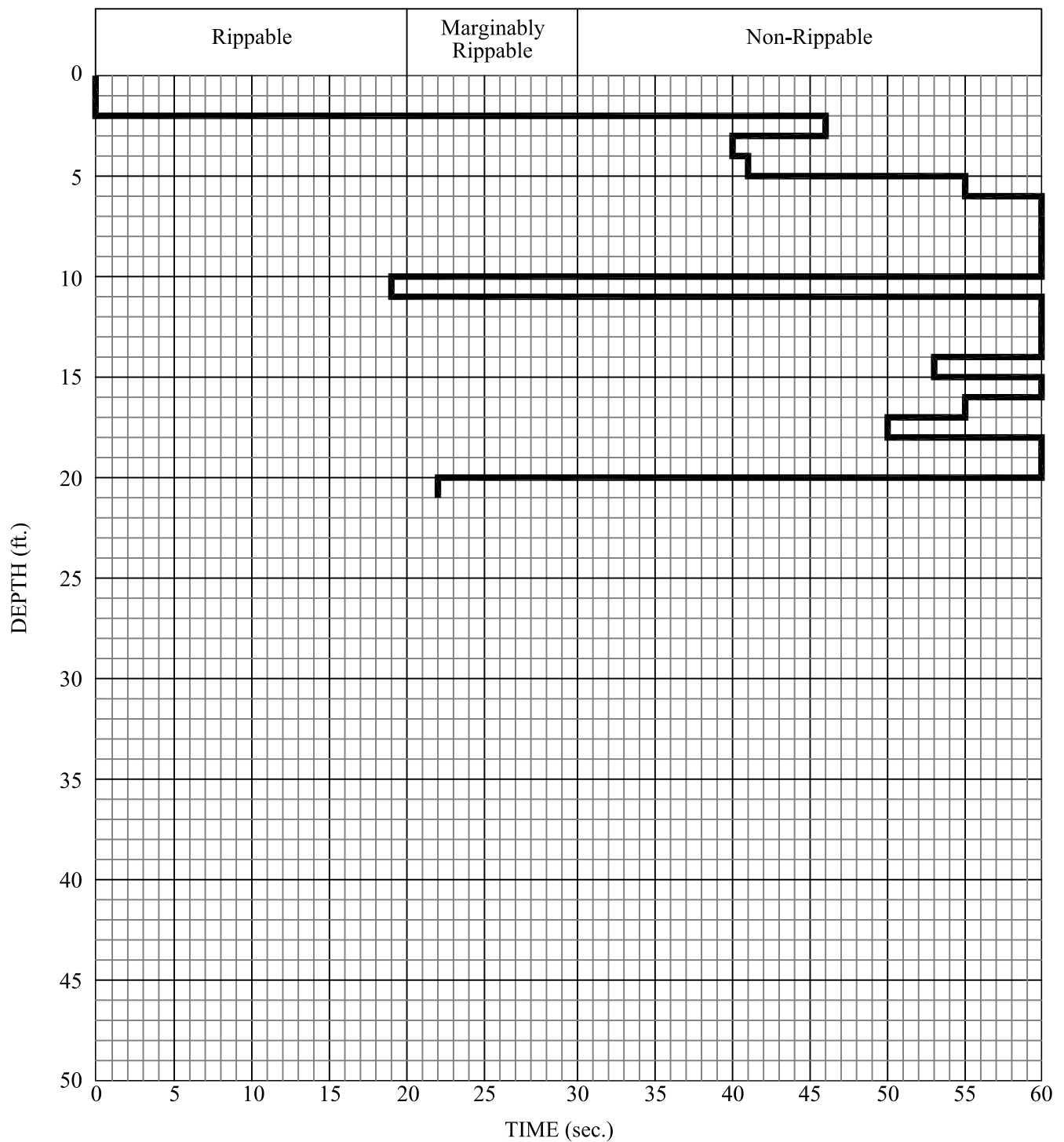
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B11**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-11**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

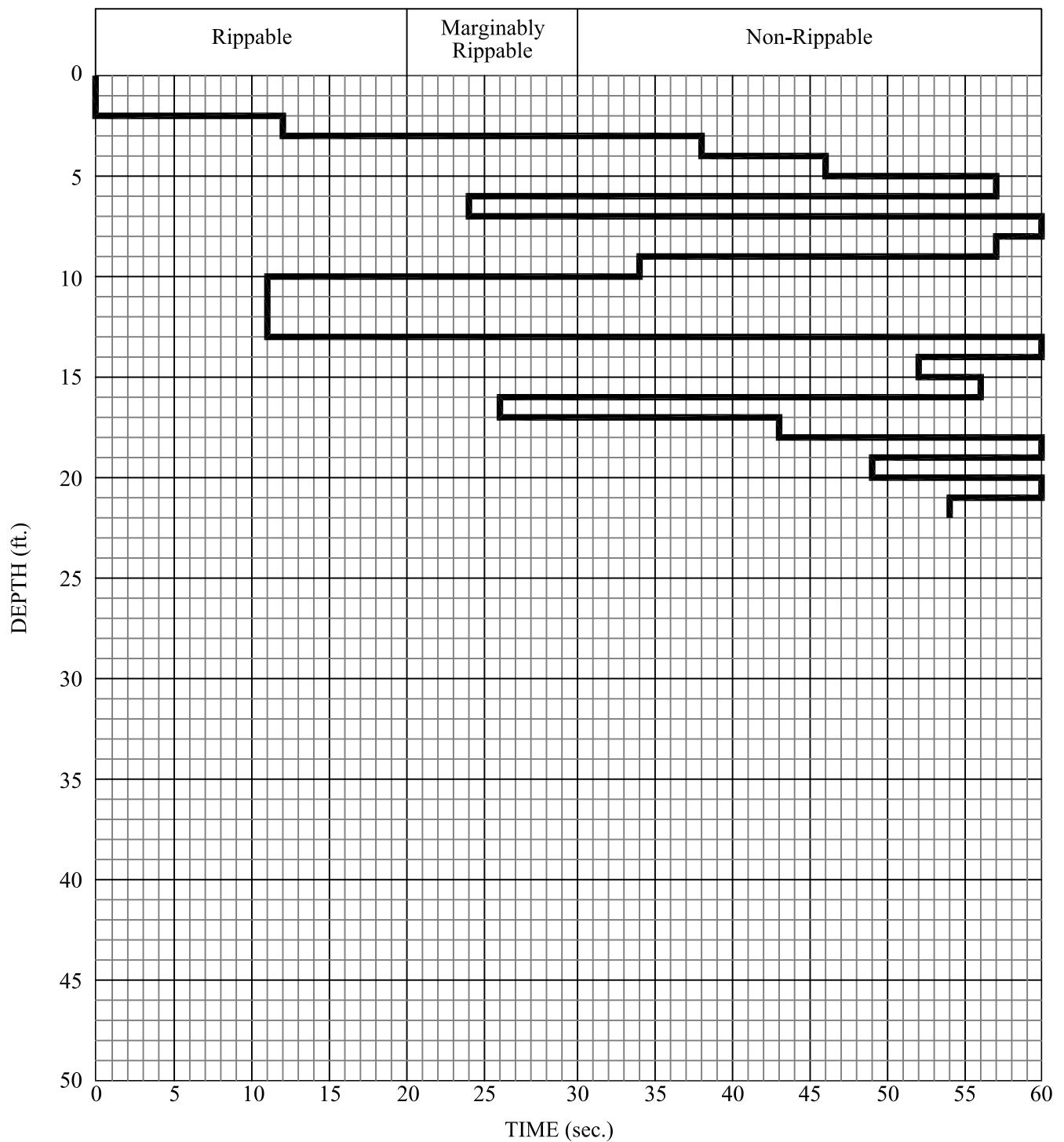
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B12**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-12**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

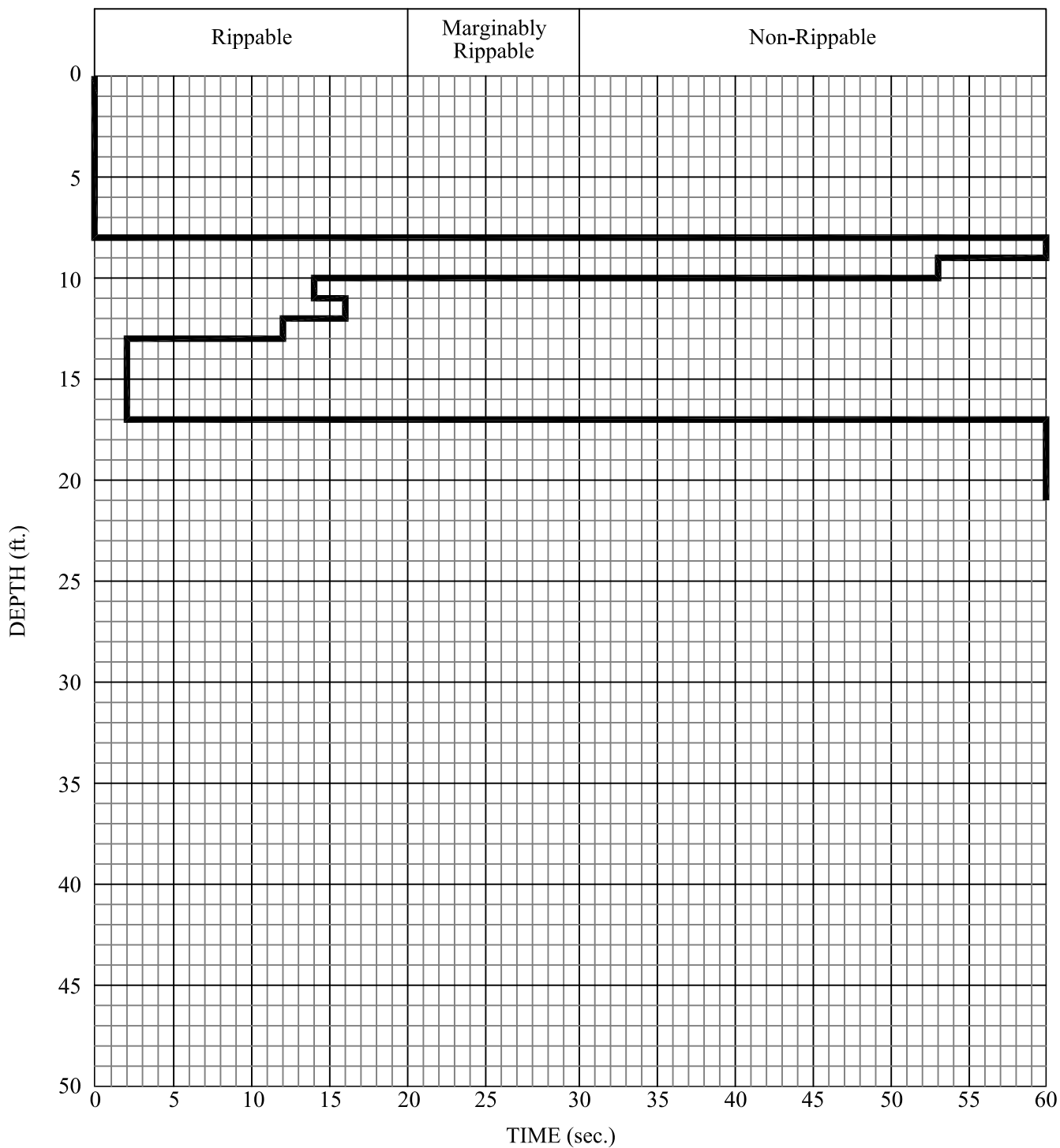
**Hawaii Geotechnical Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

FIGURE  
**B13**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-13**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

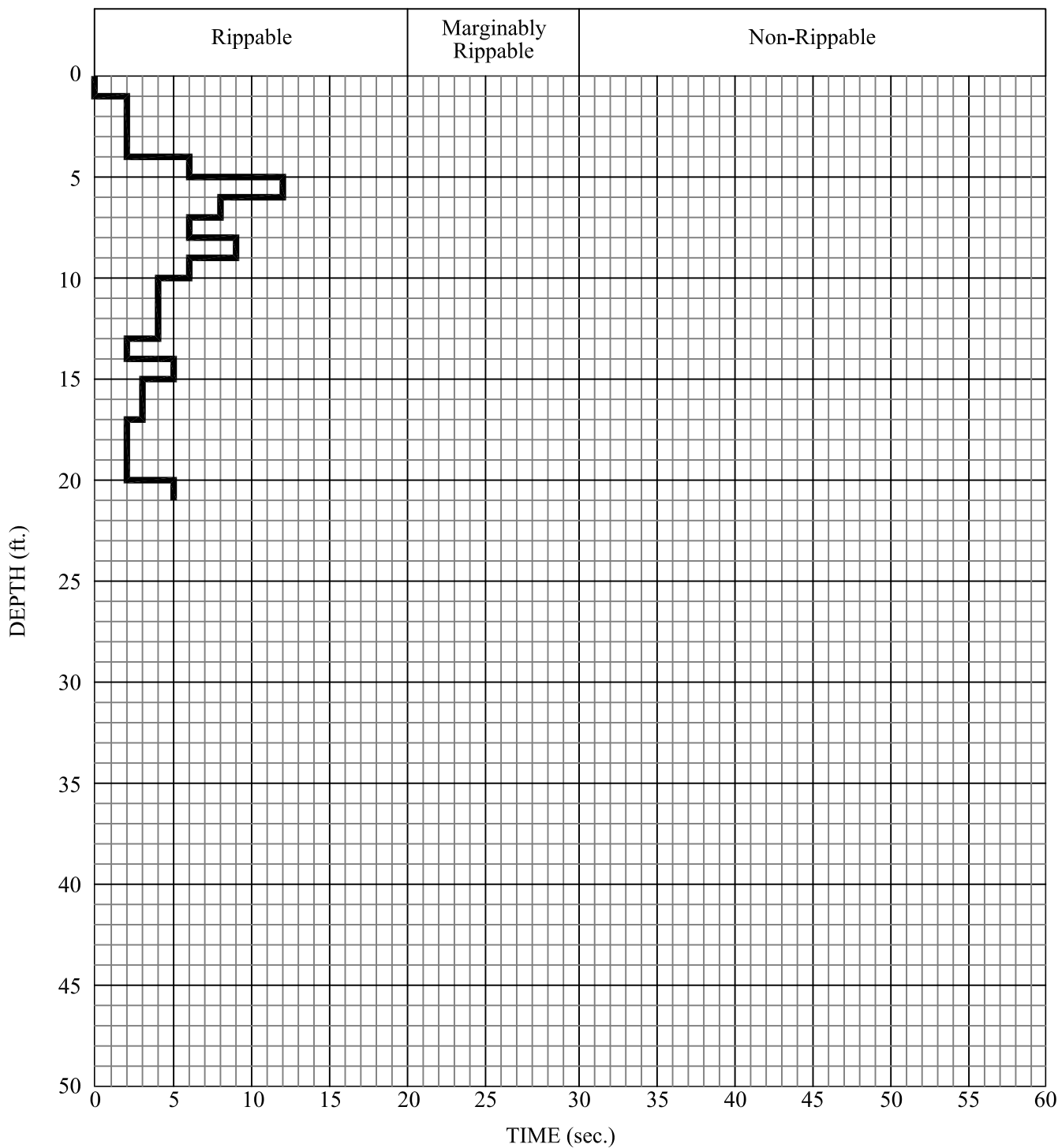
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

FIGURE  
**B14**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-14**



Date Completed: 07/20/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

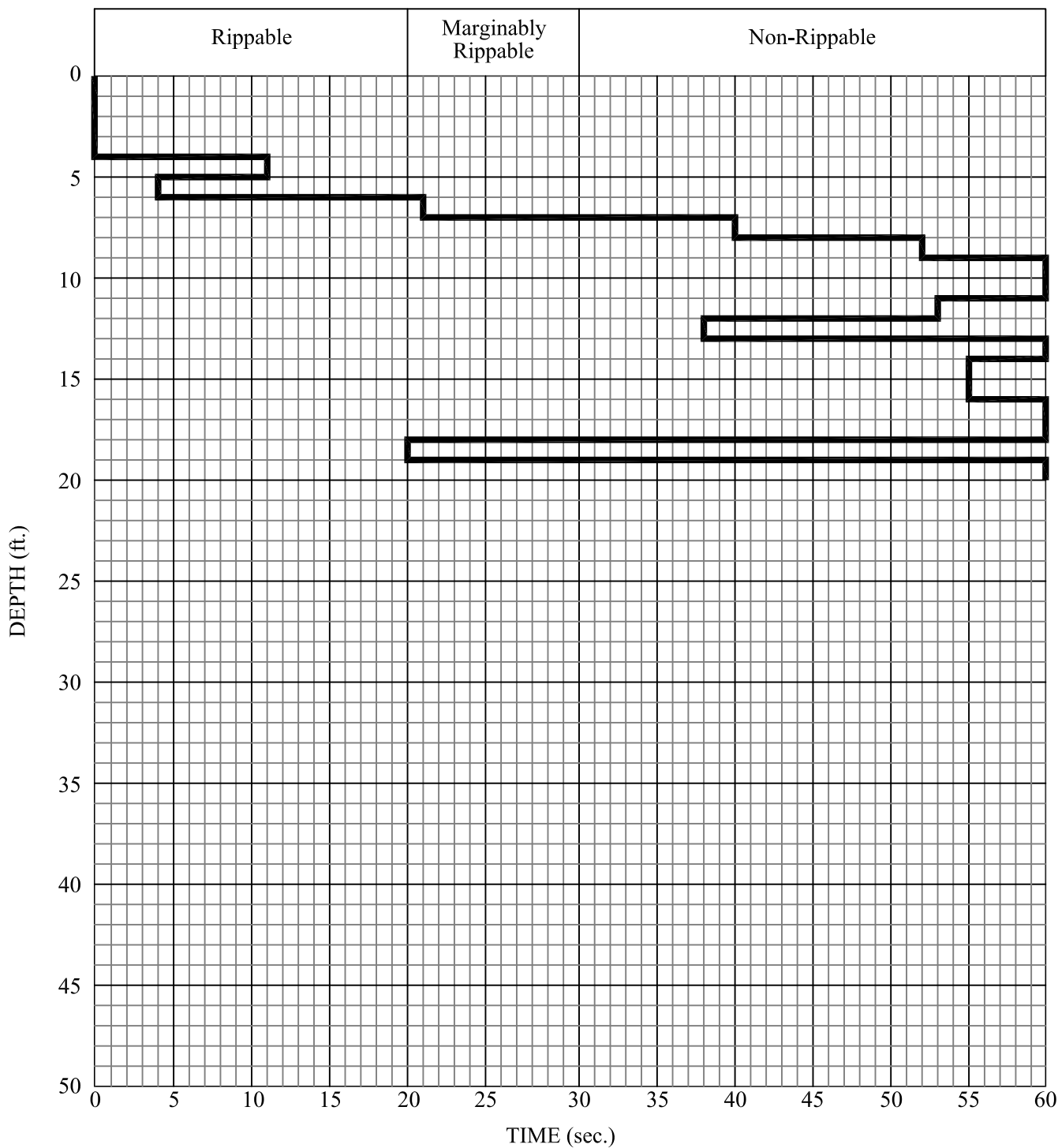
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B15**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-15**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

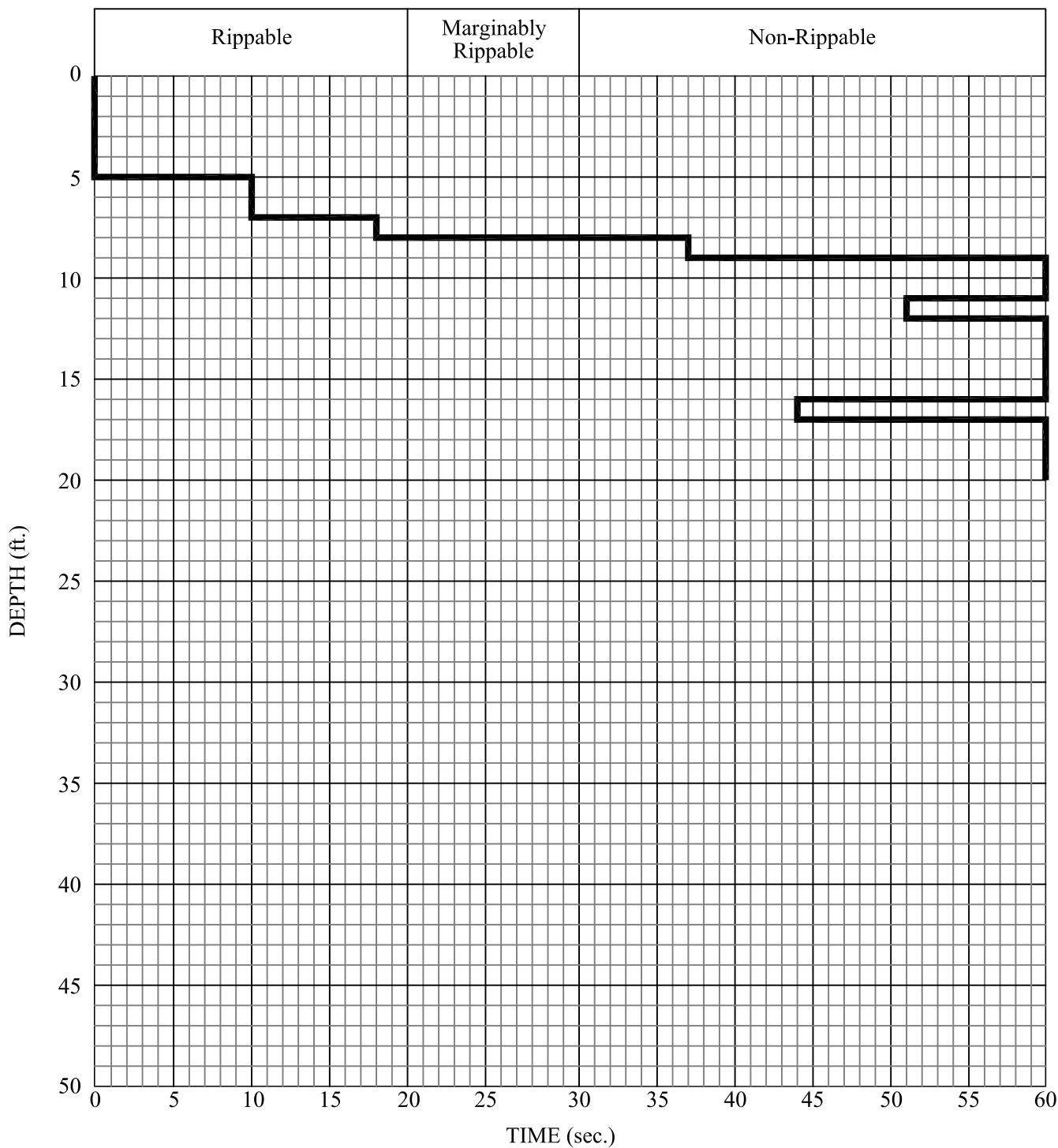
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B16**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-16**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

**Hawaii Geotechnical  
Consulting, Inc.**

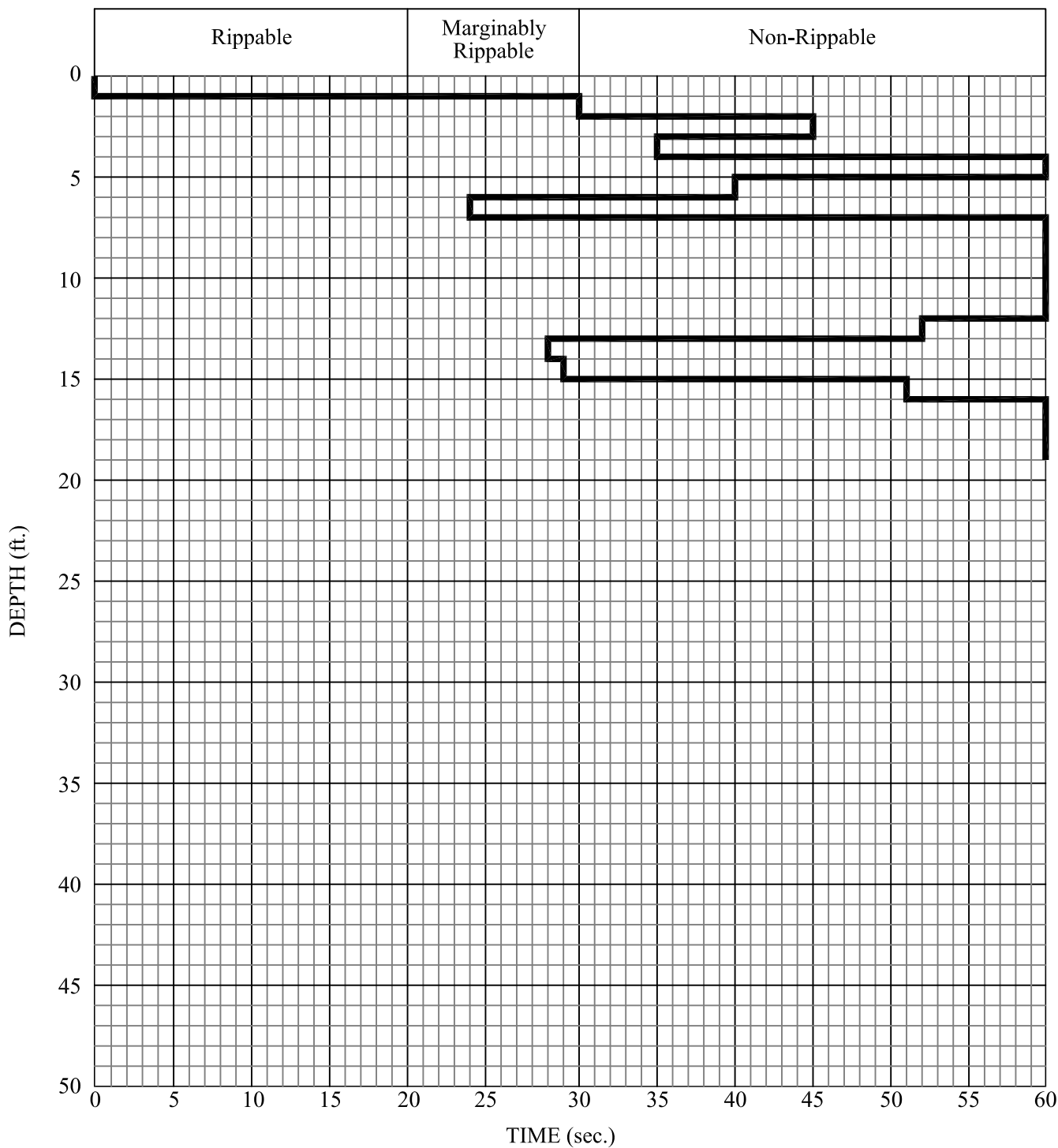
WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B17**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-17**





Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

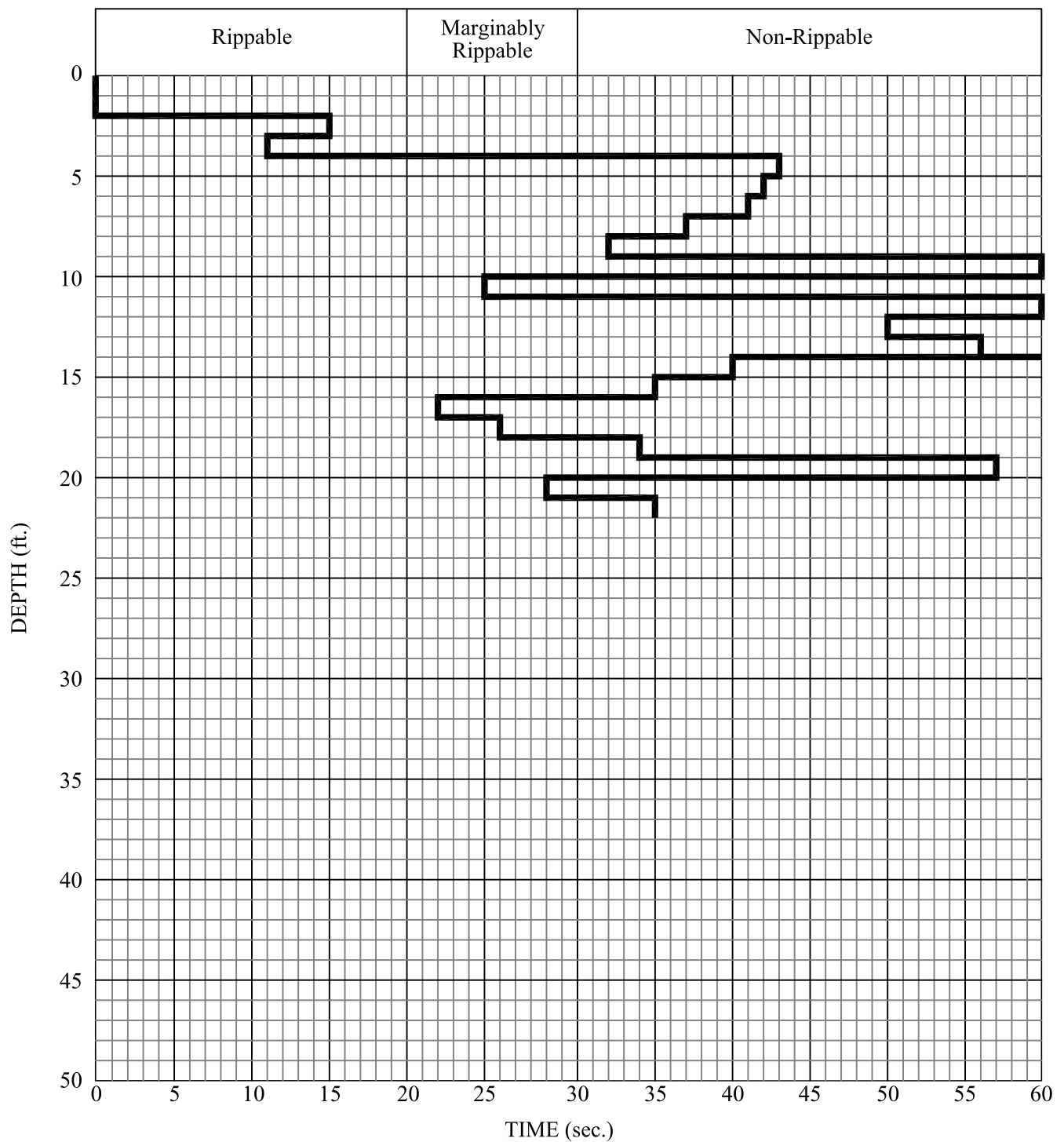
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B18**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-18**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

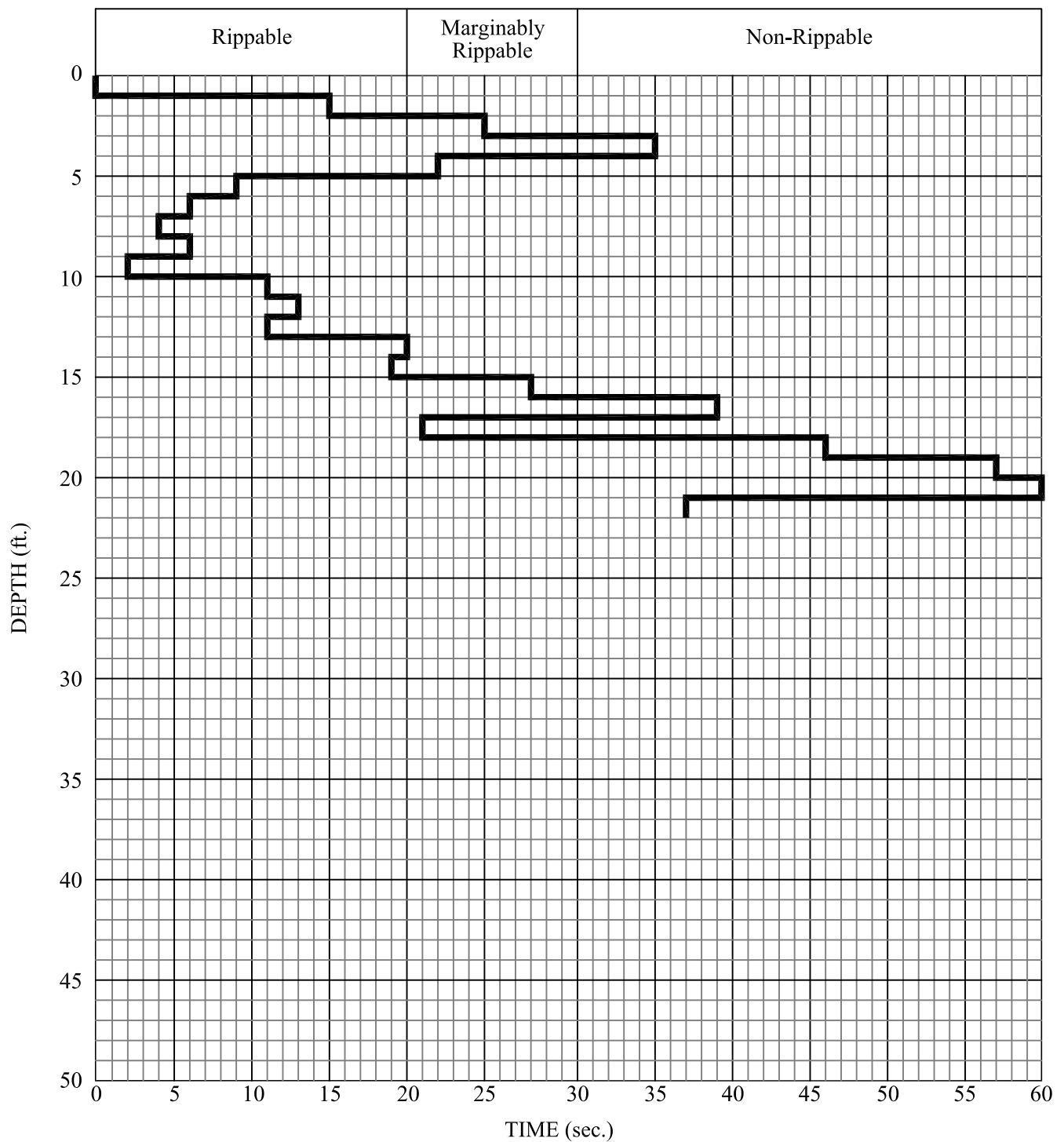
**Hawaii Geotechnical Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B19**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-19**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

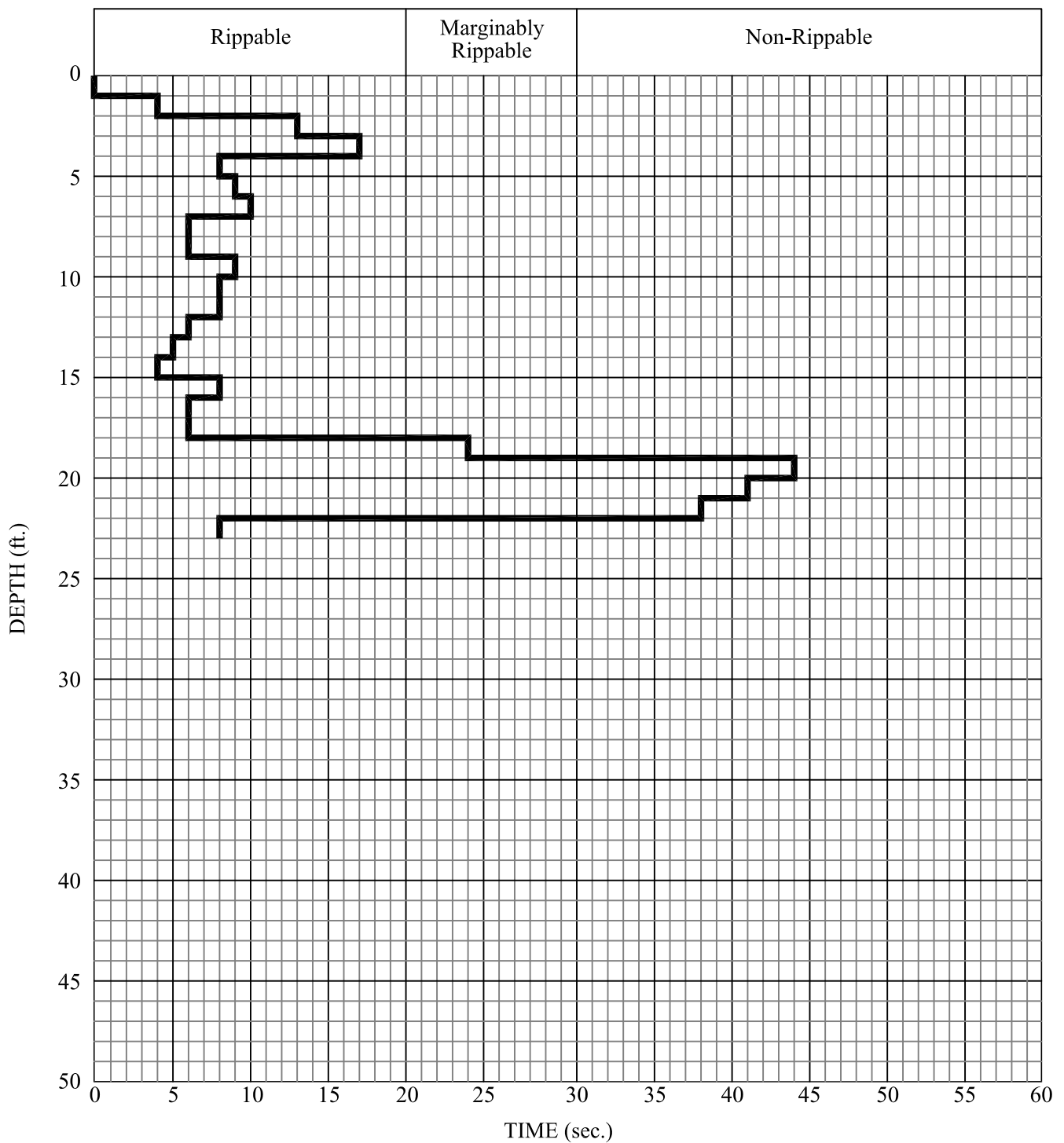
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B20**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-20**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

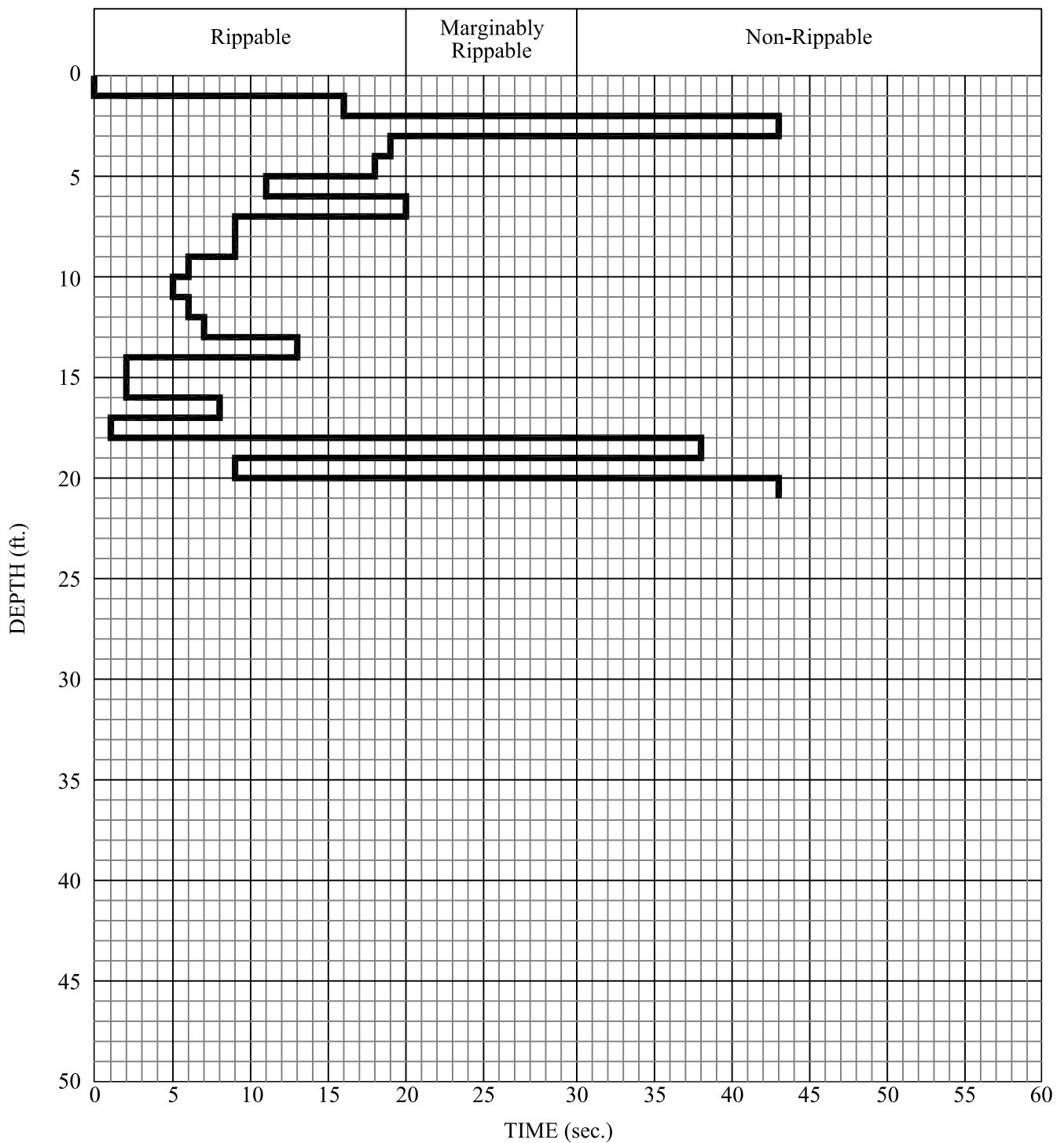
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B21**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-21**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

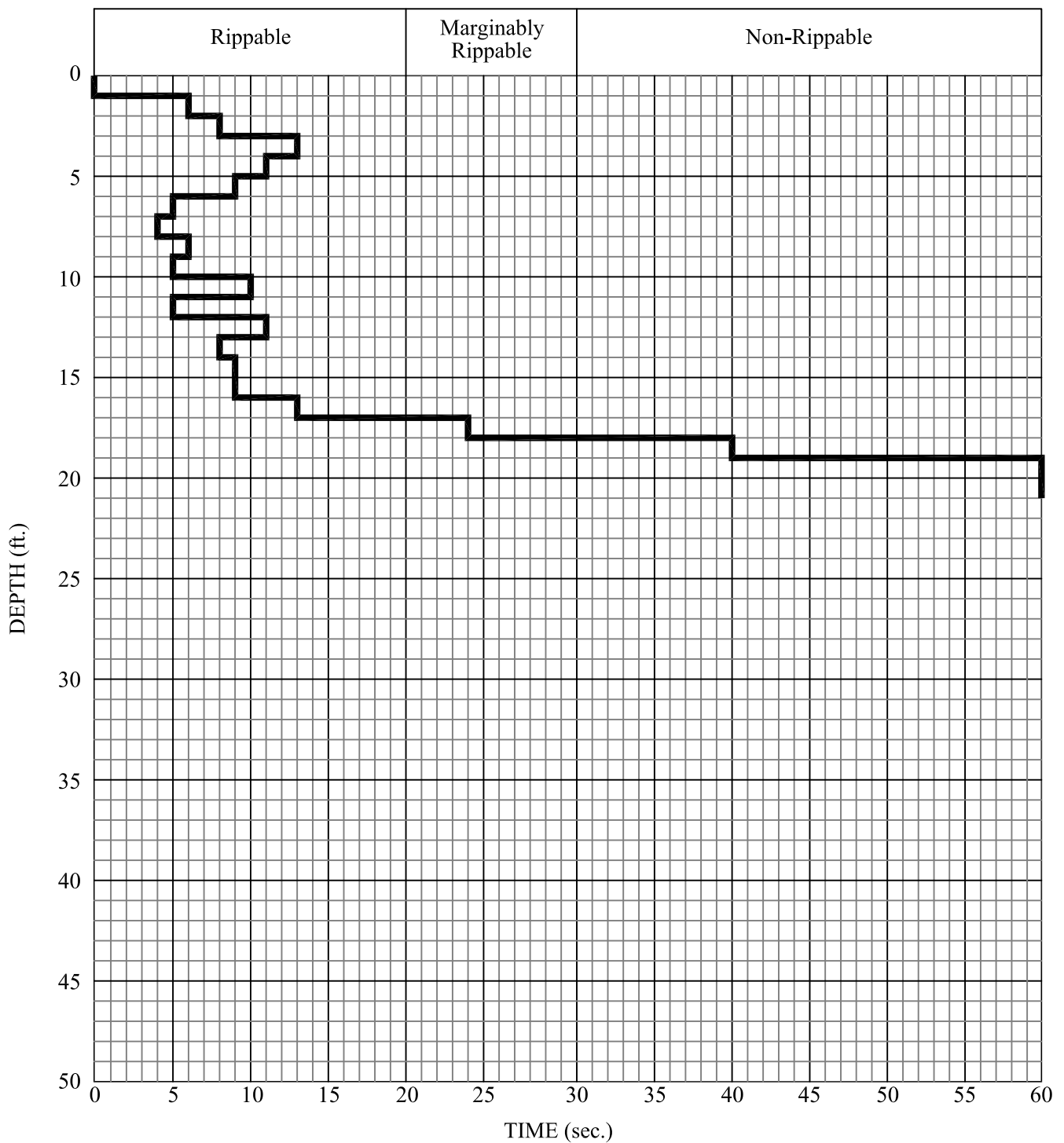
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B22**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-22**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

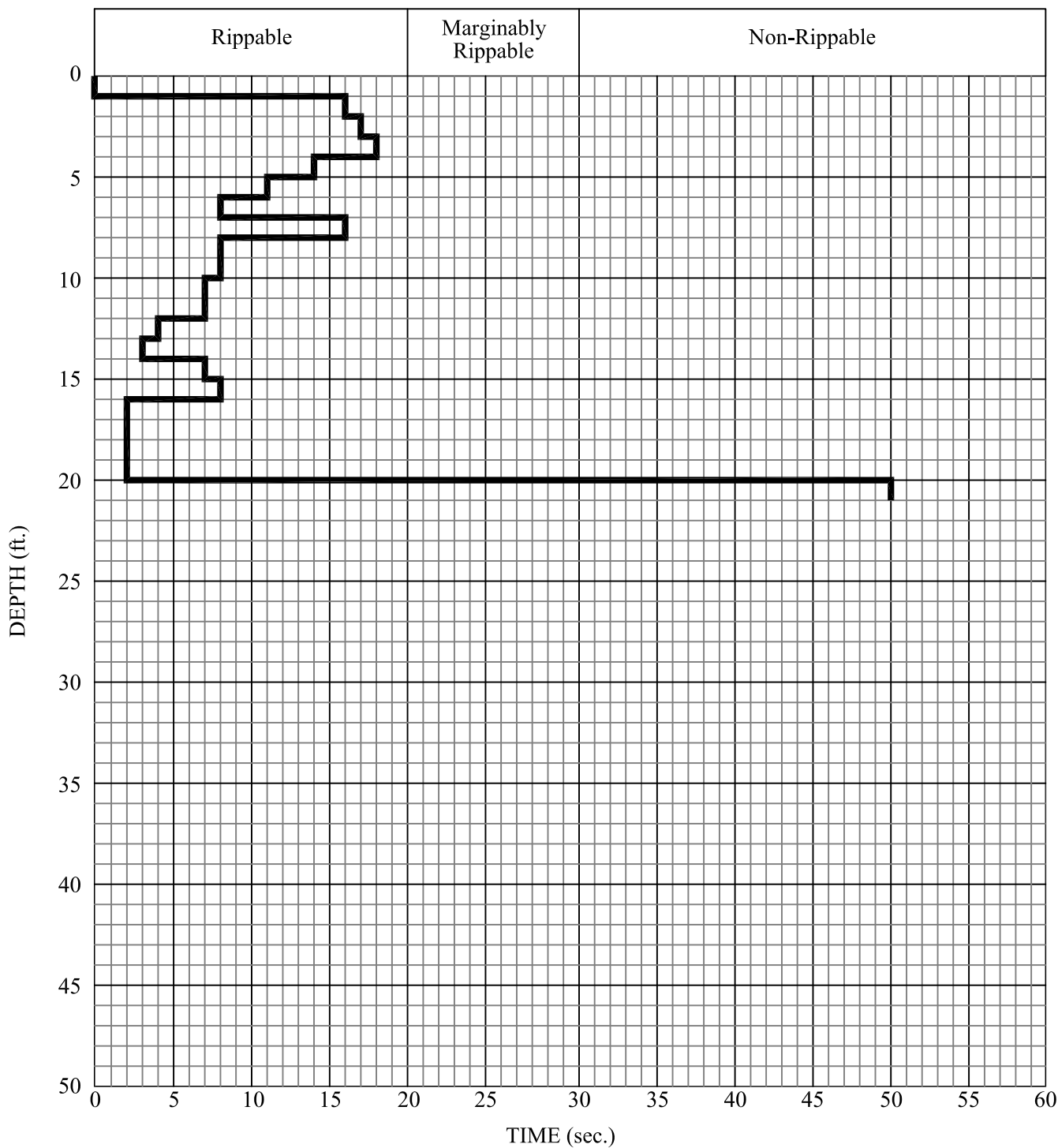
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B23**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-23**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

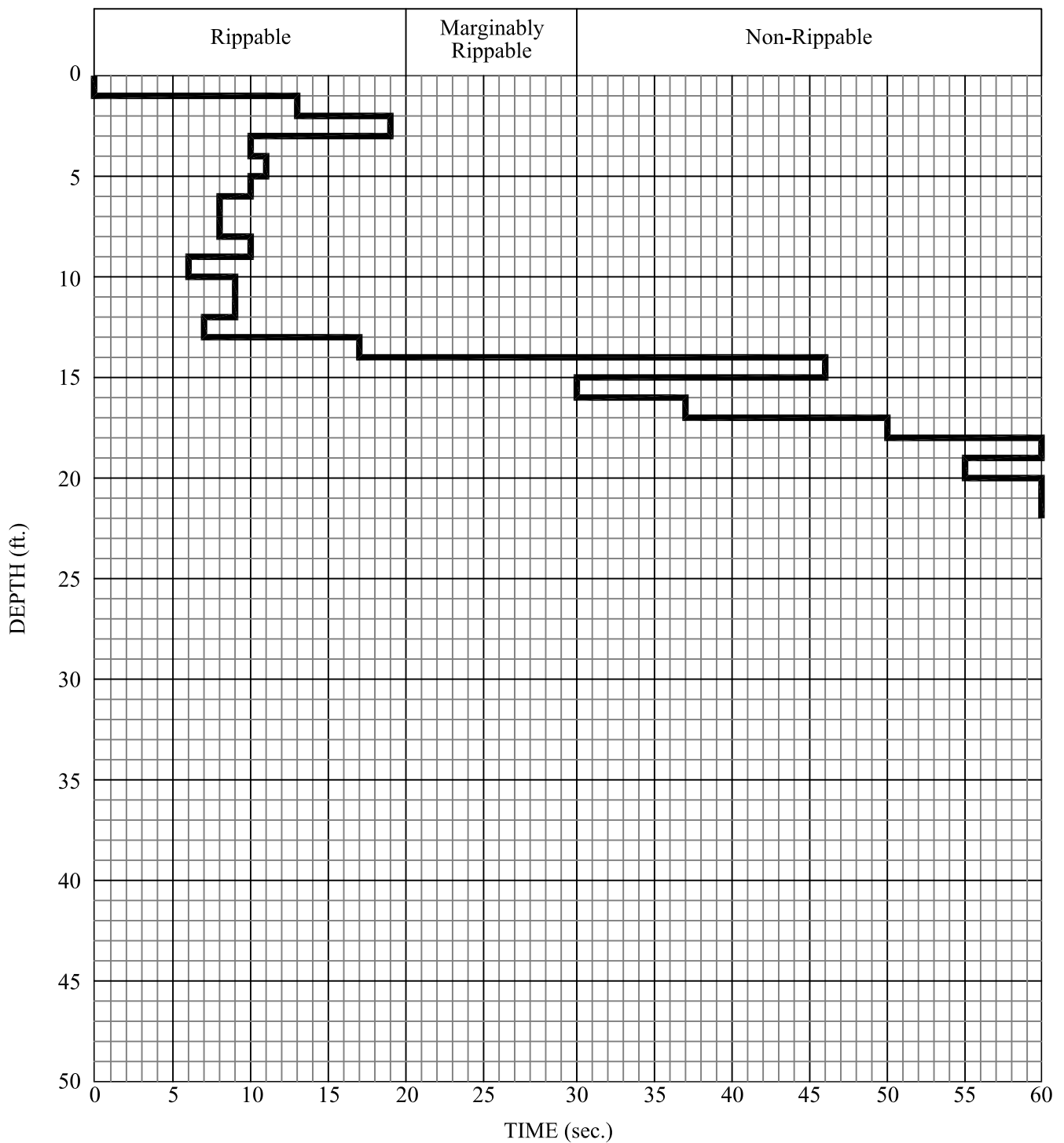
**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B24**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-24**



Date Completed: 07/21/2017

Logged By: K. Brewer

Drilled By: Blasting Technologies, Inc.

Elevation: N/A

Drilling Method: Rotary Air Percussion

**Hawaii Geotechnical  
Consulting, Inc.**

WINDWARD HOTEL  
KAHULUI, MAUI, HAWAII

**FIGURE  
B25**

PROJECT NO. 17025.01  
DATE 07/23/2017

**LOG OF BORING RPB-25**



## **Appendix 5**

### Preliminary Engineering and Drainage Report

---

# PRELIMINARY ENGINEERING AND DRAINAGE REPORT FOR THE KANAHA HOTEL AT KAHULUI AIRPORT

Kahului, Maui, Hawai'i

TMK: (2) 3-8-103: 014 (POR.), 015 (POR.), 016, 017, 018

August 6, 2021

Prepared for:

R.D. Olson Development  
520 Newport Center Drive, Suite 600  
Newport Beach, CA 92660



*Austin, Tsutsumi & Associates, Inc.*

Civil Engineers • Surveyors  
501 Sumner Street, Suite 521  
Honolulu, Hawaii 96817-5031  
Telephone: (808) 533-3646  
Facsimile: (808) 526-1267  
E-mail: [atahnl@atahawaii.com](mailto:atahnl@atahawaii.com)  
Honolulu • Wailuku, Hawaii

---

**PRELIMINARY ENGINEERING AND  
DRAINAGE REPORT  
FOR THE  
KANAHA HOTEL AT KAHULUI AIRPORT  
Kahului, Maui, Hawai'i**

Prepared for

R.D. Olson Development  
520 Newport Center Drive, Suite 600  
Newport Beach, CA 92660

Prepared by

Austin, Tsutsumi & Associates, Inc.  
Civil Engineers • Surveyors  
Honolulu • Wailuku, Hawaii

August 6, 2021

## TABLE OF CONTENTS

|  | <u>PAGE</u> |
|--|-------------|
| I. INTRODUCTION.....                         | 1           |
| II. PROPOSED PROJECT .....                   | 1           |
| A. Location.....                             | 1           |
| B. Project Description .....                 | 2           |
| C. Topography and Soil Conditions .....      | 2           |
| D. Climate and Rainfall .....                | 3           |
| E. Flood Zone .....                          | 3           |
| III. EXISTING WATER SYSTEMS .....            | 3           |
| A. Existing Water Distribution System .....  | 3           |
| B. Existing Potable Water Source.....        | 4           |
| C. Existing Non-Potable Water Source .....   | 4           |
| IV. EXISTING WASTEWATER SYSTEM .....         | 4           |
| V. EXISTING DRAINAGE SYSTEMS .....           | 5           |
| VI. EXISTING ROADWAYS .....                  | 5           |
| VII. PROPOSED WATER SYSTEM .....             | 5           |
| A. Domestic Water System.....                | 5           |
| B. Fire Suppression System .....             | 6           |
| C. Irrigation System .....                   | 7           |
| VIII. PROPOSED WASTEWATER SYSTEM .....       | 8           |
| A. Wastewater Flows .....                    | 8           |
| B. Wastewater Collection System.....         | 8           |
| C. Wastewater Treatment System .....         | 9           |
| IX. PROPOSED GRADING AND DRAINAGE PLAN ..... | 10          |
| A. Grading.....                              | 10          |

|      |                            |    |
|------|----------------------------|----|
| C.   | Drainage .....             | 10 |
| D.   | Stormwater Quality .....   | 11 |
| E.   | Erosion Control Plan ..... | 11 |
| X.   | PROPOSED ROADWAY .....     | 12 |
| XI.  | CONCLUSION .....           | 12 |
| XII. | REFERENCES.....            | 14 |

## **TABLES**

|   |  |   |
|---|--|---|
| 1 | Proposed Domestic Water Demand (Supplied by MPB PII Potable Water System).....                     | 6 |
| 2 | Proposed Irrigation Water Demand (Supplied by MPB PII Potable and Non-Potable Water Systems) ..... | 7 |
| 3 | Proposed Wastewater Contribution.....  | 8 |

## **EXHIBITS**

|    |  |
|----|--|
| 1  | VICINITY MAP                                     |
| 2  | GENERAL SITE PLAN                                |
| 3  | FLOOD MAP  |
| 4  | EXISTING OFFSITE WASTEWATER MAP                  |
| 5  | DRAINAGE AREA MAP – EXISTING CONDITIONS          |
| 6  | ONSITE WATER AND SEWER MAP                       |
| 7  | LANDSCAPE PLAN                                   |
| 8  | GENERALGRADING PLAN                              |
| 9  | DRAINAGE AREA MAP – PROPOSED CONDITIONS          |
| 10 | DRAINAGE FLOW CHART                              |
| 11 | GENERAL SITE PLAN 2 – AIRPORT ACCESS RAMP OPTION |

## **APPENDICES**

- A DRAINAGE STUDY, KANAHA HOTEL AT KAHULUI AIRPORT, PRELIMINARY  
HYDROLOGY CALCULATIONS



TERRANCE S. ARASHIRO, P.E.  
ADRIENNE W.L.H. WONG, P.E., LEED AP  
DEANNA M.R. HAYASHI, P.E.  
PAUL K. ARITA, P.E.  
ERIK S. KANESHIRO, L.P.L.S., LEED AP  
MATT K. NAKAMOTO, P.E.  
GARRETT K. TOKUOKA, P.E.

## **PRELIMINARY ENGINEERING AND DRAINAGE REPORT FOR THE KANAHA HOTEL AT KAHULUI AIRPORT**

### **I. INTRODUCTION**

The purpose of this Preliminary Engineering and Drainage Report (PEDR) is to provide an overview of the preliminary civil engineering design of the Kanaha Hotel at Kahului Airport. This report evaluates the existing site conditions and the proposed onsite grading, drainage, water, wastewater, and roadway improvements.

### **II. PROPOSED PROJECT**

#### **A. Location**

The Kanaha Hotel at Kahului Airport is located in Kahului, Maui, Hawaii within the Maui Business Park. The project site is currently undeveloped and is located at the intersection of Haleakala Highway and the Kahului Airport Access Road. The project site is bordered by an undeveloped parcel (TMK (2) 3-8-103: 014) to the south, and Lau'o Loop to the west. (See Exhibit 1, Vicinity Map.)

The project site includes five parcels, designated as Tax Map Keys (TMKs) (2) 3-8-103: 014 (Portion), 015 (Portion), 016, 017, and 018. The five parcels will be consolidated during a subdivision process to create a single 5.2-acre parcel for the Kanaha Hotel. The existing Parcel 14/15 lot line will be adjusted during the subdivision process so that Parcel 14 will be reconfigured to be 1.1 acres. (See Exhibit 2, General Site Plan.)

The 5.2-acre project site is a part of the North Project area of the Maui Business Park, Phase II (MPB PII), developed by A&B Properties, Inc (A&B).



The MBP PII also includes a separate South Project area, which is located south of Hana Highway.

## **B. Project Description**

The proposed action is to develop the 200-unit Kanaha Hotel on a 5.2-acre parcel with associated infrastructure and landscaping. The proposed hotel building will vary from one (1), two (2), and four (4) stories in height and will be massed toward the center of the project site. The project site will have generous setbacks on all sides to accommodate a landscape buffer, parking stalls and a parking lot drive aisle. Hotel amenities and uses include, but are not limited to, a swimming pool, dining area, and other typical support services and accessory uses for hotel operation. Construction is planned to begin in the fourth quarter of 2022.

Site work will include excavation and embankment of the site and construction of the hotel building pad, walkways and parking areas. The work will also include installation of service utilities including potable and irrigation water systems, fire suppression system, drainage, sewer, and electrical utilities.

Ingress and egress to the site will be provided directly off of Lau'o Loop via two driveways.

The proposed project infrastructure calculations in this report for the water, wastewater, drainage and roadway systems are based on the 5.2-acre parcel.

## **C. Topography and Soil Conditions**

The ground surface of the site is currently covered with overgrown brush and weeds, and generally slopes in a westerly direction with an average slope of approximately one percent. Onsite elevations range from 34 feet to 28.5 feet mean sea level (msl).

The soil classification found on the project site is predominately classified as Molokai Silty Clay Loam (MuB). For this series, runoff is slow to medium and





the erosion hazard is slight to moderate. Soils classifications and descriptions are taken from the United States Department of Agriculture Soil Conservation Services publication entitled, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, dated 1972.

#### **D. Climate and Rainfall**

The Kahului area is generally warm and sunny throughout most of the year. The average annual rainfall amounts to approximately 20-40 inches, with most of the rainfall occurring in the winter months. The average temperature is about 70 degrees Fahrenheit.

#### **E. Flood Zone**

The proposed project site has a flood zone classification of Zone X. Zone X is characterized as an area of minimal flooding, specifically areas determined to be outside the 0.2 percent annual chance floodplain. Flood zone classification is based on the Flood Insurance Rate Map (FIRM) number 150003 0411E, effective September 25, 2009, as prepared by the Federal Emergency Management Agency. (See Exhibit 3, Flood Map.)

### **III. EXISTING WATER SYSTEMS**

#### **A. Existing Water Distribution Systems**

The project site currently has existing water meters in place which connect to the MBP PII private dual water system. The MBP PII system, which consists of separate waterlines for potable and irrigation water, was constructed in 2011 and is owned by A&B Properties. The dual water system is currently operated by Pural Water Specialty Company Inc.

The separate waterlines for the private potable and irrigation water systems are located within the MPB PII roadways. There is an existing 12-inch potable waterline in the Lau'o Loop right-of-way which supplies water to fire hydrants and domestic water meters. An 8-inch non-potable irrigation waterline, which runs parallel to the potable waterline, supplies water to the irrigation water



meters. Each parcel within MBP PII is provided with one domestic water meter and one irrigation meter.

There is an existing 12-inch Department of Water Supply (DWS) waterline within Haleakala Highway near the project area. The waterline terminates at the intersection of Kuleana Street and Haleakala Highway. However, this waterline does not provide any water to MBP PII.

#### **B. Existing Potable Water Source**

The source water for the potable water system is two existing off-site water wells, Waiale Wells No. 1 and No. 2 (State Well Nos. 5129-04 and 5129-05), located approximately three miles to the southwest of MBP PII. Only one well operates at a time, with the other well acting as a standby. The wells pump into an adjacent 600,000-gallon storage tank. Each well is outfitted with a 450 gallon per minute (gpm) pump.

#### **C. Existing Non-potable Water Source**

The source water for the irrigation system is an on-site irrigation well system located in the MBP PII South Project area. The irrigation system consists of three irrigation well pumps, each outfitted with a 450 gpm pump.

### **IV. EXISTING WASTEWATER SYSTEM**

The Kanaha Hotel site is within the MBP PII North Project area, which is an approved County subdivision with planned wastewater flows. The sewer system is currently owned and maintained by A&B Properties and is ready to service each parcel within the subdivision. Existing sewer laterals from each lot in the North Project area connect to the existing 8-inch gravity sewer line within Lau'o Loop. The existing 8-inch gravity sewer line connects to an existing County 12-inch gravity sewer line within Haleakala Highway. The wastewater from MBP PII is ultimately conveyed to the Wailuku/Kahului Wastewater Reclamation Facility (W-K WWRF).

Wastewater generated from the MBP PII North Project area flows by gravity to the A&B Triangle Wastewater Pump Station (WWPS), which is privately-owned by A&B



Properties, Inc. The wastewater is pumped by the A&B Triangle WWPS, via a 6-inch force main, to a discharge sewer manhole in Alamaha Street, where it combines with wastewater generated by the MBP South Project area, and other lots in the vicinity. The wastewater then enters an existing 16-inch gravity sewer line and flows toward the existing Alamaha WWPS, where it is pumped to the Kahului Pump Station and then to the W-K WWRF. (See Exhibit 4, Existing Offsite Wastewater Map.)

## **V. EXISTING DRAINAGE SYSTEMS**

Storm water runoff generated from the project site generally flows in a westerly direction and is collected in a catch basin located within Lau'o Loop. The existing runoff is ultimately discharged to the existing A&B 30-foot-wide concrete channel located about 1,300 feet west of the project site near Costco.

Pre-development onsite runoff is estimated to be approximately 6.88 cubic feet per second (cfs), based on the 50-year recurrence interval storm. (See Appendix A for preliminary Drainage calculations and Exhibit 5, Drainage Area Map – Existing Conditions, for existing drainage information).

## **VI. EXISTING ROADWAYS**

Lau'o Loop fronting the site is a 40-foot-wide asphalt concrete (a.c.) paved two-lane road with curbs, gutters and sidewalks on both sides of the street with a right-of-way width of 60 feet. The current posted speed limit for Lau'o Loop is 25 miles per hour.

The portion of Haleakala Highway at the Kuleana Street/Lau'o Loop intersection is an asphalt concrete (a.c.) paved two-lane road and has a right-of-way width of 60 feet. It borders the project site to the north and the current speed limit for Haleakala Highway is 25 miles per hour.

## **VII. PROPOSED WATER SYSTEM**

### **A. Domestic Water System**

The project will use potable water provided from the MPB PII potable water system. Previous studies prepared by Tom Nance Water Resource



Engineering estimated that the domestic water demand for the hotel will be 150 gallons per day (gpd) per unit. This estimate was based on actual water use at two hotels that were considered to be representative of what the Kanaha Hotel will use. Table 1 shows the estimated domestic water demand.

**Table 1 - Proposed Domestic Water Demand  
(Supplied by MPB PII Potable Water System)**

| Description  | Quantity   | Units | Average<br>Day<br>Demand | Unit     | Total Average<br>Day Demand<br>(gpd) |
|--------------|------------|-------|--------------------------|----------|--------------------------------------|
| Hotel Rooms  | 200        | units | 150                      | gpd/unit | 30,000                               |
|              |            |       |                          |          |                                      |
| <b>Total</b> | <b>200</b> |       |                          |          | <b>30,000</b>                        |

Reference: Memorandum by Tom Nance Water Resource Engineering dated April 2021

The project's onsite water distribution systems will be designed and constructed to provide water for domestic consumption, fire protection and irrigation. (See Exhibit 6, Onsite Water and Sewer Map.)

The Kanaha Hotel developer is working with A&B Properties to drill a third potable water well, in the vicinity of the two existing Waiale Wells, to provide an additional source of water for MPB PII and the hotel.

## **B. Fire Suppression System**

The required fire flow for the project site, based on zoning, is 2,500 gallons per minute (gpm) for a duration of 2 hours. To fulfill the project's fire protection requirements, an onsite fire protection system will be constructed. A proposed fire line will supply water for fire protection, and a double check detector assembly will be installed on the fire line at the connection to the MBP PII potable water system. The onsite fire system will have new fire hydrants spaced at a maximum of 250-intervals within the site where required.

It should be noted that an onsite water storage tank and fire line booster pump for fire protection service may be required to provide adequate flow and pressure to meet fire flow requirements. Final fire flow and pressure



requirements will be determined during the permit application review process through the County of Maui and may be different than the previously discussed requirement of 2,500 gpm for a duration of 2 hours. Requirements and design for the onsite water storage tank and fire line booster pump for fire protection service have not been finalized at this time.

In addition to the MPB PII water system, the County of Maui, Department of Water Supply's water system can provide off-site fire protection at existing fire hydrants located in the right-of-way near the project site.

### C. Irrigation System

The irrigation demand for the project site is expected to be supplied by both the MPB PII non-potable and potable water systems, with the majority of the water being supplied by the non-potable system. The non-potable water will be supplied by a dedicated non-potable water connection with a meter. The utilization of non-potable water will be prioritized for irrigation purposes and the use of potable water will only be utilized where required by specific flora. (See Exhibit 7, Landscape Plan.) Estimated irrigation water demands for the project are shown in Table 2.

**Table 2 - Proposed Irrigation Water Demand  
(Supplied by MBP PII Potable and Non-Potable Systems)**

| Description                | Irrigated Area | Units | Total Irrigation Demand (gpd) |
|----------------------------|----------------|-------|-------------------------------|
| Private Potable System     | 0.44           | acres | 1,287                         |
| Private Non-Potable System | 0.96           | acres | 2,653                         |
|                            |                |       |                               |
| <b>Total</b>               | <b>1.40</b>    |       | <b>3,940</b>                  |

Reference: Irrigation estimates provided by Chris Hart & Partners



## VIII. PROPOSED WASTEWATER SYSTEM

### A. Wastewater Flows

The average day wastewater flow estimated for the proposed project is directly related to the amount of domestic water being consumed. The domestic water demand for the hotel, which is based on actual water use at existing similar hotels, is 150 gpd/unit. Typically, wastewater flows are on the order of 80 percent to 90 percent of the water use. To be conservative, the wastewater flow for the hotel is estimated to be 100 percent of the water demand, which would be 150 gpd/unit for the project.

This wastewater flow of 150 gpd/unit is less than the County of Maui, Department of Environmental Management, Wastewater Flow Standards for Hotel use, which is 250 gpd/unit. However, the County's wastewater flow of 250 gpd/unit is considered to be too high. Therefore, the proposed wastewater flow of 150 gpd/unit is considered to be more realistic. Table 3 shows the approximate wastewater flows expected for the proposed project.

**Table 3 - Proposed Wastewater Contribution**

| Description  | Quantity   | Units | Average Day Contribution |          | Total Wastewater Contribution (gpd) |
|--------------|------------|-------|--------------------------|----------|-------------------------------------|
| Hotel Rooms  | 200        | units | 150                      | gpd/unit | 30,000                              |
|              |            |       |                          |          |                                     |
| <b>Total</b> | <b>200</b> |       |                          |          | <b>30,000</b>                       |

### B. Wastewater Collection System

The proposed wastewater flow generated from the project will be collected by a new onsite sewer system which will connect to one of the four existing sewer laterals that serve the project site. The existing sewer laterals connect to the existing 8-inch gravity sewer line within Lau'o Loop that was constructed during the development of the MBP PII North Project area. A new sewer manhole will be constructed on the project site to connect the new sewer



lateral to the existing sewer lateral, as required by the County of Maui, Department of Environmental Management requirements. (Refer to Exhibit 6.)

It is anticipated that improvements to the A&B Triangle Square Wastewater Pump Station (WWPS) located at 417 Kele Street in Kahului, TMK No. (2) 3-8-079: 004 and the Alamaha WWPS, TMK No. (2) 3-7-012:027 may be required because of the proposed action. Other wastewater infrastructure improvements, e.g., upgrading a short segment of a gravity sewer line, may also be required. The potential improvements are in the process of being defined with appropriate State and County Agencies.

The design of the onsite and offsite sewer system improvements will be determined during the design phase of the project.

### **C. Wastewater Treatment System**

The wastewater generated by the Kanaha Hotel will ultimately be conveyed to the County's W-K WWRF for treatment. The Maui County Code, *Section 20.28.040 – Wastewater treatment facility expansion – Allocation of capacity*, states how the expansion capacity of the W-K WWRF will be allocated for new developments. The code notes that 70,000 gpd will be allocated to new hotels, which will be allocated on a first come, first serve basis. At this time, none of the 70,000 gpd has been allocated to new hotels. Therefore, the proposed estimated wastewater flow of 30,000 gpd from the Kanaha Hotel is significantly less than the available allocated capacity of 70,000 gpd.

The primary means of effluent disposal from the W-K WWRF is by injection wells. It is acknowledged that the County of Maui is currently addressing the use of injection wells at the Lahaina Wastewater Reclamation Facility, which does not service the subject Project. The County may revise their systems island-wide to accommodate future regulations regarding injection well use; however, there are currently no restrictions on the Kanaha Hotel's planned flows to the W-K WWRF.



## **IX. PROPOSED DRAINAGE AND GRADING PLAN**

### **A. Grading**

The project will require both excavation and embankment for the construction of the new parking areas and proposed building pad. The grading will be designed to balance “cuts” and “fills” to the greatest extent feasible in order to accommodate drainage and service utilities, and also to minimize the import and/or export of earthwork materials. Finish grades throughout the site will vary in elevation from 28 feet to 34 feet mean sea level (msl), and slopes will vary between 0 to 5 percent after improvements, with a maximum of 2:1 grade used along the embankments. (See Exhibit 8, General Grading Plan.)

### **B. Drainage**

The Rational Method is used to determine stormwater runoff quantities for drainage areas less than 100 acres, which is applicable to this project. (See Exhibit 9, Drainage Area Map – Proposed Conditions.) The proposed onsite drainage system will be designed to manage the 50-year, 1-hour storm runoff from onsite drainage areas. Post-development onsite runoff was calculated to approximately 17.8 cfs, which is an increase of 10.92 cfs over existing conditions. (Refer to Appendix A.)

County standards require that the increase in runoff be retained, however, since this project is located within the MBP PII development, retention for the increases in runoff throughout the entire MBP PII development have already been accounted for by the existing drainage system. The runoff retained in other areas of the MBP PII project more than offsets the increase in runoff produced by the subject project area.

Runoff generated by the project site will discharge to the Lau’o Loop drainage system and then to the A&B ditch, as does the existing runoff. Stormwater produced by the project will be treated for storm water quality based on Maui County requirements. (See Exhibit 10, Drainage Flow Chart.) The





master drainage report for Maui Business Park – Phase II provides more details on the overall MBP PII drainage system.

The proposed onsite drainage system improvements will include concrete curbs and gutters, catch basins, manholes, underground drain lines, and storm water quality treatment systems.

#### **C. Stormwater Quality**

The proposed stormwater management system will provide water quality treatment and/or natural Low Impact Development (LID) features such as vegetative swales to reduce the discharge of pollutants to the maximum extent practicable. Underground stormwater treatment devices or chambers may also be implemented to fulfill the stormwater quality requirements. Other LID strategies that may be implemented is to minimize parking, to be within parking code limits and sidewalk reduction as sidewalks around the perimeter of the project site already exist.

An appropriate maintenance plan will be developed for each stormwater quality feature where accumulated debris and sediments will be removed during regularly scheduled maintenance and disposed at a County approved disposal site to ensure appropriate storm water quality is achieved.

#### **D. Erosion Control Plan**

Temporary erosion control measures will be incorporated during construction to minimize soil loss and erosion hazards. Best Management Practices will include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, inlet protection, slope protection, stabilized construction entrances and truck wash-down areas. Periodic water spraying of loose soils will be implemented to minimize air-borne dirt particles from reaching adjacent properties. An application for a National Pollution Discharge Elimination System (NPDES) permit for construction activities will be submitted to the State Department of Health for approval prior to start of construction.



Permanent sediment control measures will be used once construction is completed. These practices are described in the previous “Stormwater Quality” section.

## **X. PROPOSED ROADWAY**

As previously mentioned, the project’s ingress and egress will be from Lau’o Loop. From this entrance of the hotel, the internal roadway will connect to a drop off for hotel guests and then continue on to provide access to the hotel’s parking lot. The aisle widths for these parking areas will be 24-feet wide and will also provide access for the hotel’s services and fire access.

The State of Hawaii, Department of Transportation is also currently in discussion with Maui Business Park, LLC to acquire a portion of the property, in particular, the northeast corner of the site to be used for an access ramp which will connect Haleakala Highway to the Kahului Airport Access Road. This access ramp and any affiliated drainage utilities will be constructed separately from the proposed hotel and by Maui Business Park, LLC or the State of Hawaii, Department of Transportation. The terms and timing of the parcel subdivision for the proposed access ramp will be coordinated with the State, Maui Business Park, LLC and the landowner at the appropriate time. This timing would be coordinated with the close of escrow of sale to the State of Hawaii, Department of Transportation. (See Exhibit 11, General Site Plan 2 Airport Access Ramp Option.)

## **XI. CONCLUSION**

The potable and non-potable water distribution systems will be able to supply the estimated water demands to the hotel property. The developer is working with A&B Properties to drill a third potable water well, in the vicinity of the two existing Waiale Wells, to provide an additional source of water for MPB PII. The existing non-potable water system is adequate to supply irrigation water to the Kanaha hotel.

The existing onsite wastewater system is expected to be able to handle the wastewater flows generated by the hotel. The capacity of the onsite wastewater system



will be determined during the engineering design of the project. The developer is working with the County to determine if improvements to the County's existing offsite wastewater collection system, including existing WWPSs, will be required. The W-K WWRF is expected to have enough capacity to accommodate the wastewater flows from the Kahana Hotel.

The proposed grading and drainage design for this project will impose no adverse effects from storm runoff to adjacent and downstream areas. Soil loss will be minimized during the construction period by implementing appropriate erosion control measures. The proposed stormwater management system will provide water quality treatment and reduce the discharge of pollutants to the maximum extent practicable. All drainage improvements will conform to the Maui County Standards.

The proposed improvements for this project will be designed in accordance with the applicable rules and regulations of the County of Maui. Based on the preceding information, the project is expected to have no adverse effects on existing facilities or the surrounding environment.



## XII. REFERENCES:

1. Department of Public Works & Waste Management, County of Maui, Chap.4, *Rules for the Design of Storm Drainage Facilities in the County of Maui*, November 1995.
2. Department of Public Works & Waste Management, County of Maui. (November 9, 2012). *Rules for the Design of Storm Water Treatment Best Management Practices*, Title MC-15, Subtitle 01, Chapter 111.
3. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed 03/24/2014.
4. USDA, Soil Conservation Service in Cooperation with the University of Hawaii Agricultural Experiment Station. (August 1972). *Soil Survey of Island of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*.
5. Federal Emergency Management Agency. (September 19, 2012). *Flood and Insurance Rate Map, Maui County, Hawaii*. Map Number 1500030351F.
6. County of Maui, Wastewater Reclamation Division, Wastewater Flow Standards, February 2, 2006.
7. Memorandum from Tom Nance Water Resource Engineering, May 17, 2019.
8. Irrigation demand calculations provided by Chris Hart and Partners.

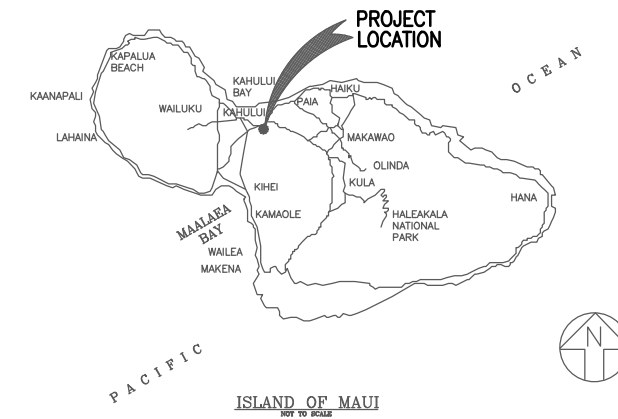
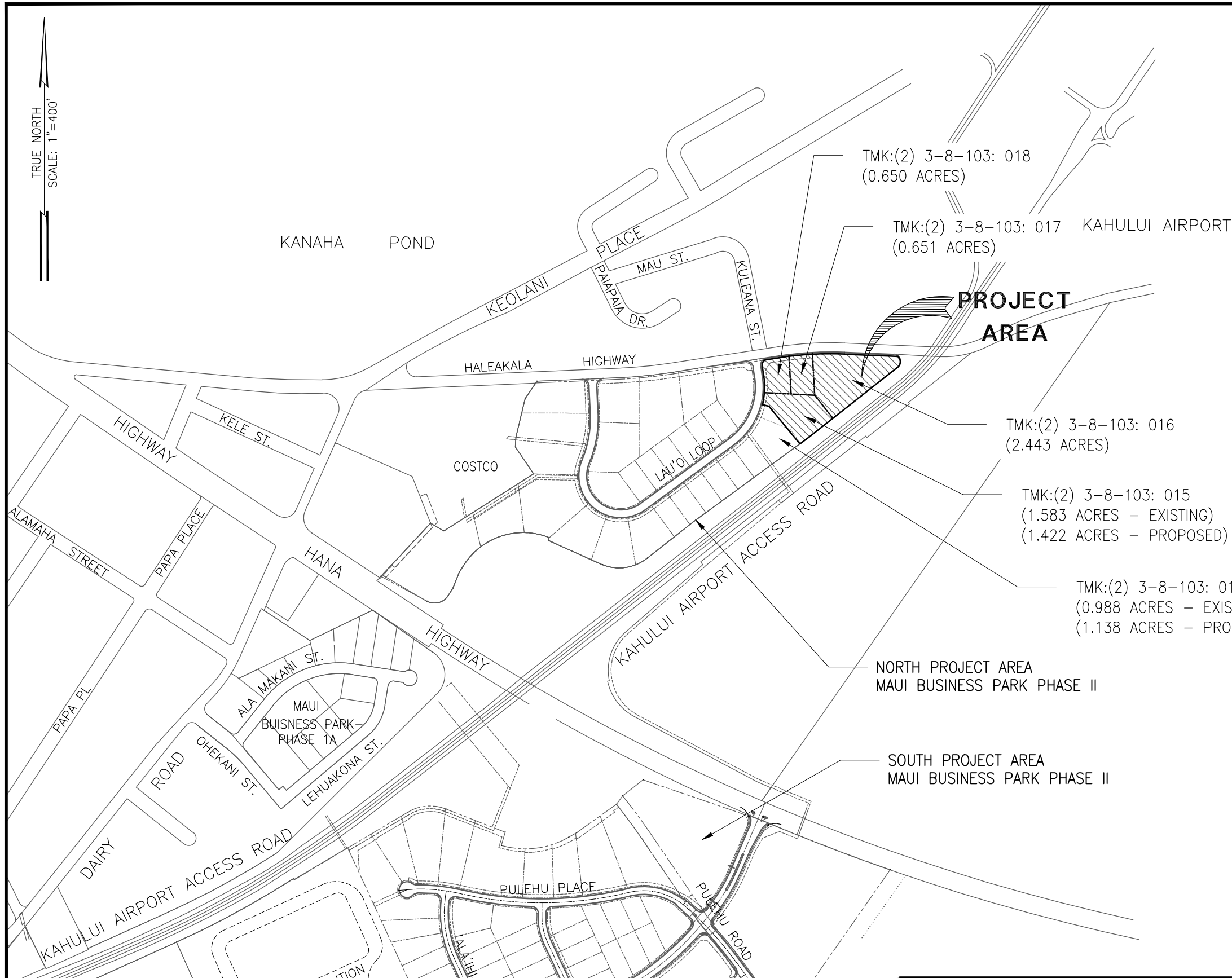


AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
CIVIL ENGINEERS • SURVEYORS

---

## EXHIBITS

---



**PROJECT LOCATION**  
SCALE: NOT TO SCALE

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

KANAHA HOTEL AT KAHULUI AIRPORT

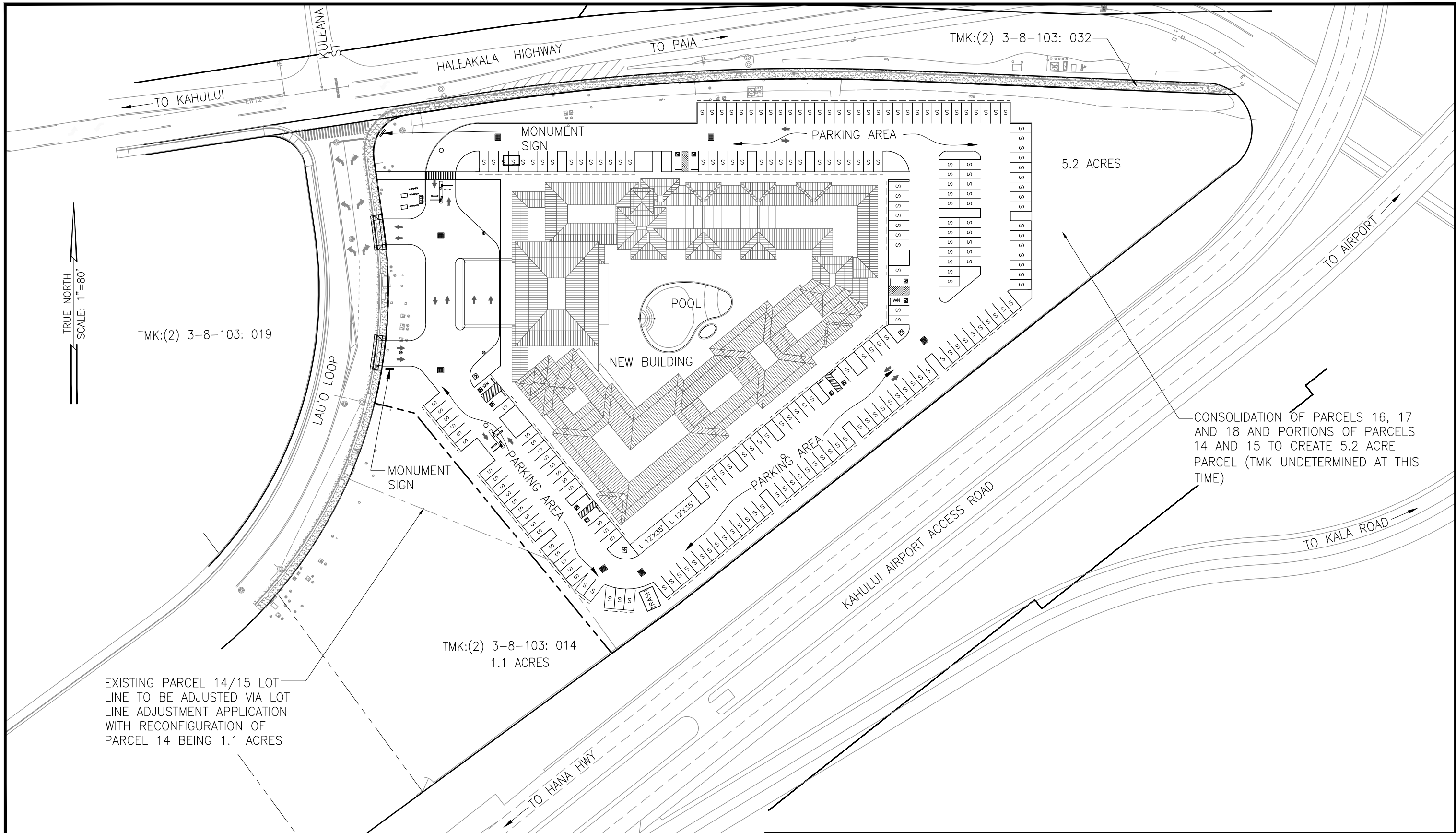
KAHULUI, MAUI, HAWAII

**ATA** AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

VICINITY MAP

EXHIBIT

1



EXISTING PARCEL 14/15 LOT  
LINE TO BE ADJUSTED VIA LOT  
LINE ADJUSTMENT APPLICATION  
WITH RECONFIGURATION OF  
PARCEL 14 BEING 1.1 ACRES

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

KANAHA HOTEL AT KAHULUI AIRPORT

KAHULUI, MAUI, HAWAII

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

GENERAL SITE PLAN

EXHIBIT

2



## Flood Hazard Assessment Report

www.hawaii.nfp.org

### Property Information

COUNTY: MAUI  
TMK NO: (2) 3-8-079:013  
WATERSHED: KAHULUI  
PARCEL ADDRESS: UNKNOWN ADDRESS  
KAHULUI, HI 96732

### Notes:

### Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 04, 2015  
LETTER OF MAP CHANGE(S): 14-09-2279P  
FEMA FIRM PANEL: 1500030411E  
PANEL EFFECTIVE DATE: SEPTEMBER 25, 2009

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: YES  
FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: YES (MA-0077; MA-0078; MA-0082; MA-0085; MA-0088)  
FOR MORE INFO, VISIT: <http://dlnr.hawaii.gov/dam/>



0 400 800 ft

*Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.*

*If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.*

### FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND (Note: legend does not correspond with NFHL)

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD** - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

|  |  |
|--|--|
|  | Zone A: No BFE determined.   |
|  | Zone AE: BFE determined.   |
|  | Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.   |
|  | Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.   |
|  | Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.  |
|  | Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.  |
|  | Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE. |

**NON-SPECIAL FLOOD HAZARD AREA** - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

|  |   |
|--|---|
|  | Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood. |
|  | Zone X: Areas determined to be outside the 0.2% annual chance floodplain.   |

### OTHER FLOOD AREAS

|  |  |
|--|--|
|  | Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities. |
|--|--|

PRELIMINARY ENGINEERING AND DRAINAGE REPORT  
KANAHA HOTEL AT KAHULUI AIRPORT  
KAHULUI, MAUI, HAWAII



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

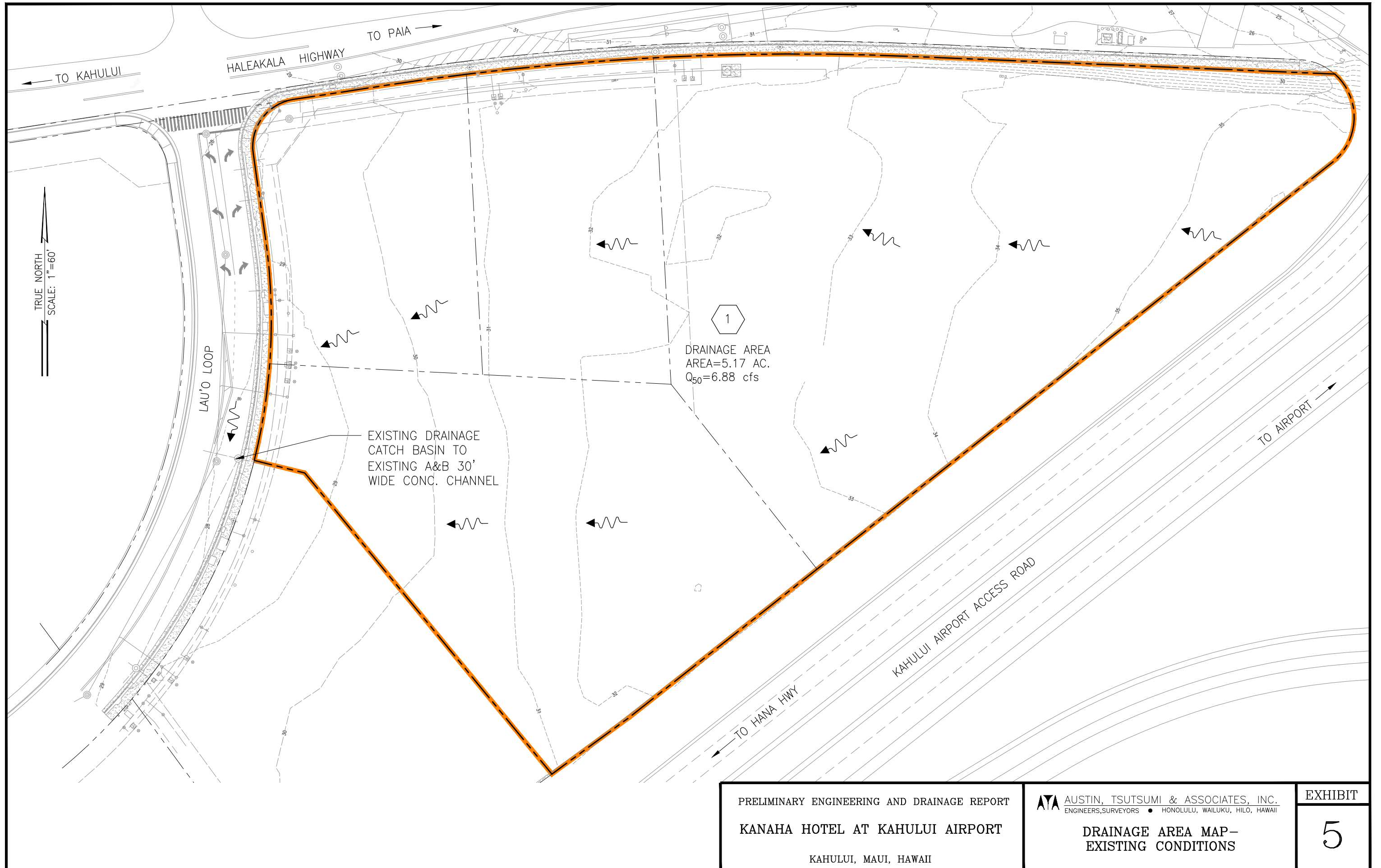
FLOOD MAP

EXHIBIT

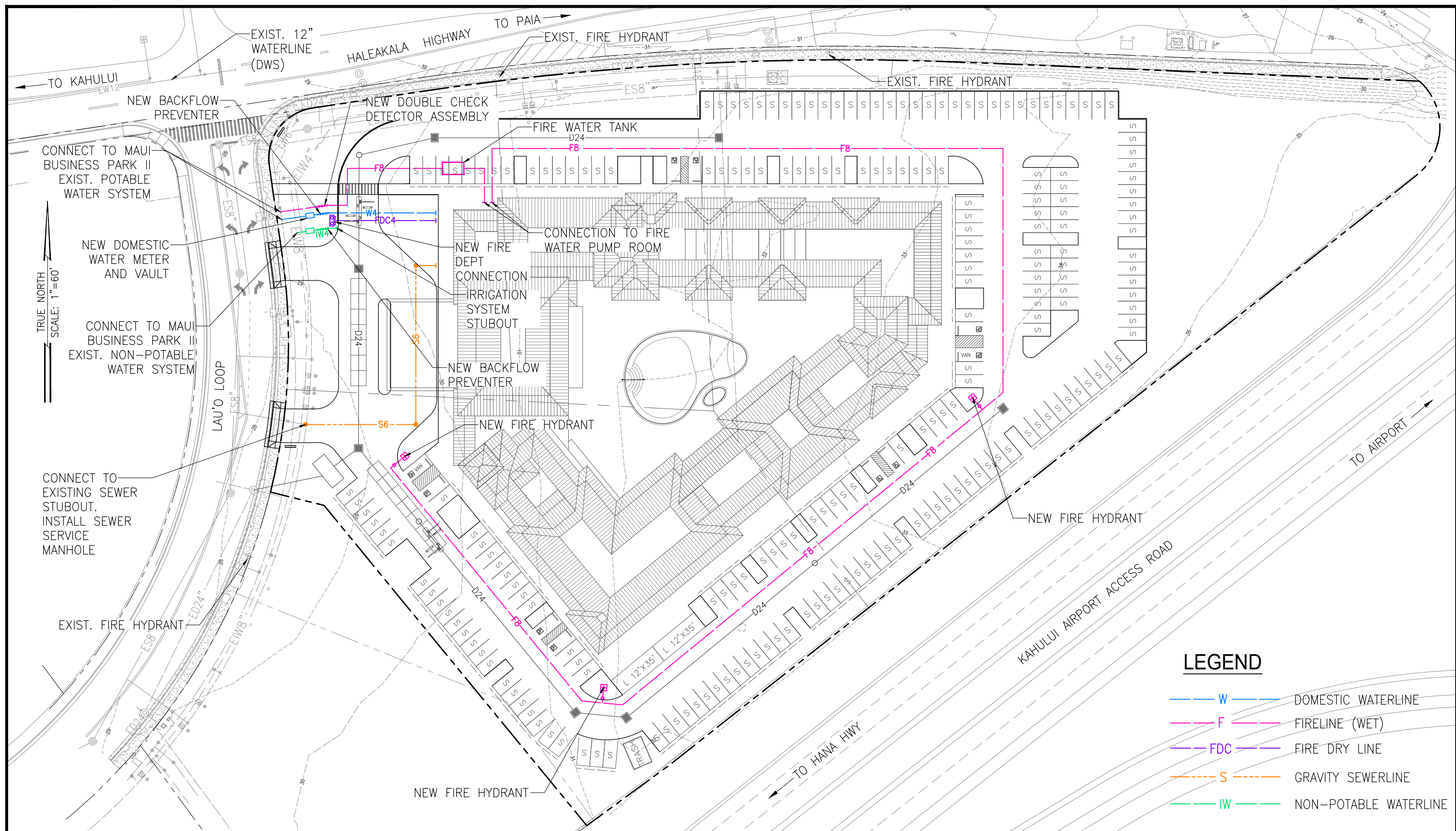
3











### LEGEND

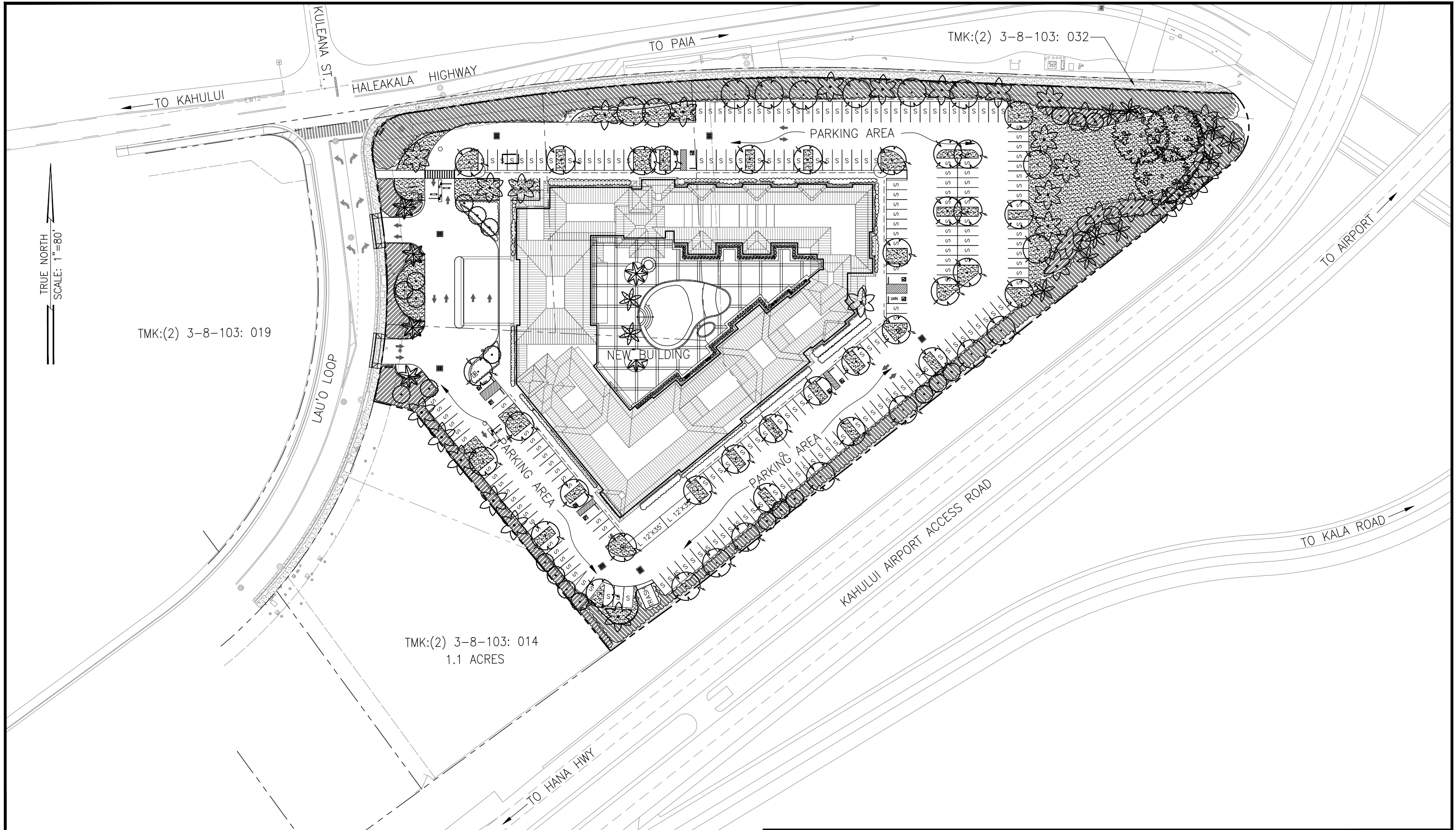
- W — DOMESTIC WATERLINE
- F — FIRELINE (WET)
- FDC — FIRE DRY LINE
- S — GRAVITY SEWERLINE
- IW — NON-POTABLE WATERLINE

PRELIMINARY ENGINEERING AND DRAINAGE REPORT  
KANAHA HOTEL AT KAHULUI AIRPORT  
KAHULUI, MAUI, HAWAII

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

ONSITE WATER AND  
SEWER MAP

EXHIBIT  
6



PRELIMINARY ENGINEERING AND DRAINAGE REPORT

KANAHA HOTEL AT KAHULUI AIRPORT

KAHULUI, MAUI, HAWAII

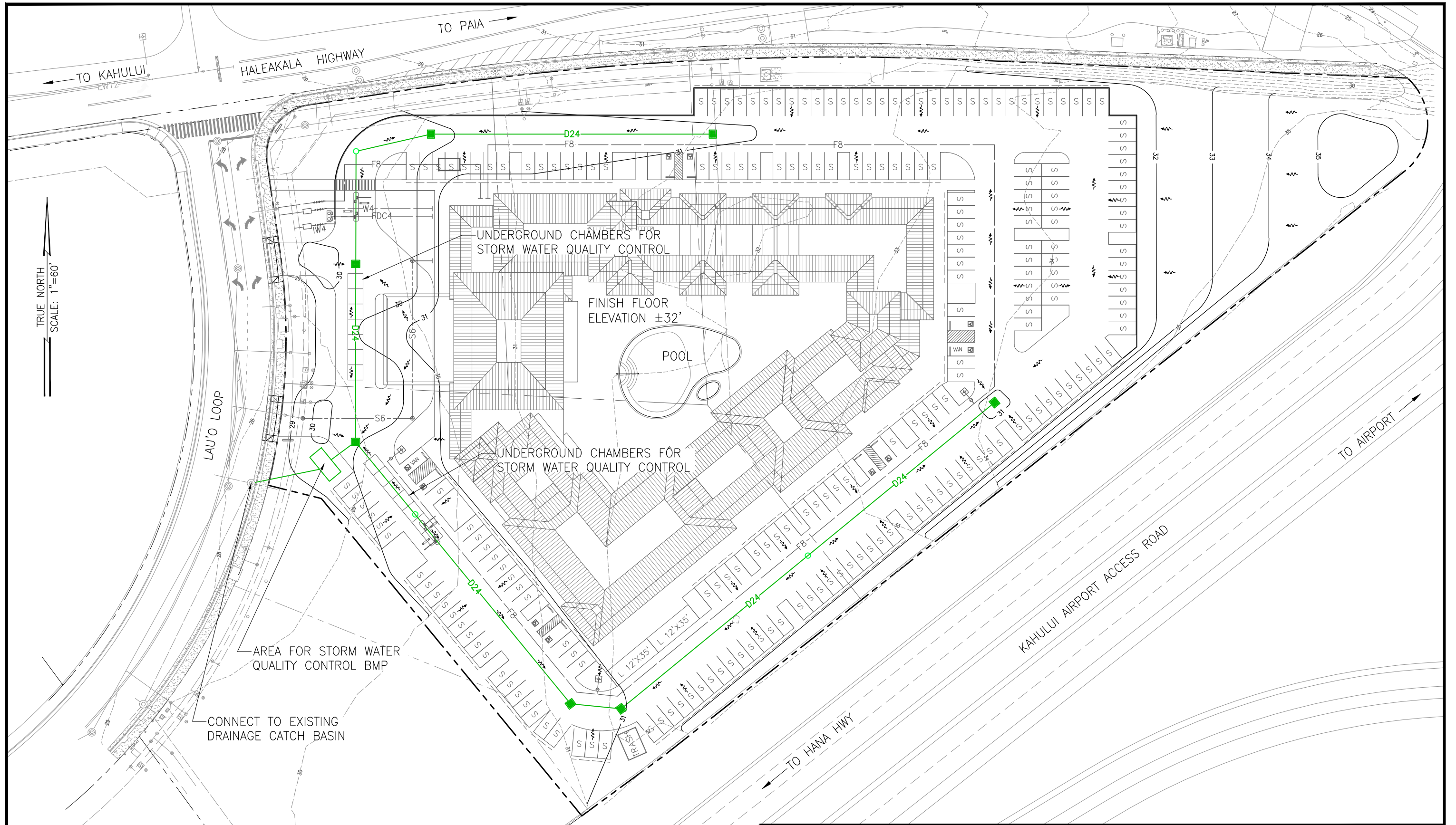
ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

LANDSCAPE PLAN

EXHIBIT

7





PRELIMINARY ENGINEERING AND DRAINAGE REPORT

KANAHAN HOTEL AT KAHULUI AIRPORT

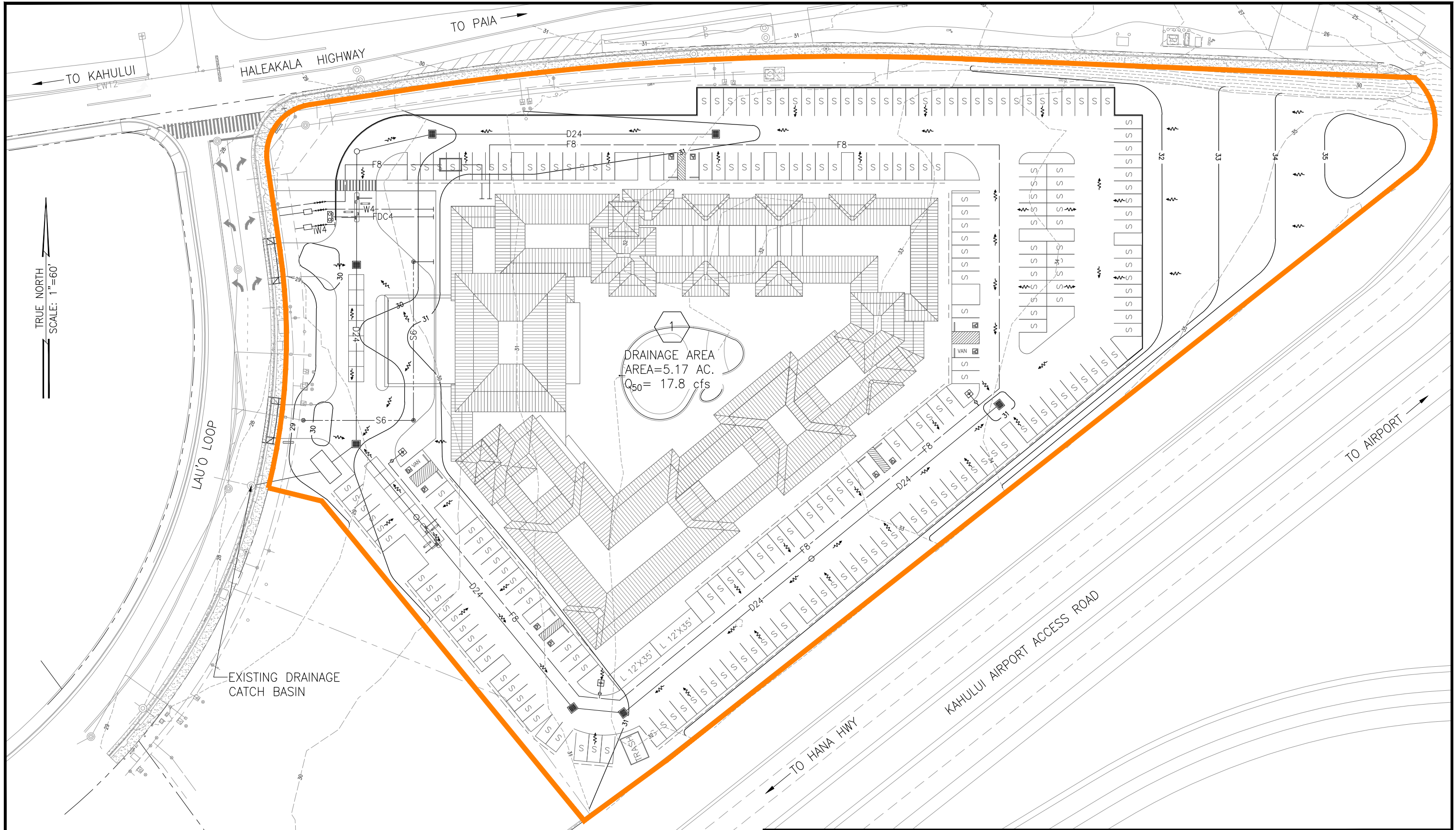
KAHULUI, MAUI, HAWAII

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

GENERAL GRADING PLAN

EXHIBIT

8



PRELIMINARY ENGINEERING AND DRAINAGE REPORT

KANAHA HOTEL AT KAHULUI AIRPORT

KAHULUI, MAUI, HAWAII

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

DRAINAGE AREA MAP—  
PROPOSED CONDITIONS

EXHIBIT

9

KANAHA HOTEL PROJECT SITE

$Q_T = 17.8$  cfs



ONSITE DRAINAGE SYSTEM



STORM WATER QUALITY SYSTEM



MBP DRAINAGE SYSTEM



A&B CONCRETE DITCH

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

KANAHA HOTEL AT KAHULUI AIRPORT

KAHULUI, MAUI, HAWAII



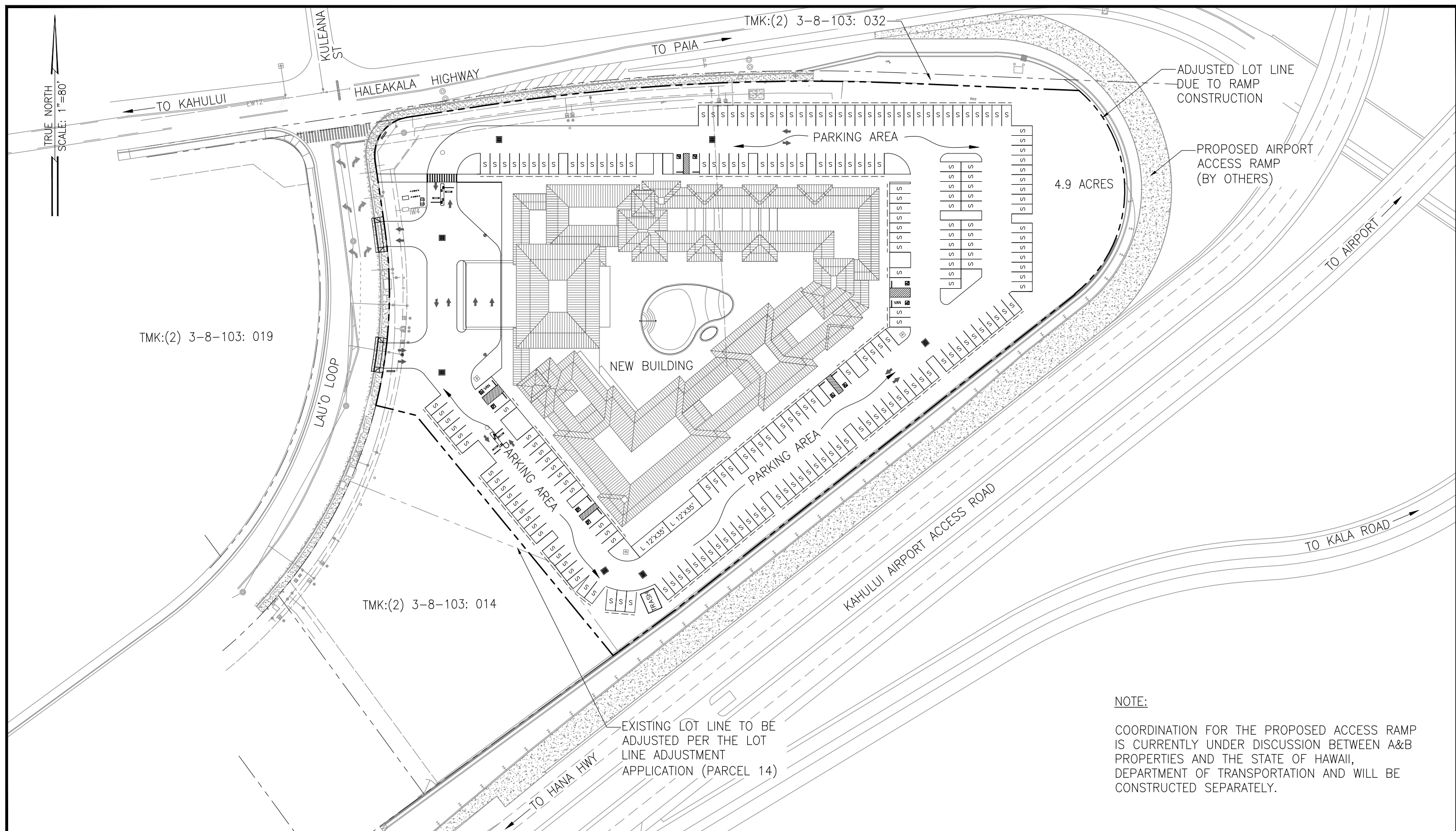
AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

DRAINAGE FLOW CHART

EXHIBIT

10





|   |  |                                 |
|---|--|---------------------------------|
| <p>PRELIMINARY ENGINEERING AND DRAINAGE REPORT</p> <p><b>KANAHA HOTEL AT KAHULUI AIRPORT</b></p> <p>KAHULUI, MAUI, HAWAII</p> | <p><b>ATA</b> AUSTIN, TSUTSUMI &amp; ASSOCIATES, INC.<br/>ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII</p> <p><b>GENERAL SITE PLAN 2</b><br/><b>AIRPORT ACCESS RAMP OPTION</b></p> | <p>EXHIBIT</p> <p><b>11</b></p> |
|   |  |                                 |





---

## APPENDICES

---



# **APPENDIX A**

## **DRAINAGE STUDY**

### **KANAHHA HOTEL AT KAHULUI AIRPORT**

### **PRELIMINARY HYDROLOGY CALCULATIONS**

---

## Appendix A

### Existing On-Site Hydrology Calculations

(50 Year – 1 Hour Storm)

#### Runoff (Q)

$$Q = (c)(i)(a)$$

Q = discharge, in cubic feet per second (cfs)

c = runoff coefficient

i = rainfall intensity, inches per hour

a = watershed area, in acres

#### Drainage Area 1

##### **Runoff Coefficient (c) :**

Mix of overgrown brush and weeds, 1% slope

$$c = 0.35$$

##### **Rainfall Intensity (i):**

Longest Reach Length: approximately 630 feet @ 1.0% slope over "Poor Grass"

Time of Concentration: 24 minutes

Recurrence Interval: 50 Year, 1-hour Storm

Rainfall Intensity (i) = 3.8 inches/hour for 50-yr storm with the duration equal to Tc

---

Project: Kanaha Hotel at Kahului Airport  
Kahului, Maui, Hawaii  
TMK: (2) 3-8-103: 015, 016, 017, 018

Job No: M-17-539  
Computed by: DK  
Date: June 2017 [1 of 2]

---



Austin, Tsutsumi & Associates, Inc. • Civil Engineers • Surveyors  
1871 Wili Pa Loop • Suite A • Wailuku, HI 96793 • (808) 244-8044

**Area (a):**

a = 5.17 acres

**Runoff ( $Q_{50}$ ):**

$Q_{50} = (0.35)(3.8 \text{ inches/hour})(5.17 \text{ acres}) = \mathbf{6.88 \text{ cfs}}$

---

Project: Kanaha Hotel at Kahului Airport  
Kahului, Maui, Hawaii  
TMK: (2) 3-8-103: 015, 016, 017, 018

Job No: M-17-539  
Computed by: DK  
Date: June 2017 [2 of 2]

---



Austin, Tsutsumi & Associates, Inc. • Civil Engineers • Surveyors  
1871 Wili Pa Loop • Suite A • Wailuku, HI 96793 • (808) 244-8044

## Appendix A

### Proposed On-Site Hydrology Calculations

(50 Year – 1 Hour Storm)

#### Runoff (Q)

$$Q = (c)(i)(a)$$

Q = discharge, in cubic feet per second (cfs)

c = runoff coefficient

i = rainfall intensity, inches per hour

a = watershed area, in acres

#### Drainage Area 1

Runoff Coefficient (c) :

Mix of grass and paved surface.

$$c = 0.732 \text{ (weighted by area)}$$

Rainfall Intensity (i):

Longest Reach Length:

Approximately 110 @ 2.8% slope over "Average Grass"

Approximately 30.5 feet @ 1% slope over "Paved Surface"

Approximately 705 feet @ 5 fps through "Pipe Flow"

Time of Concentration: 15 minutes (total)

---

Project: Kanaha Hotel at Kahului Airport  
Kahului, Maui, Hawaii  
TMK: (2) 3-8-103: 015, 016, 017, 018

Job No: M-17-539  
Computed by: JK  
Date: June 2017 [1 of 2]

---



Austin, Tsutsumi & Associates, Inc. • Civil Engineers • Surveyors  
1871 Wili Pa Loop • Suite A • Wailuku, HI 96793 • (808) 244-8044

Recurrence Interval: 50 Year, 1-hour Storm

Rainfall Intensity (i) = 4.7 inches/hour for 50-yr storm with the duration equal to Tc

Area (a) = 5.17 acres

$$Q_{50} = (0.732)(4.7 \text{ inches/hour})(5.17 \text{ acres}) = 17.8 \text{ cfs}$$

---

Project: Kanaha Hotel at Kahului Airport  
Kahului, Maui, Hawaii  
TMK: (2) 3-8-103: 015, 016, 017, 018

Job No: M-17-539  
Computed by: JK  
Date: June 2017 [2 of 2]



Austin, Tsutsumi & Associates, Inc. • Civil Engineers • Surveyors  
1871 Wili Pa Loop • Suite A • Wailuku, HI 96793 • (808) 244-8044

## **Appendix 6**

### Environmental Site Assessments Phase 1

## **Phase I Environmental Site Assessment**

6.315-Acre Property  
Portion of Tax Map Key No. (TMK): (2) 3-8-079: Parcel 013  
(Lots 17-A-14, -15, -16, -17, and -18)  
Kahului, Maui, Hawaii

Ford Canty Project No. 17-1209

June 21, 2017

*Prepared for:*

**R.D. Olson Development**  
520 Newport Center Drive, Suite 600  
Newport Beach, California 92660

*Prepared by:*

**Ford Canty & Associates, Inc.**  
928 Nuuanu Avenue, Suite 505  
Honolulu, Hawaii 96813  
808.426.6927

---



## TABLE OF CONTENTS

| <u>Section</u>  | <u>Page</u> |
|---|-------------|
| <b>List of Acronyms .....</b>   | <b>iii</b>  |
| <b>Executive Summary.....</b>   | <b>v</b>    |
| <br>  |             |
| 1.0 INTRODUCTION.....   | 1           |
| 1.1 PURPOSE .....   | 1           |
| 1.2 SCOPE OF WORK .....   | 1           |
| 1.3 LIMITING CONDITIONS AND EXCEPTIONS OF THE ASSESSMENT .....                    | 3           |
| 1.3.1 Unavailable Documentation .....   | 3           |
| 1.3.2 Data Gaps.....  | 3           |
| 1.3.3 Lack of Access/ Reconnaissance Limitations.....                             | 3           |
| 1.4 RELIANCE.....   | 4           |
| 2.0 USER PROVIDED INFORMATION .....   | 5           |
| 3.0 SUBJECT PROPERTY DESCRIPTION .....  | 6           |
| 3.1 SUBJECT PROPERTY LOCATION AND CURRENT USE .....                               | 6           |
| 3.2 CURRENT USES OF ADJOINING AND NEARBY PROPERTIES .....                         | 6           |
| 3.3 PHYSICAL SETTING .....  | 6           |
| 4.0 HISTORICAL USE INFORMATION REVIEW.....  | 8           |
| 4.1 SUMMARY OF HISTORICAL USE .....   | 8           |
| 4.2 USGS TOPOGRAPHIC MAPS .....   | 9           |
| 4.3 AERIAL PHOTOGRAPHS .....  | 9           |
| 4.4 FIRE INSURANCE MAPS .....   | 10          |
| 4.5 RECORDED LAND TITLE RECORDS .....   | 10          |
| 4.6 CITY DIRECTORY .....  | 11          |
| 4.6.1 Building, Planning, and/or Zoning Departments.....                          | 11          |
| 4.6.2 Fire Department.....  | 11          |
| 4.6.3 Department of Health, Solid and Hazardous Waste Branch.....                 | 12          |
| 4.6.4 Department of Health, Hazard Evaluation and Emergency Response Office ..... | 12          |
| 4.7 PREVIOUS ENVIRONMENTAL REPORTS .....  | 15          |
| 5.0 STANDARD FEDERAL, STATE, AND TRIBAL ENVIRONMENTAL RECORD SOURCES .....        | 19          |
| 6.0 SITE RECONNAISSANCE .....   | 22          |
| 6.1 GENERAL OBSERVATIONS .....  | 22          |
| 6.2 HAZARDOUS SUBSTANCE AND PETROLEUM PRODUCTS (OTHER THAN UST/AST) .....         | 22          |
| 6.3 STORAGE TANKS.....  | 23          |
| 6.3.1 Underground Storage Tanks .....   | 23          |
| 6.3.2 Aboveground Storage Tanks .....   | 23          |
| 6.3.3 In-Ground Hydraulic Equipment .....   | 23          |
| 6.4 WASTES.....   | 23          |
| 6.5 POLYCHLORINATED BIPHENYLS .....   | 23          |
| 6.6 WASTE WATER AND STORM WATER DISCHARGE .....                                   | 24          |
| 6.7 WELLS.....  | 24          |
| 7.0 INTERVIEWS.....   | 25          |

|      |   |    |
|------|---|----|
| 8.0  | TIER 1 VAPOR ENCROACHMENT SCREEN (VES)..... | 27 |
| 9.0  | NON-ASTM ISSUES .....                       | 28 |
| 9.1  | ASBESTOS-CONTAINING MATERIALS (ACM).....    | 28 |
| 9.2  | RADON .....                                 | 28 |
| 9.3  | LEAD-BASED PAINT (LBP) .....                | 28 |
| 9.4  | WETLANDS .....                              | 29 |
| 10.0 | FINDINGS, OPINIONS, AND CONCLUSIONS .....   | 30 |
| 11.0 | SIGNATURES .....                            | 32 |

### **Figures**

- 1 Subject Property Location Map
- 2 Subject Property Vicinity Map

### **Photographs**

### **Appendices**

- A Resumes
- B User Questionnaire
- C Topographic Maps
- D Aerial Photographs
- E Sanborn Fire Insurance Maps
- F Title Report
- G City Directory Report
- H State of Hawaii Department of Health "No Further Action" Letters
- I Regulatory Database Report

### **References**

## LIST OF ACRONYMS

|               |   |
|---------------|---|
| AAI           | All Appropriate Inquiry   |
| ACM           | Asbestos-Containing Materials   |
| AOC           | Area of Concern   |
| AST           | Aboveground storage tanks   |
| ASTM          | ASTM International  |
| AULs          | Activity and Use Limitations  |
| bgs           | below ground surface  |
| BTEX          | Benzene, Toluene, Ethylbenzene, and Xylene                            |
| CERCLA        | Comprehensive Environmental Response, Compensation, and Liability Act |
| CESQG         | Conditionally Exempt Small Quantity Generator                         |
| CFR           | Code of Federal Regulations   |
| COC           | Chemicals of Concern  |
| COPC          | Chemicals of Potential Concern  |
| CPP           | Central Power Plant   |
| DLNR          | State of Hawaii, Department of Land and Natural Resources             |
| DRO           | Diesel Range Organics   |
| DU            | Decision Unit   |
| EAL           | Environmental Action Level  |
| EDR           | Environmental Data Resources, Inc.                                    |
| EDR Hist Auto | EDR Exclusive Historic Gas Stations                                   |
| ESA           | Environmental Site Assessment   |
| FEMA          | Federal Emergency Management Agency                                   |
| FIRM          | Flood Insurance Rate Map  |
| Ford Canty    | Ford Canty & Associates, Inc.   |
| FPB           | Fire Prevention Bureau  |
| FUDS          | Formerly Used Defense Sites   |
| HDOH          | State of Hawaii Department of Health                                  |
| HEER          | Hazard Evaluation and Emergency Response                              |
| HUD           | Housing and Urban Development   |
| LBP           | Lead-Based Paint  |
| LUST          | Leaking underground storage tank                                      |
| MECO          | Maui Electric Company   |
| MFD           | Maui Fire Department  |
| mg/kg         | Milligrams per kilogram   |
| mg/L          | Milligrams per Liter  |
| NESHAPS       | National Emissions Standards for Hazardous Air Pollutants             |
| MPC           | Maui Pineapple Company  |
| NFA           | No Further Action   |
| NonGen        | Non Generator   |
| OSHA          | Occupational Safety and Health Administration                         |
| PAHs          | Polynuclear Aromatic Hydrocarbons                                     |
| PCBs          | Polychlorinated Biphenyls   |
| RCRA          | Resource Conservation and Recovery Act                                |

|        |   |
|--------|---|
| RRO    | Residual Range Organics                       |
| SEMS   | Superfund Enterprise Management System        |
| SHWB   | Solid and Hazardous Waste Branch              |
| SHWS   | State Hazardous Waste Sites                   |
| SQG    | Small Quantity Generator                      |
| TGM    | Technical Guidance Manual                     |
| TMK    | Tax Map Key                                   |
| TPH    | Total Petroleum Hydrocarbons                  |
| UIC    | Underground Injection Control                 |
| U.S.C. | United States Code                            |
| USDA   | United States Department of Agriculture       |
| USEPA  | United States Environmental Protection Agency |
| USFWS  | United States Fish and Wildlife Service       |
| USGS   | United States Geological Survey               |
| UST    | Underground storage tank                      |
| VCP    | Voluntary Response Program                    |
| VEC    | Vapor Encroachment Condition                  |
| VES    | Vapor Encroachment Screen                     |

## EXECUTIVE SUMMARY

R.D. Olson Development retained Ford Canty & Associates, Inc. (Ford Canty) to conduct a Phase I Environmental Site Assessment (Phase I ESA or Assessment) of the 6.315-acre property located on a portion of Tax Map Key number (TMK): (2) 3-8-079: Parcel 013 (Lots 17-A-14, -15, -16, -17, and -18) in Kahului, Maui, Hawaii (the “subject property”). The objective of the Phase I ESA was to provide an independent, professional opinion regarding recognized environmental conditions, as defined by ASTM International (ASTM), associated with the subject property. This Phase I ESA was requested in association with an acquisition.

Ford Canty performed this Phase I ESA under the conditions of, and in accordance with, Proposal Number 17P-2271, dated May 30, 2017 and ASTM International Practice E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* as a guideline. Any exceptions to, or deletions from, this practice are described in Sections 1.2 and 1.3 of this report.

The subject property is an irregular-shaped, relatively flat, 6.316-acre land area that is currently undeveloped and covered with light to moderate vegetation. It is bounded by Haleakala Highway to the north, Airport Road to the south-southeast, and Lau’o Loop to the west. Infrastructure is already in place, including underground electrical lines, associated transformer/gear box/meter, water lines/valves/meters, sewer cleanouts, and an irrigation system. Most of these utilities are located along the western boundary of the subject property, and some additional utilities are located along the northern boundary.

The County of Maui Real Property Tax Assessment database lists the subject property as the easternmost portion of TMK: (2) 3-8-079: Parcel 013, which is divided into numerous land lots. The lots within the subject property include Lots 17-A-14, -15, -16, -17, and -18.

The historical research presented in this Assessment has established the use of the subject property since 1922. In addition, information on historic uses of adjoining properties was also obtained. A chronological summary of the historic uses of the subject and adjoining/nearby properties is presented below.

The earliest available topographic map, dated 1922, depicts the subject property and adjoining areas as undeveloped land, except for a railroad extending through the southwest portion of the subject property and a roadway (currently Haleakala Highway) depicted along the north boundary of the subject property. The earliest available aerial photograph, from 1950, shows the subject property and immediate surroundings as undeveloped land covered with trees and other vegetation.

The 1976 and 1992 aerial photographs show the subject property and adjoining areas to the east, west, and south as sugar cane fields. A circular area on the north-central portion of the subject property is shown with a few structures. This area is the former Maui Pineapple Company (MPC) seed treatment plant. This seed treatment plant also appears in the aerial photographs from 2000 and 2004. The aerial photographs from 2012 and 2013 show the subject property undergoing initial development, with the vegetation removed and earth-moving/infrastructure activities being conducted. A rectangular, fenced-

in area is shown on the southwestern portion of the subject property, containing piles of soil. This is where asbestos- and lead-impacted soils were temporarily stored following cleanup of the former MPC Seed Treatment Plant. The 2014 aerial photograph shows the earth-moving/infrastructure activities were completed at the subject property.

According to available records at the County of Maui Real Property Tax Assessment Office, the subject property was formerly part of a larger land parcel (TMK: [2] 3-8-001: Parcel 016) that was owned by Hawaiian Commercial & Sugar Company, Ltd. in 1947. This parcel was deeded to Alexander & Baldwin Inc., the current landowner, in 1962. The current subject parcel (TMK: [2] 3-8-079: Parcel 013) was created in 1992, and portions of the parcel were condemned by the State of Hawaii for the construction of new roadways in 1993-1994. Between 1995 and 2012, several Grant of Easements were issued for the installation of various utilities under the names: Costco Wholesale Corporation, L&M Custom Exchange Ltd., and Maui Electric Company Limited. In 2016, the parcel was subdivided into 32 lots (Lots 17-A-1 through 17-A-32).

This Assessment has revealed no evidence of current recognized environmental conditions, as defined by ASTM, in connection with the subject property.

This Assessment has revealed the following evidence of historical recognized environmental conditions, as defined by ASTM, in connection with the subject property:

- **Former MPC Seed Treatment Plant** – Phase II environmental investigations were conducted in 2007 and 2011 at the former MPC Seed Treatment Plant, located on the north-central portion of the subject property. Suspect areas investigated included: a former diesel aboveground storage tank (AST), two former dip tank/overflow areas, a former bin storage area, the perimeter area, a cesspool area, and a former hydraulic lifts area. Soil samples were collected and analyzed for various chemicals of potential concern (COPC), including: total petroleum hydrocarbons (TPH) as diesel range organics (DRO), Pesticide Screen (including triademefon and diazinon), and Carbamate Pesticides (including benomyl, metalaxyl, and propiconazole), polynuclear aromatic hydrocarbons (PAHs) benzene, toluene, ethylbenzene, and xylene (BTEX), polychlorinated biphenyls (PCBs), TPH as residual range organics (RRO), lead, and cadmium.

Based on the laboratory results, all of the COPC were detected at concentrations below the respective State of Hawaii Department of Health (HDOH) Tier 1 Environmental Action Levels (EALs) based on commercial/industrial land use or unrestricted land use. The HDOH Hazard Evaluation and Emergency Response (HEER) Office subsequently issued a “No Further Action” (NFA) determination for the MPC Seed Treatment Plant on August 26, 2011.

This finding is considered a historical recognized environmental condition because there is evidence of past releases of COPC at the former MPC Seed Treatment Plant on the subject property. However, based on the results of Phase II investigations, the site received a NFA determination from the HDOH, HEER Office. Therefore, this finding is not considered a current recognized environmental condition.

- **Former Agricultural Dump Site** – The north-central portion of the subject property was also identified as a former agricultural dump site, prior to its use as the MPC Seed Treatment Plant. Following the removal of the seed treatment plant and associated Phase II investigations in 2011, subsurface investigation of the former agricultural dump site was conducted, including the excavation of exploratory trenches which identified a top layer of broken glass, scrap metal, and other wastes including asbestos-containing materials (ACM). A layer of burned material was discovered beneath this top layer of waste materials/ACM. Samples collected from the burn layer were analyzed for organochlorine pesticides, dioxin, PAHs, arsenic, and lead.

Based on the laboratory results, only lead was identified at concentrations above the established Tier 1 EAL. Asbestos- and lead-impacted soils across the site were excavated in various stages, until confirmation soil sampling and analysis showed that asbestos and lead concentrations were below the respective regulatory levels of 1% asbestos and 200 milligrams per kilogram (mg/kg) lead. The HDOH, HEER Office subsequently issued a “NFA” determination for the former agricultural dump site on June 8, 2017.

This finding is considered a historical recognized environmental condition because there is evidence of past releases of ACM and lead at the former agricultural dump site on the subject property. However, following remediation activities and confirmation soil testing, the site received a NFA determination from the HDOH, HEER Office. Therefore, this finding is not considered a current recognized environmental condition. Although no further action is recommended, future excavation activities should be monitored for evidence of potential buried waste materials.

It should be noted that review of historical aerial photographs and tax assessment records indicate that the subject property was formerly used as agricultural land to grow sugar cane, from at least 1947 until the 1990s. Use of agricultural chemicals such as herbicides and pesticides on cane fields may be an environmental concern, and the HDOH recommends that sites where pesticides were regularly applied be evaluated for residual contamination prior to re-development.

## **1.0 INTRODUCTION**

R.D. Olson Development retained Ford Canty & Associates, Inc. (Ford Canty) to conduct a Phase I Environmental Site Assessment (Phase I ESA or Assessment) of the 6.315-acre property located on a portion of Tax Map Key number (TMK): (2) 3-8-079: Parcel 013 (Lots 17-A-14, -15, -16, -17, and -18) in Kahului, Maui, Hawaii (the “subject property”). The objective of the Phase I ESA was to provide an independent, professional opinion regarding recognized environmental conditions, as defined by ASTM International (ASTM), associated with the subject property. This Phase I ESA was requested in association with an acquisition.

### **1.1 PURPOSE**

The purpose of the assessment is to follow ASTM Practice E1527-13 (ASTM E1527-13), which defines good commercial and customary practice in the United States of America for conducting an environmental assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. [United States Code] §9601) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (hereinafter, the “landowner liability protections,” or “LLPs”): that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35)(B).

The term “recognized environmental condition” means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis conditions are those conditions that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. De minimis conditions are not considered recognized environmental conditions.*

### **1.2 SCOPE OF WORK**

Ford Canty performed this Phase I ESA under the conditions of, and in accordance with Proposal Number 17P-2271, dated May 30, 2017, and ASTM Practice E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* as a guideline. ASTM Practice E 1527-13 constitutes “all appropriate inquiry (AAI)” into the previous ownership and uses of a property consistent with good commercial or customary practice” as defined at 42 U.S.C. §9601(35)(B). This practice also permits the user to satisfy one of the requirements to qualify for “LLPs” under CERCLA.

This assessment included the following components:

- Investigate historical use(s) of the subject property through reasonably ascertainable historical information, such as aerial photographs, fire insurance maps, land use maps, city directories,



and/or agency records for evidence of prior land use that could have led to recognized environmental conditions.

- Review available information on general geology and topography of the subject property, local groundwater conditions, sources of water, power, and sewer, and proximity to ecologically sensitive receptors, such as streams, that might be impacted by recognized environmental conditions and environmental issues.
- Review environmental records available from the property owner, current lessee, or site contact including regulatory agency reports, permits, registrations, and consultants' reports for evidence of recognized environmental conditions and activity and use limitations (AULs).
- Interview, or attempt to interview, the subject property owner, current lessee, current lessee's operations personnel, key site personnel, and others, regarding current and previous uses of the property, particularly activities involving hazardous substances and petroleum products.
- Conduct an onsite reconnaissance of the subject property for visual evidence of recognized environmental conditions, including:
  - Existing or potential soil and water contamination, as evidenced by soil or pavement staining or discoloration, stressed vegetation, or indications of waste dumping or burial
  - Pits, ponds, or lagoons
  - Containers of hazardous substances or petroleum products
  - Electrical and hydraulic equipment that may contain polychlorinated biphenyls (PCBs), such as electrical transformers and hydraulic hoists
  - Underground and aboveground storage tanks (USTs and ASTs, respectively)
- Perform a site property line visual assessment of adjacent properties for evidence of potential offsite environmental conditions that may affect the subject property.
- Review a commercial database summary of federal and state and tribal regulatory agency records pertinent to the subject property and offsite facilities located within ASTM-specified search distances from the subject property.
- As part of the Phase I ESA, conduct Vapor Encroachment Screening to assess the potential for chemical and petroleum hydrocarbon vapor impacts to the subject property from onsite and offsite sources, in accordance with the ASTM E2600-10 Standard.
- Prepare this written report, including our findings and conclusions.

Ford Canty representative Mr. Tim Swartz, Senior Project Manager and Environmental Professional as defined in §312.10 of 40 Code of Federal Regulations (CFR) 312 (see Section 11.0), conducted the site walkthrough portion of the assessment on June 1, 2017, unaccompanied.

Copies of selected relevant documents and supporting information are included in the applicable appendices. Resumes for assessors and Environmental Professionals involved in this Assessment are included in Appendix A. The Subject Property Location Map and Subject Property Vicinity Maps are included behind the Figures Tab. Photographs taken at the time of the walkthrough are included behind the Photographs Tab.

### **1.3 LIMITING CONDITIONS AND EXCEPTIONS OF THE ASSESSMENT**

Information obtained for this Assessment from sources (listed in the appendices), to the extent it was relied on to form our opinion, is assumed to be correct and complete. Ford Canty is not responsible for the quality or content of information from these sources.

#### **1.3.1 Unavailable Documentation**

The following requested documents were not available for review as of the date of this report:

- The County of Maui Fire Department (MFD) Fire Prevention Bureau was contacted on June 5, 2017 to obtain information regarding any fires, complaints, permits, or violations involving hazardous material use, USTs, or ASTs on record for the subject and/or adjoining properties.

As of the date of this report, Ford Canty has not received this information. If later findings change the conclusions and recommendations in this report, Ford Canty will forward an addendum letter to R.D. Olson Development.

#### **1.3.2 Data Gaps**

The ASTM Practice indicates that all obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. Any significant "data gaps" which affect the ability of the Environmental Professional to identify recognized environmental conditions shall be noted.

Historical subject property ownership and/or use information was obtained for the time period, 1922 to present. Based on this information, Ford Canty has established the history of uses of the subject property since 1940 or first development, whichever is earlier.

#### **1.3.3 Lack of Access/ Reconnaissance Limitations**

Ford Canty did not encounter significant access or reconnaissance limitations at the subject property.

#### **1.4 RELIANCE**

The information and opinions rendered in this report are exclusively for use by R.D. Olson Development. Ford Canty will not distribute or publish this report without consent except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented only in light of that assignment. The services provided by Ford Canty in completing this project were consistent with normal standards of the profession. No other warranty, expressed or implied, is made.

## **2.0 USER PROVIDED INFORMATION**

ASTM E1527-13 defines “User” as the party seeking to use Practice E1527 to complete a Phase I ESA of the subject property. ASTM E1527-13 specifies that certain tasks associated with identifying potential recognized environmental conditions at the subject property should be performed by the User and provided to the Environmental Professional (i.e., User’s Responsibilities). Ford Canty understands that R.D. Olson Development is the User as defined by ASTM E1527-13, and has provided the User a questionnaire, requesting specific information.

The User Questionnaire included requests for information on the following:

- (1) Environmental liens and AULs that are filed or recorded against the property;
- (2) “Specialized knowledge” of the User;
- (3) Relationship of the purchase price to the fair market value of the property if it were not contaminated;
- (4) Commonly known or reasonable ascertainable information;
- (5) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation;
- (6) The presence of Proceedings Involving the Property (e.g., litigation, regulatory agency rulings, violations);
- (7) The reason for performing the Phase I ESA; and
- (8) Other information/documents (e.g., site plan, ALTA survey).

Based on Ford Canty’s review of the User provided information, no evidence of recognized environmental conditions at the subject property was noted. The completed User Questionnaire is included in Appendix B.

### **3.0     SUBJECT PROPERTY DESCRIPTION**

#### **3.1     SUBJECT PROPERTY LOCATION AND CURRENT USE**

The subject property is an irregular-shaped, relatively flat, 6.316-acre land area that is currently undeveloped and covered with light to moderate vegetation. It is bounded by Haleakala Highway to the north, Airport Road to the south-southeast, and Lau'o Loop to the west. Infrastructure is already in place, including underground electrical lines, associated transformer/gear box/meter, water lines/valves/meters, sewer cleanouts, and an irrigation system. Most of these utilities are located along the western boundary of the subject property, and some additional utilities are located along the northern boundary.

The County of Maui Real Property Tax Assessment database lists the subject property as the easternmost portion of TMK: (2) 3-8-079: Parcel 013, which is divided into numerous land lots. The lots within the subject property include Lots 17-A-14, -15, -16, -17, and -18.

#### **3.2     CURRENT USES OF ADJOINING AND NEARBY PROPERTIES**

The area surrounding the subject property consists of resort, undeveloped and commercial properties. These adjoining and nearby properties were observed from the subject property, and are listed below:

North: Haleakala Highway, beyond which is the State of Hawaii, Department of Land and Natural Resources (DLNR) Maui Baseyard and undeveloped, vegetated land owned by the State of Hawaii

Northeast: Haleakala Highway, beyond which is undeveloped, vegetated land and Kahului Airport

East: Intersection of Haleakala Highway and Airport Road, beyond which is undeveloped, vegetated land and Kahului Airport

Southeast: Airport Road, beyond which is undeveloped vegetated land owned by the State of Hawaii

South: Airport Road, beyond which is undeveloped vegetated land owned by the State of Hawaii

Southwest: Remainder of the subject parcel, which is undeveloped, vegetated land

West: Lau'o Loop, beyond which is the remainder of the subject parcel, which is undeveloped, vegetated land

Northwest: Intersection of Haleakala Highway and Lau'o Loop, beyond which is the State of Hawaii Department of Agriculture baseyard

#### **3.3     PHYSICAL SETTING**

General information on the physical setting of the subject property was assessed through visual observations, and review of the following documents: (1) United States Geological Survey (USGS)

topographic maps, (2) soil survey information, and (3) aquifer identification information. The physical setting is described below:

- **Soils:** Molokai silty clay loam, with 3 to 7 percent slopes (United States Department of Agriculture [USDA] Soil Conservation Service, 2014)
- **Elevation:** Approximately 45 to 50 feet above mean sea level (USGS, Paia Quadrangle, 2013)
- **Estimated Depth to Shallow Groundwater:** Approximately 40 to 45 feet (USGS, Paia Quadrangle, 2013)
- **Estimated Shallow Groundwater Flow Direction:** North towards the Pacific Ocean (USGS Paia Quadrangle, 2013)
- **Nearby Surface Water/ Drainage Features:** Pacific Ocean, located approximately 3,500 feet north of the subject property (USGS Paia Quadrangle, 2013)

The Aquifer Identification and Classification for Maui: Groundwater Protection Strategy for Hawaii (Mink, J.F. and L.S. Lau, 1990), published by the Water Resources Research Center at the University of Hawaii, was reviewed for information on groundwater conditions below the subject property. The report describes the upper and lower aquifers below the subject property as part of the Kahului aquifer system of the Central aquifer sector, on the Island of Maui.

The upper aquifer is described as an unconfined basal aquifer of the sedimentary type, with nonvolcanic lithology. Its status is described as an irreplaceable water supply with low salinity (250-1,000 milligrams per liter [mg/L] Chloride) that is currently used and considered ecologically important; however, it is not used for drinking water purposes. This aquifer has a high vulnerability to contamination.

The lower aquifer is described as an unconfined basal aquifer of the flank type, occurring in horizontally extensive lavas. Its status is described as an irreplaceable water supply with low salinity that is currently used and considered ecologically important; however, it is not used for drinking water purposes. This aquifer has a moderate vulnerability to contamination.

The subject property is located below the State of Hawaii Department of Health (HDOH) Safe Drinking Water Branch defined Underground Injection Control (UIC) line. Areas above the UIC line denote potential underground drinking water sources. Areas below the UIC line generally denote groundwater that is unsuitable for drinking water purposes. Consequently, the groundwater underlying the subject property is not considered a potential drinking water source.

The subsurface conditions under the subject property are interpreted from available data and may vary. Estimated groundwater flow direction is based on topography and nearby water features unless otherwise noted. Topography is not always a reliable basis for predicting groundwater flow direction. The local groundwater gradient under the subject property may be influenced naturally by zones of higher or lower permeability, or artificially by nearby pumping or recharge, and may deviate from the regional trend.

#### **4.0      HISTORICAL USE INFORMATION REVIEW**

A review of available historical and related information was performed. This included a review of ASTM Standard Historical Sources, Agency/Department records/personnel interviews and other documents.

##### **4.1      SUMMARY OF HISTORICAL USE**

The following historical use summary incorporates information obtained from maps, aerial photographs, land title records, government agencies, interviews, and other components of the Assessment process.

The historical research presented in this Assessment has established the use of the subject property since 1922. In addition, information on historic uses of adjoining properties was also obtained. A chronological summary of the historic uses of the subject and adjoining/nearby properties is presented below.

The earliest available topographic map, dated 1922, depicts the subject property and adjoining areas as undeveloped land, except for a railroad extending through the southwest portion of the subject property and a roadway (currently Haleakala Highway) depicted along the north boundary of the subject property. The earliest available aerial photograph, from 1950, shows the subject property and immediate surroundings as undeveloped land covered with trees and other vegetation.

The 1976 and 1992 aerial photographs show the subject property and adjoining areas to the east, west, and south as sugar cane fields. A circular area on the north-central portion of the subject property is shown with a few structures. This area is the former Maui Pineapple Company (MPC) Seed Treatment Plant. This seed treatment plant also appears in the aerial photographs from 2000 and 2004. The aerial photographs from 2012 and 2013 show the subject property undergoing initial development, with the vegetation removed and earth-moving/infrastructure activities being conducted. A rectangular, fenced-in area is shown on the southwestern portion of the subject property, containing piles of soil. This is where asbestos- and lead-impacted soils were temporarily stored following cleanup of the former MPC Seed Treatment Plant. The 2014 aerial photograph shows the earth-moving/infrastructure activities were completed at the subject property.

According to available records at the County of Maui Real Property Tax Assessment Office, the subject property was formerly part of a larger land parcel (TMK: [2] 3-8-001: Parcel 016) that was owned by Hawaiian Commercial & Sugar Company, Ltd. in 1947. This parcel was deeded to Alexander & Baldwin Inc., the current landowner, in 1962. The current subject parcel (TMK: [2] 3-8-079: Parcel 013) was created in 1992, and portions of the parcel were condemned by the State of Hawaii for the construction of new roadways in 1993-1994. Between 1995 and 2012, several Grant of Easements were issued for the installation of various utilities under the names: Costco Wholesale Corporation, L&M Custom Exchange Ltd., and Maui Electric Company Limited. In 2016, the parcel was subdivided into 32 lots (Lots 17-A-1 through 17-A-32).

#### **4.2 USGS TOPOGRAPHIC MAPS**

Historic topographic maps for the subject property and vicinity were reviewed from Environmental Data Resources, Inc. (EDR) for the years 1922, 1954, 1961, 1983, 1997 and 2013. Topographic maps provided by EDR are included in Appendix C. Key findings noted during this review are as follows:

- The earliest available topographic map, from 1922, depicts the subject property and adjoining areas as undeveloped land, except for a railroad extending through the southwest portion of the subject property and a roadway (currently Haleakala Highway) depicted along the north boundary of the subject property. The nearest structures are a group of three or four buildings depicted approximately 1,000 feet west of the subject property, labeled “Central Power Plant (Well No. 2).”
- The topographic map from 1954 still depicts the subject property as undeveloped land, but the north adjoining area is developed with the current roadways and several small- to medium-size structures. The Central Power Plant is still depicted approximately 1,000 feet west of the subject property, and a roadway labeled “Central Power Plant Road” is shown to the southeast of the subject property.
- The topographic maps from 1961 through 1997 are similar to the 1954 map, except the Central Power Plant to the west of the subject property is no longer labeled. Also, the structures on the north adjoining area change in number and sizes on the different maps.
- No significant changes were observed on the most recent topographic map, dated 2013, except no structures are depicted on this map.

#### **4.3 AERIAL PHOTOGRAPHS**

Aerial photographs, including the subject and adjoining properties, were reviewed from EDR and Google Earth™. Photographs taken in the years 1950, 1976, 1992, 2000, 2004, 2011, 2012, 2013, 2014 and 2016 were reviewed. Aerial photographs provided by EDR are included in Appendix D. Key findings noted during this review are as follows:

- The earliest available aerial photograph, from 1950, shows the subject property and immediate surroundings as undeveloped land covered with trees and other vegetation. A roadway (currently Haleakala Highway) appears along the north boundary of the subject property, and several small- to medium-size structures are shown further north. Areas to the south, southwest, and southeast appear as agricultural land with sugar cane crops.
- The 1976 and 1992 aerial photographs appear similar, showing the subject property and adjoining areas to the east, west, and south as sugar cane fields. A circular area on the north-central portion of the subject property is shown with a few structures. This area is identified as a former agricultural dump site and former Maui Pineapple Company (MPC) seed treatment plant in previous Phase I and Phase II assessment reports (see Sections 4.6.4 and 4.7). In addition, three buildings are shown on the north adjoining area.



- The aerial photographs from 2000 and 2004 appear similar and show the subject property and east, west, and south adjoining areas as fallow agricultural land. The north-central portion of the subject property (former MPC Seed Treatment Plant) appears with a medium-size building and two small structures. Additional buildings are shown on the north and northwest adjoining areas. The 2011 aerial photograph appears similar, except the buildings/structures are no longer shown on the north-central portion of the subject property (former MPC Seed Treatment Plant).
- The aerial photographs from 2012 and 2013 appear similar and show the subject property undergoing initial development, with the vegetation removed and earth-moving/infrastructure activities being conducted. A rectangular, fenced-in area is shown on the southwestern portion of the subject property, containing piles of soil. This is where asbestos- and lead-impacted soils were temporarily stored following cleanup of the former MPC Seed Treatment Plant. The current Lau'o Loop is shown along the west side of the subject property. The 2014 aerial photograph appears similar, except the earth-moving/infrastructure activities appear to be completed at the subject property.
- No significant changes are shown on the 2016 aerial photograph, except the fenced-in area (with soil piles) is no longer shown on the southwest portion of the subject property

#### **4.4 FIRE INSURANCE MAPS**

Fire insurance maps typically depict either the locations of manufacturing and industrial facilities within the city limits or potential hazards existing within individual building structures. In many cases, evidence of environmental concern, such as locations of USTs, can be found by reviewing fire insurance maps.

Ford Canty obtained and reviewed a Sanborn Fire Insurance Maps report for the subject property and adjoining area from EDR. Fire insurance maps were not available for the subject property. The report provided by EDR is included in Appendix E.

#### **4.5 RECORDED LAND TITLE RECORDS**

Information provided to Ford Canty by the User with respect to environmental liens or AULs was discussed in Section 3.0. The ASTM Standard recommends that the User retain a title company or title professional to provide recorded land title records.

As part of this Assessment, Ford Canty attempted to obtain reasonably ascertainable recorded land title records and lien records that are filed under federal, state, tribal, or local law. This work is generally limited to a review of these records for the presence of environmental liens and AULs. Ford Canty reviewed an Environmental Lien and AUL Search report provided by EDR, dated June 7, 2017 and included in Appendix F. Ford Canty's review of the land title records did not reveal any environmental liens. One AUL was found in association with a Declaration of Covenants; however, this AUL is not related to environmental issues at the subject property.

According to available records at the County of Maui Real Property Tax Assessment Office, the subject property is a portion of the land parcel designated as TMK: (2) 3-8-079: Parcel 013. Historical ownership and lease records are summarized in the following table:

| Parcel  | Year      | Property Transaction   |
|---|-----------|--|
| TMK: (2) 3-8-079:<br>Parcel 013<br><br>TMK: (2) 3-8-079:<br>Parcel 013<br>(continued) | 1992      | Earliest available record, indicating this parcel was created from a portion of TMK: (2) 3-8-001: Parcel 016 (see records below). Alexander & Baldwin Inc. is listed as the owner. |
|   | 1993-1994 | Final Orders of Condemnation issued, indicating that portions of the parcel were condemned by the State of Hawaii for the construction of new roadways.                            |
|   | 1995-2012 | Grant of Easements issued for the installation of various utilities under the names: Costco Wholesale Corporation, L&M Custom Exchange Ltd., and Maui Electric Company Limited.    |
|   | 2016      | Parcel was subdivided into 32 lots (Lots 17-A-1 through 17-A-32). Alexander & Baldwin Inc. still listed as the owner.  |
| TMK: (2) 3-8-001:<br>Parcel 016   | 1947      | Earliest available record indicating that the owner was Hawaiian Commercial & Sugar Company, Ltd.  |
|   | 1962      | Parcel deeded to Alexander & Baldwin Inc.  |

#### **4.6 CITY DIRECTORY**

A city directory provides names of former businesses and occupants of the subject property, which may indicate potential environmental concerns associated with the business. A city directory report was provided by EDR, and is included in Appendix G.

The subject property does not currently have an associated street address; therefore, there were no listings for the subject property in the city directory report. In addition, no facilities of environmental concern were noted on the adjoining properties in the city directory report.

##### **4.6.1 Building, Planning, and/or Zoning Departments**

The County of Maui Real Property Tax Assessment website (<http://www.mauipropertytax.com/>) does not include a current zoning designation or permits on file for the subject property. The subject property was formerly zoned as agricultural land and is likely undergoing a change in zoning at the present time so it can be developed for commercial/industrial use.

##### **4.6.2 Fire Department**

The County of Maui Fire Department (MFD) Fire Prevention Bureau (FPB) was contacted on June 5, 2017 to obtain information regarding any fires, complaints, permits, or violations involving hazardous material use, USTs, or ASTs on record for the subject and/or adjoining properties.

As of the date of this report, Ford Canty has not received a response from the MFD, FPB. If later findings change the conclusions and recommendations in this report, Ford Canty will forward an addendum letter to R.D. Olson Development.

#### **4.6.3 Department of Health, Solid and Hazardous Waste Branch**

The HDOH Solid and Hazardous Waste Branch (SHWB) UST and LUST databases were reviewed to obtain information regarding any USTs or LUSTs at the subject property or adjoining properties.

The subject property was not listed in the SHWB databases of USTs and LUSTs.

#### **4.6.4 Department of Health, Hazard Evaluation and Emergency Response Office**

The HDOH Hazard Evaluation and Emergency Response (HEER) Office Release Notification database was reviewed to obtain information regarding any spills or other environmental incidents, which may have occurred at the subject property.

Ford Canty was unable to identify the subject property in the HEER database of reported releases. However, files were requested for the subject property and the HEER Office responded, identifying several documents on file for the former MPC Seed Treatment Plant at the subject property. Significant documents associated with the former seed treatment plant are summarized as follows:

- ***Phase I Environmental Site Assessment, Kahului Seed Site, TMK (2) 3-8-079:013, Kahului, Hawaii, 96753, prepared by AMEC Earth & Environmental, Inc., dated April 2009***

This Phase I ESA report on the former MPC Seed Treatment Plant was conducted for Maui Land and Pineapple Company, Inc. The report states that the site was used from 1986 to 2007 for the treatment of pineapple planting material with pre-plant dip solutions and size grading of the pineapple crown planting material for redistribution to the fields for planting. These processes were discontinued at the end of 2007. During 2008, the site was periodically used to treat pineapple planting material with spent wax-water solution from the offsite MPC fresh fruit processing facility. The report identified potential Recognized Environmental Conditions, as follows:

- 1) Potential contamination from pesticides that have been released onto site soils, paved areas and potentially off-site locations from the former seed treatment operations.
- 2) The presence of an on-site cesspool that was used for the discharge of pesticides that may have impacted subsurface soils and groundwater.
- 3) Petroleum staining of a concrete pad and soils surrounding a former diesel AST.
- 4) Potential contamination related to the possible use of the site as a waste dump prior to 1986.

The report also identified limited (*de minimis*) hydraulic oil staining of site soils and concrete in various areas as an environmental concern, but not considered a potential Recognized Environmental Condition.

AMEC recommended that a Phase II Environmental Site Assessment be performed at the site to characterize potential pesticide contamination of surface soils, subsurface soils and groundwater. Multi-increment soil sampling was recommended in all open soil areas under the overhead storage bins, the vegetated area along the northern boundary, in the vegetated area on the south side of the site near the sump discharge outlet, and in the vegetated area near the northwestern gate. Surface and subsurface soil sampling was also recommended to characterize potential petroleum contamination beneath the stained concrete pad of the former diesel AST. AMEC also recommended confirmation soil sampling in one to two locations following soil removal actions in areas of hydraulic-oil impact. AMEC stated that their recommendations do not address potential contamination related to the possible utilization of the site as a former waste dump prior to 1986.

- ***Limited Phase II Environmental Investigation, Maui Pineapple Company Former Seed Treatment Facility (TMK: [2] 3-8-079: Parcel 013), Kahului, Maui, Hawaii, prepared by Bureau Veritas North America, Inc., dated January 11, 2011 (Bureau Veritas Project No. 17010-010167.00)***

This limited Phase II investigation was conducted to assess potential impacts to the subject property from the former MPC Seed Treatment Plant. This former facility was used by MPC between 1986 and 2007 for the treatment of pineapple seeds prior to replanting. In general, the pineapple seeds were treated by immersion in the treatment chemicals. Prior to 1986, the site may have been used as an agricultural waste dump. The site was formerly used by MPC for processing pineapple seeds (i.e., the “crowns” from harvested pineapples), through the immersion of the seeds in pesticides, insecticides, and fungicides (hereafter referred to as “pesticides”), prior to replanting in agricultural fields.

Bureau Veritas performed multi-increment (MI) soil sampling and analyses at four Decision Units, including: (1) Former Diesel AST; (2) Former Dip Tank 1 Area; (3) Former Dip Tank 2 Overflow Area; (4) Former Bin Storage Area; and (5) Perimeter Area (includes northern and western boundary areas). The samples were analyzed for various chemicals of potential concern (COPC), including: total petroleum hydrocarbons (TPH) as diesel range organics (DRO), Pesticide Screen (including triademefon and diazinon), and Carbamate Pesticides (including benomyl, metalaxyl, and propiconazole). Bureau Veritas also performed discrete soil sampling and analyses of soil and sediment collected from the former cesspool area.

Based on the laboratory results, all of the analytes were detected at concentrations below the respective HDOH Tier 1 Environmental Action Levels (EALs). At the Former Diesel AST Area, TPH DRO was detected at a concentration of 356 mg/kg, which was below the HDOH Tier 1 EAL of 500 mg/kg. Although the detected concentration indicated minimal impacts resulting from the past AST operations, Bureau Veritas recommended the collection of confirmation soil samples to be analyzed for polynuclear aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, and xylene (BTEX) to complete the closure documentation.

Based on the results of this limited Phase II Investigation, additional sampling activities were identified and were assessed in a subsequent, comprehensive Phase II Investigation, summarized below.

- ***Phase II Environmental Investigation, Maui Pineapple Company Former Seed Treatment Facility (TMK: [2] 3-8-079: Parcel 013), Kahului, Maui, Hawaii, prepared by Bureau Veritas, dated June 24, 2011 (Bureau Veritas Project No. 17010-010167.01)***

This Phase II investigation was conducted as a follow-up to Bureau Veritas' limited Phase II investigation summarized above. The scope of work for the investigation included the following:

- (1) Conduct additional site assessment activities in areas previously investigated
- (2) Conduct site assessment activities in areas not previously investigated, but potentially impacted
- (3) Remove the existing cesspool and associated piping
- (4) Assess the soil conditions immediately below the former cesspool following excavation
- (5) Assess the groundwater conditions adjacent to the cesspool at the site.

The site was divided into the following six DUs in order to facilitate the investigation:

- Former Mixing & Storage Area DU
- Former Bin Storage Area DU
- Former Dip Tank 2 Overflow DUs (one inside the fence-line and one outside)
- Former Cesspool Area DU
- Former Diesel AST Area DU
- Former Hydraulic Lifts Area DU

Bureau Veritas collected 10 MI soil samples from the DUs at the site. Several types of MI soil samples were collected including: (1) characterization (from the surface or subsurface of a DU), (2) confirmation (from the bottom of an excavation or along former piping), and (3) waste profile (from a stockpile). Also, a borehole was installed adjacent and approximately downgradient to the former cesspool, which was converted into a temporary monitoring well. Bureau Veritas purged the temporary monitoring well and collected a groundwater sample.

The MI soil samples from the first four areas listed above were analyzed for Pesticide Screen and Carbamate Herbicides. The MI soil sample collected from the Former Diesel AST Area DU was analyzed for BTEX and PAHs. The MI soil sample collected from the Former Hydraulic Lifts Area DU was analyzed for PCBs, TPH as residual range organics (RRO), PAHs, and lead and cadmium. The groundwater sample collected from the well adjacent to the cesspool was analyzed for Pesticide Screen and Carbamate Herbicides.

Based on the laboratory results, all of the analytes were detected at concentrations below the respective HDOH Tier 1 EALs, except for TPH RRO and lead at the Former Hydraulic Lift Areas DU. TPH RRO was detected at a concentration of 2,720 mg/kg, which was above (1) the HDOH Tier 1 EAL of 500 milligrams per kilogram (mg/kg), based on Gross Contamination hazard; (2) the

HDOH EAL of 1,000 mg/kg, based on Leaching Concerns; and (3) the HDOH EAL of 2,300 mg/kg, based on unrestricted land use. However, the TPH RRO concentration was below the HDOH EAL based on commercial/industrial land use. Lead was detected at a concentration of 316 mg/kg, which was above the HDOH Tier 1 EAL of 200 mg/kg (based on Ecological Toxicity). However, the lead concentration was below the HDOH EAL of 400 mg/kg, based on unrestricted land use.

Based on the results, Bureau Veritas concluded that the detected concentrations of TPH RRO, lead and PAHs indicated minor impacts that were very limited in size resulting from past hydraulic lift operations. These minor impacts in soil are considered *de minimis* since: (1) there was a lack of soil staining or odors observed during sample collection activities (i.e., no gross contamination except minor stained concrete); (2) the site is currently zoned commercial/industrial; and (3) future plans for the soil include grading and landfill disposal. Bureau Veritas further concluded that no further investigation appears necessary at this site, and recommended that the minimal impacts documented in the report be used for the soil disposal application process during site redevelopment.

A NFA letter from the HDOH HEER Office was issued for the MPC Seed Treatment Plant on August 26, 2011. A copy of the NFA letter is included in Appendix H.

#### **4.7 PREVIOUS ENVIRONMENTAL REPORTS**

During this site assessment, three previous environmental reports associated with the subject parcel/property were made available. A summary of each report is listed below.

- ***Environmental Site Assessment: Phase I and Phase II Investigations, Lot 17-A, Airport Industrial Subdivision, Haleakala Highway, prepared by Vuich Environmental Consultants, Inc., dated January 9, 2002 (VEC Project #0109-327 and 0109-327-B)***

This report, provided by R.D. Olson Development, was prepared for Costco Wholesale and assessed approximately two acres of land formerly occupied by the Hawaiian Commercial & Sugar Company, Ltd. Central Power Plant (CPP), located approximately 1,000 feet west of the subject property.

The report identifies several recognized environmental conditions at the CPP site, including: (1) asbestos-containing materials (ACM) in earthen and waste debris surrounding a water AST; (2) lead-based paint (LBP) and lead-contaminated soils; (3) potential arsenic-containing materials; (4) smokestack and ash-like material; (5) potential PCB contamination; (6) potential groundwater contamination; (7) potential below-grade structures of concern; and (8) former fuel storage tanks.

Although several recognized environmental conditions were identified in this report, and chemical impacts were identified during the Phase II investigations, the CPP site is located hydrologically cross-gradient at a significant distance (approximately 1,000 feet) from the subject property. Therefore, the impacts to the CPP site have a low potential to impact the subject property.

- ***Phase II Environmental Site Assessment, Former Central Power Plant Facility and Adjacent Lands, Kahului, Maui, Hawaii, prepared by EnviroServices & Training Center, LLC (EnviroServices), dated May, 2007 (ETC Project No. 06-2045)***

EnviroServices performed a Phase II ESA of the former CPP facility and neighboring agricultural lands to assess for the presence of COPC associated with historical use. The investigation included areas of the CPP facility, 33 acres of agricultural land on TMK No: (2) 3-8-079: Parcel 013, and 141 acres of agricultural land on TMK No: (2) 3-8-001: Parcel 002, (2) 3-8-006: Parcels 004 and 019. The subject property includes the eastern portion of the agricultural fields on Parcel 013.

EnviroServices indicated that at the time of the investigation, the CPP facility was occupied by an agricultural research company, a surfboard manufacturing/repair shop, a trucking company, and a pineapple seed treatment plant (Maui Pineapple Company [MPC]). Though the seed treatment plant is described as part of the CPP facility, the figures in the investigation report depict it east of the CPP facility, in the area of the subject property. EnviroServices also stated that the portion of the CPP facility occupied by MPC is not addressed as part of this investigation, and that it will be assessed at a later date when they cease operations.

As part of the investigation, EnviroServices performed the following:

- Discrete sampling of surface/near-surface soils and concrete at the former electrical substation and transformer storage yard (at the CPP facility) for the presence of polychlorinated biphenyls (PCB). A total of 91 soil and concrete samples were collected, and analytical results indicated PCB contamination in the southwestern portion of the substation and yard, as well as one of the six concrete pads sampled. This sampling area is located more than 1,000 feet west of the subject property.
- Discrete sampling of surface/near-surface soils and concrete at the location of Maui Well No. 5, located on Parcel 002, to evaluate for possible PCB contamination from former oil-filled electrical equipment. A total of 36 soil and concrete samples were collected, and analytical results indicated that two concrete samples and five soil samples at PCB concentrations exceeding the HDOH Tier 1 EAL. This sampling area is located approximately ½ mile southwest of the subject property.
- Discrete soil sampling of surface/near-surface soils throughout the CPP facility to assess for the possible presence of lead due to the use of LBP on the walls of buildings. A total of 131 soil samples were collected, and analytical results indicated the presence of lead exceeding the HDOH Tier 1 EAL in areas surrounding the structures. This sampling area is located at least 1,000 feet west of the subject property.
- Discrete soil sampling of surface soils throughout the agricultural lands to assess for the presence of arsenic from former pesticide use. A total of 40 soil samples were collected throughout the 174 acres of land, including two samples that appear to be from within



the area of the subject property. Analytical results did not indicate the presence of arsenic above the HDOH Tier 1 EAL in any of the samples collected.

- Exploratory trenching and discrete soil sampling of surface soils to assess for the presence of asbestos debris in the CPP facility. Analytical results did indicate the presence of asbestos in several samples. This sampling area is located at least 1,000 feet west of the subject property.
- Extensive soil and groundwater sampling at the CPP facility to assess for petroleum in subsurface soils at the former power plant/diesel plant, for petroleum in soil from former ASTs, and for herbicide contamination in groundwater. Based on analytical results, there were no petroleum or herbicide-related contaminants in the groundwater above the HDOH Tier 1 EALs. Arsenic, chromium, and petroleum were detected in various locations of the CPP facility. This sampling area is located at least 1,000 feet west of the subject property.

The majority of the investigation scope described above pertains to the CPP facility, which is located approximately 1,000 feet west and hydrologically cross-gradient to the subject property. However, the portion of the investigation related to site-wide arsenic testing of agricultural fields included the area of the subject property. EnviroServices collected two discrete soil samples from the area of the subject property, and analysis of these samples did not indicate the presence of arsenic above the laboratory reporting limits.

Based on review of the report, Ford Canty has the following comments:

- EnviroServices used the State of New Jersey's Historic Pesticide Contamination Task Forces' guidelines to develop a discrete soil sampling strategy for the agricultural fields, which indicates that one discrete soil sample should be collected for every five acres of land. However, according to the current HDOH Technical Guidance Manual (TGM), established in 2009, the multi-increment sampling approach is recommended for such an investigation.
- Additionally, for former sugar cane fields, the TGM recommends analysis for organochlorine pesticides, in addition to arsenic.
- The MPC pineapple seed treatment plant, which was formerly located on the north-central portion of the subject property, was not assessed as part of this investigation. However, a Remedial Action Clearance Report provided by A&B outlines the removal and remediation of the MPC pineapple seed treatment plant, and is summarized below.



- ***DRAFT Letter Report - Remedial Action Clearance Report, Former Kahului Seed Plant, Kahului, Maui, Hawaii, TMK (2) 3-8-79: Parcel 13, Lots 16, 17, 18, 19, and 20 only, prepared by EnviroServices, dated May 31, 2017 (ETC Project No. 11-2016)***

This letter report documents the removal and clearance activities performed at the former MPC Seed Treatment Plant located on the north-central portion of the subject property. The seed treatment plant operated between 1986 and 2007, and it was removed from the subject property in 2011. Prior to 1986, this area was reportedly used as an agricultural dump site.

The background presented in this report indicates that in December 2011 EnviroServices and A&B conducted a limited subsurface investigation at the site, including the excavation of nine exploratory trenches which identified a top layer of broken glass, scrap metal, and other wastes including asbestos-containing materials (ACM). Based on the discovery of ACM in the near-surface soils, the asbestos abatement company, Unitek Insulation LLC, removed and properly disposed of the materials, and confirmation sampling and analysis was conducted at the site. Additional ACM was identified, so the area was raked and then excavated until confirmation sampling and analysis showed that no remaining ACM were present. The excavated ACM/soil materials were temporarily stored in a fenced area located on the southern portion of the subject property.

A layer of burned material was discovered beneath the top layer of soil and waste materials/ACM. Samples collected from the burn layer were analyzed for organochlorine pesticides, dioxin, polycyclic aromatic hydrocarbons, arsenic, and lead. Based on the laboratory results, only lead was identified at concentrations above the established Tier 1 EAL. Asbestos- and lead-impacted soils across the site were excavated in various stages and temporarily stored in the fenced area on the southern portion of the subject property. The cleanup continued until multi-increment confirmation soil sampling and analysis showed that asbestos concentrations were below the regulatory level of 1% asbestos, and lead concentrations were below the Tier 1 EAL of 200 milligrams per kilogram (mg/kg).

According to Mr. O'Keefe, A&B recently submitted this draft letter report to the HDOH HEER Office for review, in anticipation of a "No Further Action" determination. A&B received the NFA letter from the HDOH HEER Office on June 8, 2017. The NFA letter refers to this release site as "A&B Properties, Inc., Suspected Former Agriculture Deep Soil Dump." A copy of the NFA letter is included in Appendix H.

## **5.0 STANDARD FEDERAL, STATE, AND TRIBAL ENVIRONMENTAL RECORD SOURCES**

Available government database information prepared by EDR was reviewed to evaluate both the subject property and any listed sites within ASTM-recommended search distances. Federal, state, tribal, and local databases reviewed are included in Appendix I.

Unmappable sites were also listed in the EDR report. Unmappable sites are sites that cannot be plotted with confidence, but can be located by zip code or city name. In general, a site cannot be geocoded due to inaccurate or missing information in the EDR provided by its applicable agency. Cross-referencing addresses and site names, as well as a visual reconnaissance of surrounding properties, has been completed for the unmappable facility sites in the database report.

### **SUBJECT PROPERTY**

The subject property is listed in the EDR report in the Orphan Summary. The former MPC Seed Treatment Plant is listed as a State Hazardous Waste Site (SHWS); however, no additional information is provided regarding this listing. Ford Canty reviewed several documents associated with this SHWS which are summarized above in Sections 4.6.4 and 4.7. .

### **OFFSITE FACILITIES**

A total of 40 listings were identified within the specified search distances from the subject property, including: one Superfund Enterprise Management System (SEMS) site; one Resource Conservation and Recovery Act (RCRA) Small Quantity Generator (SQG) site; one RCRA Conditionally Exempt Small Quantity Generator (CESQG) site; nine SHWS sites; 13 LUST sites; nine UST sites; one Voluntary Response Program (VCP) site; three RCRA Non Generator (NonGen) sites; one Formerly Used Defense Sites (FUDS) site; and one EDR Exclusive Historic Gas Stations (EDR Hist Auto) site.

Nearby sites with the potential to impact the subject property were evaluated in detail and are listed as follows:

| Facility/Address  | Database      | Orientation from Subject Property (approximate) | Environmental Concern   |
|---|---------------|---|---|
| Hawaii Air National Guard –<br>292 CBCS (PMID OGG0061)<br>75 Kuleana Street, Bldg. 502,<br>Tank 502-1, 502-2, 502-3 | LUST, UST     | 371 feet north-northwest                        | No; three LUST sites are listed as “Site Cleanup Completed, No Further Action (NFA)” and three USTs listed as “Permanently Out of Use.” The site is too distant and downgradient to reasonably affect the subject property.                             |
| Pacific Auto Maintenance & Repair<br>603 Haleakala Highway  | EDR Hist Auto | 412 feet west-northwest                         | No; facility listed as Pacific Auto Maintenance & Repair from 1986 to 1993; however, there are no releases or other listings in the HDOH databases for this site. The site is too distant and cross-gradient to reasonably affect the subject property. |
| State of Hawaii Department of Transportation<br>650 Palapala Drive  | UST, RCRA-SQG | 620 feet west-northwest                         | No; three USTs listed as “Permanently Out of Use” with no reported releases, and no violations listed for the RCRA-SQG. The site is too distant and downgradient to reasonably affect the subject property.   |
| Former Central Power Plant<br>590 Haleakala Highway   | RCRA- NonGen  | 647 feet west                                   | No; No violations listed for the RCRA-NonGen, and site is too distant and cross-gradient to reasonably affect the subject property. Additional information on this former power plant is included above in Section 4.7.                                 |
| David Pico Cesspool Digging<br>Old Haleakala Highway  | LUST, UST     | 1,139 feet west-northwest                       | No; one LUST site is listed as “Site Cleanup Completed, (NFA)” and one UST listed as “Permanently Out of Use.” The site is too distant and downgradient to reasonably affect the subject property.  |

| Facility/Address  | Database  | Orientation from Subject Property (approximate) | Environmental Concern  |
|---|-----------|---|--|
| Robert's Hawaii (PMID OGG002105)<br>747 Kaonawai Street (Kahului Airport) | LUST, UST | 1,672 feet north                                | No; one LUST site is listed as "Site Cleanup Completed, (NFA)" and three USTs listed as "Permanently Out of Use." The site is too distant and downgradient to reasonably affect the subject property.  |
| Costco #119 Maui Addition Lot 21A<br>540 Haleakala Highway                | SHWS, VCP |   | No; SHWS listed as "NFA," "Hazard Present," "Response Complete," "Controls Required to Manage Contamination," and "Letter of Completion Pursuant to VCP Agreement." However, the site is too distant and cross-gradient to reasonably affect the subject property. Additional information on this former power plant is included above in Section 4.7. |

The other listed sites are not expected to present an environmental concern to the subject property because they require no further action, or based Ford Canty's review, are too distant and/or topographically down-gradient or cross-gradient relative to the subject property to reasonably affect it.

## **6.0     SITE RECONNAISSANCE**

### **6.1     GENERAL OBSERVATIONS**

The subject property was assessed on foot. At the time of the walkthrough on June 1, 2017, the subject property appeared as an irregular-shaped, undeveloped area covered with light to moderate vegetation. Haleakala Highway was observed along the northern boundary, Airport Road was observed to the south-southeast, and Lau'o Loop was observed along the west side of the subject property. The western half of the subject property was more heavily vegetated than the eastern half, and several wooden survey stakes were observed throughout the area.

Recently installed infrastructure was observed at the perimeter of the subject property, including underground electrical lines, associated transformer/gear box/meter, water lines/valves/meters, sewer cleanouts, and an irrigation system. Most of these utilities were observed along the western boundary of the subject property, but some utilities were observed along the northern boundary. A solid, hard plastic fence was observed along the southern boundary of the subject property.

No evidence of USTs, in-ground hydraulic lifts, or other subsurface structures of environmental concern were observed, and no ASTs, petroleum/chemical drums, or other hazardous substances were noted on the subject property. In addition, no significant surface staining or other evidence of releases was observed on the subject property during Ford Canty's site visit.

### **6.2     HAZARDOUS SUBSTANCE AND PETROLEUM PRODUCTS (OTHER THAN UST/AST)**

The subject property was assessed for signs of use, storage, or disposal of hazardous substances and/or petroleum products (other than those stored in USTs/ASTs, see Section 6.3 below). Property uses where these types of materials are typically found include: vehicle service bays, vehicle repair operations, auto body shops and related activities (e.g., solvents, cleaners, degreasers, lubricants, paints, antifreeze); dry cleaners, rug cleaners, steam laundries, Laundromats with self-serve dry clean machines (e.g., chlorinated solvents, Naphtha, mineral spirits); manufacturing operations, plating facilities, and other industrial/commercial operations. For purposes of this assessment, this does not include use/storage of small quantities of typical janitorial and maintenance materials (if any), unless considered relevant. Hazardous Wastes (if any) are further discussed in Section 6.4 below.

No visual evidence was observed, and no information was obtained to indicate the current and/or potential past presence of the above noted items, except for the former MPC Seed Treatment Plant on the north-central portion of the subject property. Information on this former facility is included in Sections 4.6.4 and 4.7. No evidence of the former seed treatment plant was observed during Ford Canty's recent site visit.

## **6.3 STORAGE TANKS**

### **6.3.1 Underground Storage Tanks**

The subject property was assessed for evidence of USTs. The assessment consisted of noting evidence (e.g., fill ports, vent piping, dispensing equipment, pavement variations) indicating that USTs are currently or were previously located on the subject property.

No visual evidence was observed, and no other information was obtained, to indicate the current and/or potential past presence of USTs at the subject property.

### **6.3.2 Aboveground Storage Tanks**

The subject property was assessed for evidence of ASTs. The assessment included noting evidence (e.g., concrete foundations or saddles, pedestals or steel support structures) indicating that ASTs were previously located on the subject property.

No visual evidence was observed, and no other information was obtained, to indicate the current and/or potential past presence of ASTs at the subject property, except for the MPC pineapple seed treatment plant that was formerly located on the north-central portion of the subject parcel.

### **6.3.3 In-Ground Hydraulic Equipment**

The subject property was assessed for evidence of in-ground hydraulic equipment (e.g., hydraulic elevators or lifts that have hydraulic fluid-containing reservoirs or jacks below ground surface) or other types of hydraulic equipment. Hydraulic fluid in equipment installed in 1978 or before may contain PCBs.

No visual evidence was observed, and no other information was obtained, to indicate the current and/or potential past presence of in-ground hydraulic equipment at the subject property.

## **6.4 WASTES**

The subject property was assessed for evidence suggesting the generation or disposal of “wastes” onsite (e.g., drums, dumpsters, debris piles). Observations suggesting the presence of wastes onsite are presented below. This includes observations/information suggesting 1) the placement of significant quantities of “fill” materials (from an unknown or potentially contaminated source); or 2) the “disposal” of wastes/debris/trash onsite.

No evidence of wastes was observed at the subject property.

## **6.5 POLYCHLORINATED BIPHENYLS**

The subject property was assessed for the presence of liquid-cooled electrical units (e.g., transformers) and major sources of hydraulic fluid (e.g., elevators, lifts). Such units are notable because they may be

potential PCB sources. Potential PCB-containing in-ground hydraulic equipment (if any) was discussed in Section 6.3.3.

No evidence of suspect PCB units was observed on the subject property at the time of Ford Canty's site visit, except for a pad-mounted Maui Electric Company (MECO) transformer located at the northern boundary of the subject property, alongside Haleakala Highway. This transformer appeared fairly new and in good condition, and was labeled with the MECO identification number 19042.

Ford Canty contacted MECO's Environmental Department on June 6, 2017 to request information on the PCB content of the transformer. Ford Canty received an e-mail response from MECO on June 6, 2017 indicating that the transformer was purchased by MECO in 2013 and it does not contain PCBs.

## **6.6 WASTE WATER AND STORM WATER DISCHARGE**

The subject property was assessed for evidence of waste or process water discharges (if any) and storm water discharges. For purposes of this assessment, this generally includes discharges other than domestic waste water from sinks and toilets. In addition, properly functioning septic systems used strictly for residential and most commercial operations generally do not represent a cause for concern. Exceptions can include those instances where hazardous substances/petroleum products may be discharged through the system (e.g., spent solvents at an auto repair facility).

No evidence of waste water or waste water discharge was observed at the subject property.

The storm water infiltrates the undeveloped grounds of the subject property. Storm water runoff from the subject property flows via sheet flow into the surrounding roadways and associated storm drains, which discharge to the Pacific Ocean located approximately ¾ mile north of the subject property.

## **6.7 WELLS**

The subject property was assessed for evidence of wells (e.g., dry, irrigation, injection, abandoned, monitor, supply).

No evidence of wells was observed on the subject property during Ford Canty's site visit.

According to the EDR report, the water well closest to the subject property is identified as Well ID No. 6-5326-002. The well is named "Kahului" and is located approximately 400 feet north of the subject property. It is listed as an Irrigation Well. This well was drilled to a depth of 50 feet in 1956 and is owned by Valley Isle Produce.

## **7.0 INTERVIEWS**

The purpose of the interview(s) was to obtain additional information related to: 1) the current and past operations at the subject and/or adjoining properties that may result in recognized environmental conditions; and 2) the presence of Proceedings Involving the Property (e.g., litigation, regulatory agency rulings, violations). Ford Canty interviewed the following personnel:

Ford Canty interviewed Mr. Sean O’Keefe, Director of Environmental Affairs with Alexander & Baldwin, Inc. (A&B), owner of the subject property, on June 7, 2017.

- Mr. O’Keefe has been associated with the subject property for many years and was forthcoming with information for which he had knowledge. According to Mr. O’Keefe, the north-central portion of the subject property was formerly occupied by the MPC Seed Treatment Plant, from the early 1980s until the mid-2000s, and the remainder of the subject property was formerly used for sugar cane cultivation. The MPC Seed Treatment Plant was removed around 2011 and subsequent environmental testing and remediation was conducted by MPC. Mr. O’Keefe stated that a “No Further Action” determination was issued by the HDOH, HEER Office for the MPC Seed Treatment Plant.
- Mr. O’Keefe further stated that the MPC Seed Treatment Plant was built on an elevated mound covered with asphalt pavement. When the structures and pavement were removed, a layer of broken glass mixed with asbestos-containing materials (ACM) was discovered underneath. The asbestos abatement company, Unitek, removed and properly disposed of the materials, and confirmation sampling and analysis was conducted at the site. Additional ACM was identified, so the area was raked and then excavated until confirmation sampling and analysis showed that no remaining ACM were present. The excavated ACM/soil materials were temporarily stored in a fenced area located on the southern portion of the subject property. Mr. O’Keefe also stated that the MPC Seed Treatment Plant formerly included a cesspool that was properly closed.
- Mr. O’Keefe further stated that the subject property formerly included an agricultural dump site (with land clearing debris) that was cleaned up and assessed for various chemicals of concern, including organochlorines, dioxin, polycyclic aromatic hydrocarbons, arsenic, and lead. Based on the laboratory results, only lead was identified in concentrations above the established Tier 1 Action Level (AL). Lead-impacted soil was removed until confirmation sampling and analysis showed lead concentrations were below the Tier 1 AL. According to Mr. O’Keefe, A&B recently submitted a draft letter report (Remedial Action Clearance Report), dated May 31, 2017, to the HDOH HEER Office for review, in anticipation of a “No Further Action” determination. This letter report is summarized above in Section 4.7.
- Mr. O’Keefe was also asked if he had any information regarding USTs, reported chemical spills or releases, and/or government violation, hazardous materials storage associated with the subject property. He was aware that the MPC Seed Treatment Plant formerly included a diesel AST that was removed, but he was unaware of any USTs, chemical spills or releases, or other environmental issues at the subject property. Mr. O’Keefe was not aware of any government



violations associated with the subject property. Mr. O'Keefe was asked the following and responded to the best of his knowledge:

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property. Yes ☐ No ☒

Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property. Yes ☐ No ☒

Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products. Yes ☐ No ☒

Ford Canty also interviewed Mr. John Peard, Remediation Project Manager with the HDOH, HEER Office, by telephone on June 16, 2017. Mr. Peard provided information on the former MPC Seed Treatment Plant and agricultural dump site at the subject property. According to Mr. Peard, the seed treatment plant and dump site were treated as two separate release sites by the HDOH even though they were located on the same portion of the subject property. He further stated that both release sites received NFA status from the HDOH, HEER Office, and he provided access to the HEER files for Ford Canty to review (summarized above in Section 4.6.4).

## **8.0 TIER 1 VAPOR ENCROACHMENT SCREEN (VES)**

The VES was conducted in accordance with ASTM E2600-10, Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions. A VES is often conducted in conjunction with a Phase I Assessment as much of the information utilized is common to both processes. The goal of a VES is to identify if a potential vapor encroachment condition (VEC) may exist at a subject property. A VEC is defined as the presence or likely presence of chemicals of concern (COC) vapors in the subsurface of a subject property caused by the release of vapors from contaminated soil and/or groundwater either on or near the subject property.

A Tier 1 VES includes obtaining and reviewing information on the subject property and adjoining properties. This includes information on the following: user provided information; physical setting information; existing/planned use of the subject property; types of structures/existing or planned on the subject property; surrounding area description; selected Federal, State, Local and Tribal environmental records sources; historical records related to the past use of the subject property and adjoining properties within the area of concern (AOC), 1/3 to 1/10 mile; the likely COC; and the presence of significant natural or man-made conduits that can serve as preferential pathways, such as utility corridors, sewers, storm drains, etc. (Note: These “preferential pathways” may provide for a more direct route for vapors to encroach upon the subject property).

An evaluation of information for the Tier 1 VES includes two tests: 1) a search distance test to evaluate the proximity of the target property to known or suspected “contaminated properties”, and 2) a chemicals of concern test to determine the likely presence of COCs at the subject property or properties within the AOC. In evaluating the data, the distance and proximity to potentially contaminated off-site properties must be evaluated, including whether they are up-, cross-, or down-gradient relative to the subject property. A brief summary of relevant information considered for the Tier 1 screening follows:

|                        |  |
|------------------------|--|
| Use of Property:       | Undeveloped land, currently cleared and graded with utilities already in place at the perimeter    |
| Soil Characteristics:  | Molokai silty clay loam, with 3 to 7 percent slopes (USDA Soil Conservation Service, 2014)         |
| Depth to Groundwater:  | Approximately 40 to 45 feet (USGS, Paia Quadrangle, 2013)  |
| Preferential Pathways: | Underground utilities were recently installed on and around the perimeter of the subject property. |

The VES process has been completed in accordance with the Standard. The former MPC Seed Treatment Plant and former agricultural dump site at the subject property are evidence of past VECs; however, based on Phase II investigations and remediation conducted at the subject property (see Sections 4.6.4 and 4.7), they are no longer considered VECs at the subject property.

## **9.0 NON-ASTM ISSUES**

Non-ASTM issues include potential environmental concerns that are not considered recognized environmental conditions but may be considered business environmental risks. The non-ASTM issues covered in this Phase I ESA report include suspect ACM, radon gas, suspect LBP, and wetlands.

### **9.1 ASBESTOS-CONTAINING MATERIALS (ACM)**

The subject property was inspected for the presence of suspect ACM such as ceiling and roofing materials, and presumed asbestos-containing materials (PACM) as defined by the Occupational Safety and Health Administration (OSHA) (29 CFR 1926.1101), which includes thermal system insulation and surfacing material, if building construction was prior to 1981. Asphalt and vinyl flooring material installed prior to 1980 must also be considered asbestos-containing unless proven otherwise.

No buildings or other structures with suspect ACM were observed on the subject property at the time of the site visit.

It should be noted that the north-central portion of the subject property was formerly used as an agricultural waste dump prior to 1986, when it was developed with the former MPC seed treatment plant. Following the removal, investigation, and remediation of the seed treatment plant in 2011, this area was further investigated and buried ACM was discovered. Following excavation and removal of the ACM, and confirmation soil sampling and analysis, the area was given NFA status by the HDOH, HEER Office. Previous environmental reports on the investigation and remediation activities were reviewed by Ford Canty and are summarized above in Section 4.7.

### **9.2 RADON**

Radon is a naturally occurring radioactive gas formed by the decay of uranium in bedrock and soil. The potential adverse health effects associated with radon gas depend on various factors, such as the concentration of the gas and duration of exposure. The concentration of radon gas in a building depends on subsurface soil conditions, the integrity of the building's foundation, and the building's ventilation system.

Due to the relatively young geological age (less than five million years) of the southernmost islands of the Hawaiian archipelago, radon gas does not occur at elevated levels in native soils.

### **9.3 LEAD-BASED PAINT (LBP)**

Lead-based paint was commonly used for corrosion protection in the 1960s, and in prime, intermediate, and finish coats well into the 1970s. Regulations specifically addressing LBP include Housing and Urban Development (HUD) (1995) guidelines and the Consumer Product Safety Act (1977). These regulations define LBP as containing 0.5% lead by weight (5,000 ppm), and 0.009% lead by weight (90 ppm), respectively, for housing and consumer products. There is no industrial definition. There are specific testing methods for sampling and analyzing lead in paint.

No buildings or other structures with suspect LBP were observed on the subject property at the time of the site visit.

#### **9.4 WETLANDS**

The subject property was inspected for the presence of sensitive ecological areas by noting environmental indicators (e.g., wetlands vegetation, floodplains) located on or immediately adjoining the subject property.

No sensitive ecological areas were observed on the subject property. The USGS 7.5-Minute Topographic Map for the Paia Quadrangle (2013), which includes the subject and adjoining properties, shows the nearest wetland as the Kanaha Pond Wildlife Sanctuary, located approximately 1,500 feet northwest of the subject property. The United States Fish and Wildlife Service (USFWS) National Wetland Map describes this area as: System "Palustrine," Class "Forested;" Subclass "Broad-Leaved Evergreen;" and Water Regime "Seasonally Flooded."

The Federal Emergency Management Agency Flood Insurance Rate Map (FEMA/FIRM) was reviewed to determine if the subject property is located in a flood hazard area. According to the FEMA/FIRM index map (FEMA/FIRM Panel No. 1500030411E, dated September 25, 2009), the subject property is located within Flood Zone X, which denotes areas determined to be outside the 0.2% annual chance floodplain.

## **10.0 FINDINGS, OPINIONS, AND CONCLUSIONS**

Ford Canty has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 for the 6.315-acre property located on a portion of Tax Map Key number (TMK): (2) 3-8-079: Parcel 013 (Lots 17-A-14, -15, -16, -17, and -18) in Kahului, Maui, Hawaii (the “subject property”). Any exceptions to, or deletions from, this practice are described in Sections 1.2 and 1.3 of this report.

This Assessment has revealed no evidence of current recognized environmental conditions, as defined by ASTM, in connection with the subject property.

This Assessment has revealed the following evidence of historical recognized environmental conditions, as defined by ASTM, in connection with the subject property:

- **Former MPC Seed Treatment Plant** – Phase II environmental investigations were conducted in 2007 and 2011 at the former MPC Seed Treatment Plant, located on the north-central portion of the subject property. Suspect areas investigated included: a former diesel AST, two former dip tank/overflow areas, a former bin storage area, the perimeter area, a cesspool area, and a former hydraulic lifts area. Soil samples were collected and analyzed for various COPC, including: TPH-DRO, Pesticide Screen (including triademefon and diazinon), and Carbamate Pesticides (including benomyl, metalaxyl, and propiconazole), PAHs, BTEX, PCBs, TPH-RRO, lead, and cadmium.

Based on the laboratory results, all of the COPC were detected at concentrations below the respective HDOH Tier 1 EALs based on commercial/industrial land use or unrestricted land use. The HDOH, HEER Office subsequently issued a “NFA” determination for the MPC Seed Treatment Plant on August 26, 2011.

This finding is considered a historical recognized environmental condition because there is evidence of past releases of COPC at the former MPC Seed Treatment Plant on the subject property. However, based on the results of Phase II investigations, the site received a NFA determination from the HDOH, HEER Office. Therefore, this finding is not considered a current recognized environmental condition.

- **Former Agricultural Dump Site** – The north-central portion of the subject property was also identified as a former agricultural dump site, prior to its use as the MPC Seed Treatment Plant. Following the removal of the seed treatment plant and associated Phase II investigations in 2011, subsurface investigation of the former agricultural dump site was conducted, including the excavation of exploratory trenches which identified a top layer of broken glass, scrap metal, and other wastes including ACM. A layer of burned material was discovered beneath this top layer of waste materials/ACM. Samples collected from the burn layer were analyzed for organochlorine pesticides, dioxin, PAHs, arsenic, and lead.

Based on the laboratory results, only lead was identified at concentrations above the established Tier 1 EAL. Asbestos- and lead-impacted soils across the site were excavated in various stages, until confirmation soil sampling and analysis showed that asbestos and lead

concentrations were below the respective regulatory levels of 1% asbestos and 200 milligrams mg/kg lead. The HDOH, HEER Office subsequently issued a "NFA" determination for the former agricultural dump site on June 8, 2017.

This finding is considered a historical recognized environmental condition because there is evidence of past releases of ACM and lead at the former agricultural dump site on the subject property. However, following remediation activities and confirmation soil testing, the site received a NFA determination from the HDOH, HEER Office. Therefore, this finding is not considered a current recognized environmental condition. Although no further action is recommended, future excavation activities should be monitored for evidence of potential buried waste materials.

It should be noted that review of historical aerial photographs and tax assessment records indicate that the subject property was formerly used as agricultural land to grow sugar cane, from at least 1947 until the 1990s. Use of agricultural chemicals such as herbicides and pesticides on cane fields may be an environmental concern, and the HDOH recommends that sites where pesticides were regularly applied be evaluated for residual contamination prior to re-development.

## **11.0 SIGNATURES**

**Certification of both  
Environmental Professionals  
signing below:**

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



---

Tim Swartz  
Senior Project Manager

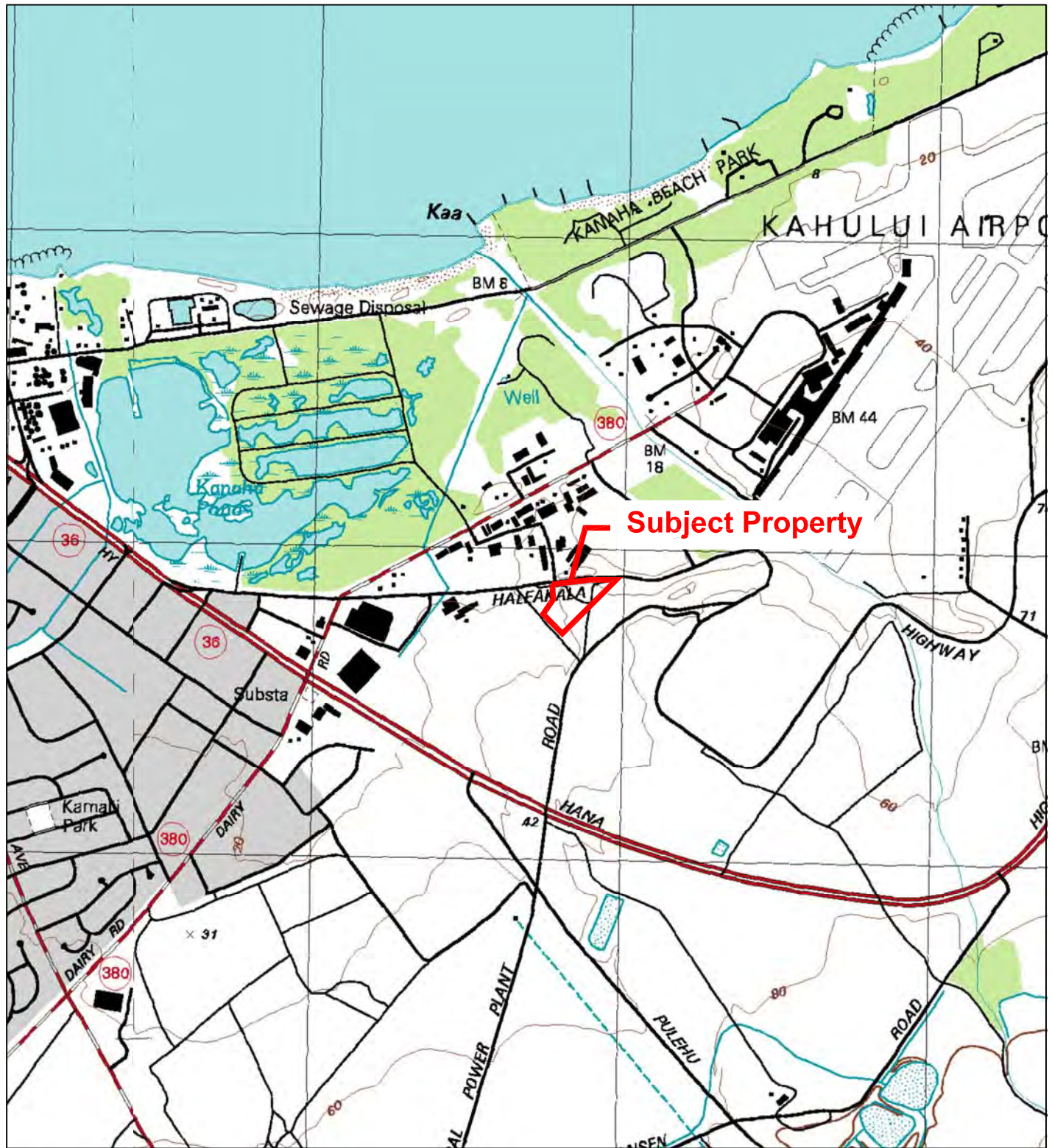


---

Daniel P. Ford P.G.  
Principal Geologist

## FIGURES





USGS Topographic Map  
7.5-Minute Series  
Kahului & Paia Quadrangle  
1998

## Subject Property Location Map

**FORD CANTY & ASSOCIATES, INC.**  
ENVIRONMENTAL SCIENTISTS & ENGINEERS

Job Number: 17-1209

Created by: DG

Date: 06/09/17

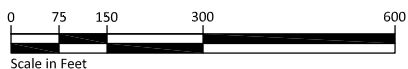
Reviewed By: TS

Project: 6.315-Acre Property  
TMK: (2) 3-8-079: Parcel 013 (Lots 17-A-14, -15, -16, -17, and -18)  
Kahului, Maui, Hawaii

Client: R.D. Olson Development

Figure

1





|  |  |  |  |                    |
|--|--|--|--|--------------------|
| <div>FORD CANTY &amp; ASSOCIATES, INC.</div> <div>ENVIRONMENTAL SCIENTISTS &amp; ENGINEERS</div> |  | Subject Property Vicinity Map  |  | Figure<br><b>2</b> |
| Job Number: 17-1208  |  | Project: 6.315-Acre Property<br>TMK: (2) 3-8-079: Parcel 013 (Lots 17-A-14, -15, -16, -17, and -18)<br>Kahului, Maui, Hawaii |  |                    |
| Created by: DG   |  |  |  |                    |
| Date: 06/08/17   |  | Client: R.D. Olson Development   |  |                    |
| Reviewed By: TS  |  |  |  |                    |

## PHOTOGRAPHS





|   |   |                              |
|---|---|------------------------------|
| <b>Client:</b>  | R.D. Olson Development  | <b>Project No.:</b> 17-11209 |
| <b>Site Name:</b>   | 6.315-Acre Property, TMK: (2) 3-8-079: 013 (Portion)<br>Kahului, Maui, Hawaii | <b>Date:</b> June 1, 2017    |
|   |   |                              |
| Overview of subject property, from northwest corner looking east (note three round water utility access caps in foreground of photograph) |   | PHOTO<br>1                   |
|   |   |                              |
| Southwestern portion of subject property, from northwest corner looking south   |   | PHOTO<br>2                   |



|  |   |                              |
|--|---|------------------------------|
| <b>Client:</b>   | R.D. Olson Development  | <b>Project No.:</b> 17-11209 |
| <b>Site Name:</b>  | 6.315-Acre Property, TMK: (2) 3-8-079: 013 (Portion)<br>Kahului, Maui, Hawaii | <b>Date:</b> June 1, 2017    |
|    |   |                              |
|  |   |                              |
| In-ground utilities at western boundary of subject property, alongside Lau'o Loop, including water, Maui Electric Company (MECO), and cable television utilities |   | PHOTO<br>3                   |
|    |   |                              |
| MECO meter box (right) and Rain Bird irrigation system box (left) at western boundary of subject property, alongside Lau'o Loop                                  |   | PHOTO<br>4                   |



|   |   |                              |
|---|---|------------------------------|
| <b>Client:</b>  | R.D. Olson Development  | <b>Project No.:</b> 17-11209 |
| <b>Site Name:</b>   | 6.315-Acre Property, TMK: (2) 3-8-079: 013 (Portion)<br>Kahului, Maui, Hawaii | <b>Date:</b> June 1, 2017    |
|                                     |   |                              |
| Landscaped easement with sidewalk at northern boundary of subject property, alongside Haleakala Highway, looking east |   | PHOTO<br>5                   |
|                                   |   |                              |
| South-southeast edge of subject property, showing fence along boundary, looking east-northeast                        |   | PHOTO<br>6                   |

|  |   |                     |              |
|--|---|---------------------|--------------|
| <b>Client:</b>   | R.D. Olson Development  | <b>Project No.:</b> | 17-11209     |
| <b>Site Name:</b>  | 6.315-Acre Property, TMK: (2) 3-8-079: 013 (Portion)<br>Kahului, Maui, Hawaii | <b>Date:</b>        | June 1, 2017 |
|    |   |                     |              |
| Eastern portion of subject property, looking east                                    |   |                     | PHOTO<br>7   |
|  |   |                     |              |
| Lau'o Loop and undeveloped land on west adjoining property, looking west             |   |                     | PHOTO<br>8   |



|   |   |                              |
|---|---|------------------------------|
| <b>Client:</b>  | R.D. Olson Development  | <b>Project No.:</b> 17-11209 |
| <b>Site Name:</b>   | 6.315-Acre Property, TMK: (2) 3-8-079: 013 (Portion)<br>Kahului, Maui, Hawaii | <b>Date:</b> June 1, 2017    |
|   |   |                              |
| Haleakala Highway and State of Hawaii Department of Agriculture baseyard on northwest adjoining property, looking northwest                         |   | PHOTO<br>9                   |
|   |   |                              |
| Haleakala Highway and State of Hawaii, Department of Land and Natural Resources (DLNR) Maui Baseyard on north adjoining property, looking northeast |   | PHOTO<br>10                  |



**APPENDIX A**

**RESUMES**

---

**Tim Swartz**  
**Senior Project Manager**

Associate of Science Degree (AS)  
Occupational and Environmental  
Safety Management  
Honolulu Community College  
Honolulu, Hawaii

Undergraduate Studies in Psychology  
and Biology  
University of Kansas  
Lawrence, Kansas

Environmental Professional  
(as defined in Section 312.10 of 40  
CFR 312)

Asbestos Hazard Emergency  
Response Act (AHERA) Building  
Inspector

AHERA Management Planner  
State of Hawaii Department of Health  
(DOH) - Certified Asbestos Project  
Monitor

National Institute of Occupational  
Safety and Health (NIOSH) 582  
Phase Contrast Microscopy/Asbestos  
Identification/AAR Participant

SCITEC Radiation Safety Training

OSHA 40-Hour Hazardous Waste,  
Health, and Safety  
Accreditation/Annual Update

Lead-Based Paint Inspector

Lead-Based Paint Abatement Worker  
Awareness Training Course

Tim Swartz has over 28 years of experience in the environmental and industrial hygiene fields. His background includes numerous Phase I environmental site assessments (ESAs) and management of large-scale Phase I ESA projects; soil and groundwater sampling; asbestos and lead paint assessments and management of large-scale asbestos and lead paint projects; air monitoring and project oversight for asbestos and lead paint abatement projects; and various air quality surveys.

Mr. Swartz has extensive project management experience and is familiar with standards and requirements of the American Society for Testing and Materials (ASTM) International standards for Phase I environmental site assessments (ESAs), and Asbestos Hazard Emergency Response Act (AHERA) standards for asbestos projects. He is also familiar with Environmental Protection Agency (EPA) regulations for asbestos building surveys and air monitoring projects; EPA and Department of Housing and Urban Development (HUD) guidelines for lead-based paint surveys and abatement; and Occupational Safety and Health Administration (OSHA) regulations for projects involving worker health and safety.

---

***Daniel P. Ford, PG, MBA***  
***Principal Geologist***

MBA., With Distinction, 1999  
Hawaii Pacific University

Thesis topic : Environmental  
Management Systems and ISO  
140001

BA, Geology, 1985  
University of California, Berkeley

Registered Professional Geologist  
(P.G.), State of Kentucky, No. 0864,  
1993

Mr. Ford has over 25 years of environmental consulting experience in Hawaii and the Pacific. His experience is both managerial and technical. His managerial experience includes strategic planning, business development, change management, mergers and acquisitions, profit and loss, recruitment and employee development.

His technical experience includes both private industry and government. He has managed large scale complex projects for real estate development, oil and gas industry, industrial clients and governmental agencies. His experience includes environmental management systems, risk analysis, compliance audits, due diligence for mergers and acquisitions, subsurface investigations for soil and groundwater contamination, water quality studies, site characterizations, risk assessments, hazardous waste management, remedial investigation and feasibility studies, and remediation management. His knowledge of regulations and strategy has assisted clients in negotiations with U.S. Environmental Protection Agency (EPA) and various regulatory agencies on hundreds of projects.

Mr. Ford's project experience extends throughout the Hawaiian Islands and the Pacific Basin, Korea, Japan, the Philippines, Guam, Saipan, Hong Kong, Australia, the U.S. Mainland, and Central America.

**APPENDIX B**  
**USER QUESTIONNAIRE**

**ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE**  
**To be returned to Ford Canty with the authorized proposal**

**GENERAL INFORMATION**

|  |  |
|--|--|
| User/Client Name(s):   | <i>E.D. Olson Development</i>  |
| Property Name and Address (Include known current and former address[es] and parcel no.):                               | <i>TMK: (2) 3-8-079:013<br/>Lots 17-A-14, 15, 16, 17, 18</i>   |
| Property Acreage:  | <i>6.315</i>   |
| Current Property Type<br><br>(Designate property type and list current tenants [business name and type of operation]): | Residential: __<br>Commercial: <i>X (vacant)</i><br>Industrial: __<br>Other: __  |
| Type of Property Transaction with respect to User (Designate one):   | Purchase: <i>X</i><br>Lease: __<br>Other (provide further information): __   |
| Reason Phase I is Required (Check all that apply):   | <i>Landowner Liability Protections (e.g., Innocent Landowner Defense): __</i><br><i>Evaluation of Business Risk: X</i><br><i>Other (list): __</i><br><br>(Note: If no reason is given it is assumed that this assessment is being performed to satisfy one of the requirements for Landowner Liability Protections to CERCLA liability). |
| Site Owner/ Contact (s)<br><br>(Name and phone number):  | <i>Alexander &amp; Baldwin Properties<br/>Alan Brakawa - 808-525-6626</i>  |

Please provide the above information as well as a site plan (ALTA Survey, if available) which clearly designates the boundaries of the subject property for purposes of this Phase I ESA. A list of other Helpful documents is included with the proposal.

## ASTM PRACTICE E 1527-13 USER/CLIENT QUESTIONNAIRE (Continued)

Providing the following information (if available) to the environmental professional (Ford Canty) is one of the requirements to qualify for one of the Landowner Liability Protections (LLPs) offered under CERCLA. Missing or incomplete information could result in a determination that "all appropriate inquiry" is not complete. If further information is desired regarding these issues, Ford Canty recommends you consult with an Environmental Attorney.

### REQUIRED INFORMATION

The citation at the end of each item (e.g., 40 CFR 312.XX) is the section of EPA's November 1, 2005 AAI Final Rule which discusses that item. The ASTM Standard requires that reasonably ascertainable recorded land title records that are filed under federal, tribal, state and local law should be reviewed to determine the presence of Environmental Liens and Activity and Use Limitations (AULs) that are currently recorded against the property. This should also include a review of Environmental Liens and AULs that are imposed by judicial authorities and recorded/filed in judicial records. The Standard recommends that the User retain a title company or title professional to undertake a review of recorded land title records. Furthermore, the User is to provide any actual knowledge on Environmental Liens and AULs, as well as other selected information regarding *recognized environmental conditions*, to the *environmental professional*.

**1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).**

Given the above requirement, are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? (Check One)

No: ☒

Yes (If "Yes" provide further information): \_\_\_\_

(Note: If you desire that Ford Canty retain a title company/title professional on your behalf to review reasonably ascertainable recorded land title records for the presence of environmental cleanup liens and AULs currently recorded against the property please designate such on the Proposal Acceptance Agreement)

**2. Activity and land use limitations (AULs) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).**

Given the above requirement, are you aware of any AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? (Check One)

No: ☒

Yes (If "Yes" provide further information): \_\_\_\_



**3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).**

As the *user* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business? (Check One)

No: ☒

Yes (If "Yes" provide further information): \_\_\_\_

**4. Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).**

Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?

Yes: ☒

No (If "No" provide further information): \_\_\_\_

Not Applicable (e.g., transaction is a lease): \_\_\_\_

**5. Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).**

Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases?

No: ☒

Yes (If "Yes" provide further information):

For example, as *user*,

(a.) Do you know the past uses of the *property*?

No: \_\_\_\_

Yes (If "Yes" provide further information): \_\_\_\_

(b.) Do you know of specific chemicals that are present or once were present at the *property*?

No: X

Yes (If "Yes" provide further information): \_\_\_\_

(c.) Do you know of spills or other chemical releases that have taken place at the *property*?

No: X

Yes (If "Yes" provide further information): \_\_\_\_

(d.) Do you know of any environmental cleanups that have taken place at the *property*?

No: X

Yes (If "Yes" provide further information): \_\_\_\_

**6. The degree of obviousness of the presence or likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).**

As the user of this *ESA*, based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

No: X

Yes (If "Yes" provide further information): \_\_\_\_

**7. Proceedings involving the *property* (ASTM E 1527-05 § 10.9).**

Are you aware of any of the following:

(a.) Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property?

No: X

Yes (If "Yes" provide further information): \_\_\_\_



- (a.) Any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property?

No: ☒

Yes (If "Yes" provide further information): \_\_\_\_

- (b.) Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?

No: ☒

Yes (If "Yes" provide further information): \_\_\_\_

### **SIGNATURE**

It is understood that the information presented in this form is an integral part of the Phase I ESA process and that Ford Canty will evaluate and rely on this information in the development of the final Phase I ESA report.

Questionnaire Prepared  
By:

*Dustin M. Schmidt*

Print/Type Name:

*Dustin M. Schmidt*

Title:

*V.P. Real Estate*

Company:

*R.D. Olson Development*

Date:

*May 30, 2017*

**APPENDIX C**  
**TOPOGRAPHIC MAPS**

6.315-Acre Property

Airport Road

Kahului, HI 96732

Inquiry Number: 4953403.4

June 01, 2017

# EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Historical Topo Map Report

06/01/17

**Site Name:**

6.315-Acre Property  
Airport Road  
Kahului, HI 96732  
EDR Inquiry # 4953403.4

**Client Name:**

Ford Canty Associates, Inc.  
928 Nuuanu Avenue, Suite 505  
Honolulu, HI 96813  
Contact: Tim Swartz



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Ford Canty Associates, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

**Search Results:****Coordinates:**

|                 |         |                      |                                |
|-----------------|---------|----------------------|--------------------------------|
| <b>P.O.#</b>    | NA      | <b>Latitude:</b>     | 20.887637 20° 53' 15" North    |
| <b>Project:</b> | 17-1209 | <b>Longitude:</b>    | -156.444402 -156° 26' 40" West |
|                 |         | <b>UTM Zone:</b>     | Zone 4 North                   |
|                 |         | <b>UTM X Meters:</b> | 765864.73                      |
|                 |         | <b>UTM Y Meters:</b> | 2311827.17                     |
|                 |         | <b>Elevation:</b>    | 44.75' above sea level         |

**Maps Provided:**

2013  
1997  
1983  
1961  
1954, 1955  
1922

**Disclaimer - Copyright and Trademark Notice**

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

## **Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **2013 Source Sheets**



Paia  
2013  
7.5-minute, 24000



Wailuku  
2013  
7.5-minute, 24000

### **1997 Source Sheets**



Paia  
1997  
7.5-minute, 24000  
Aerial Photo Revised 1997



Wailuku  
1997  
7.5-minute, 24000  
Aerial Photo Revised 1997

### **1983 Source Sheets**



Paia  
1983  
7.5-minute, 24000  
Aerial Photo Revised 1977



Wailuku  
1983  
7.5-minute, 24000  
Aerial Photo Revised 1977

### **1961 Source Sheets**



MAUI  
1961  
15-minute, 62500

## ***Topo Sheet Key***

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **1954, 1955 Source Sheets**



Paia  
1954  
7.5-minute, 24000  
Aerial Photo Revised 1950



Wailuku  
1955  
7.5-minute, 24000  
Aerial Photo Revised 1950

### **1922 Source Sheets**

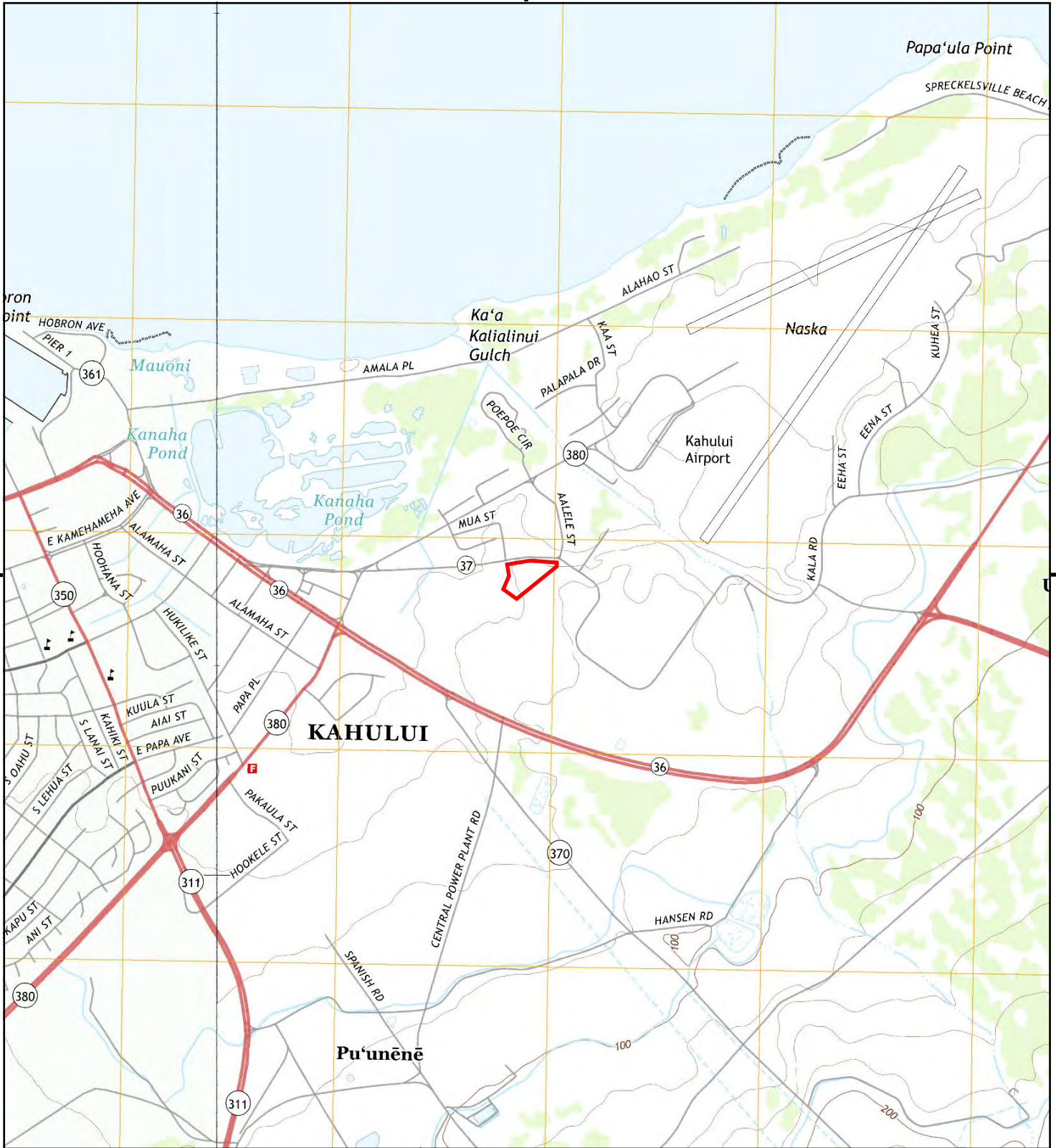


PAIA  
1922  
7.5-minute, 31680

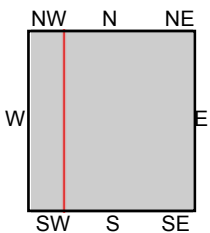


KIHEI  
1922  
7.5-minute, 31680





This report includes information from the following map sheet(s).

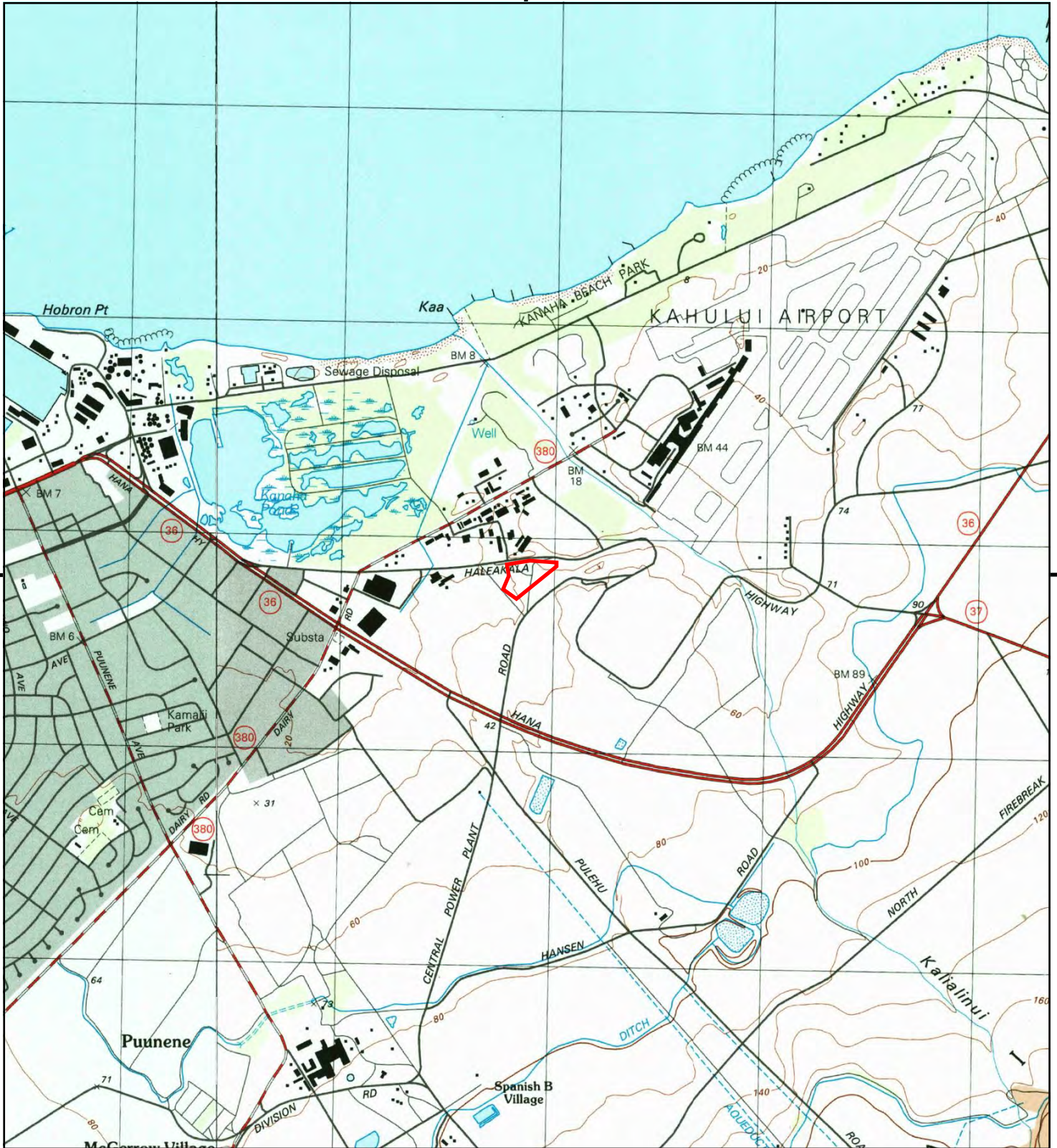


TP, Paia, 2013, 7.5-minute  
W, Wailuku, 2013, 7.5-minute

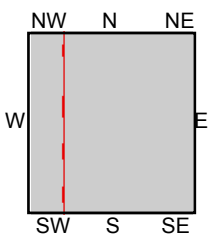
**SITE NAME:** 6.315-Acre Property  
**ADDRESS:** Airport Road  
Kahului, HI 96732  
**CLIENT:** Ford Canty Associates, Inc.







This report includes information from the following map sheet(s).

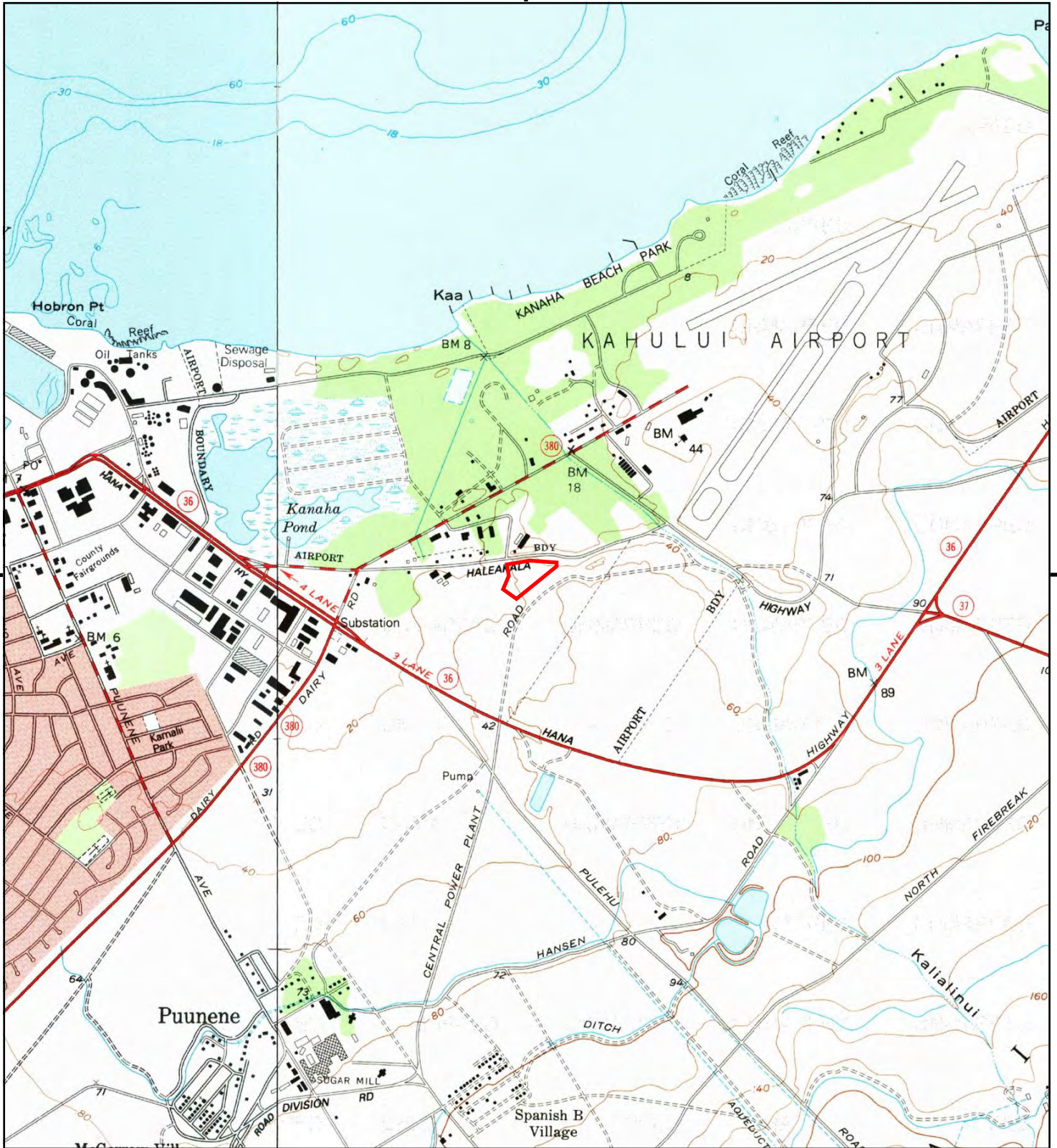


TP, Paia, 1997, 7.5-minute  
W, Wailuku, 1997, 7.5-minute

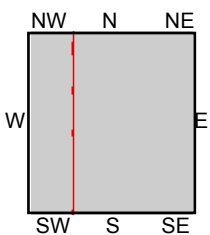
SITE NAME: 6.315-Acre Property  
ADDRESS: Airport Road  
Kahului, HI 96732  
CLIENT: Ford Cnty Associates, Inc.







This report includes information from the following map sheet(s).

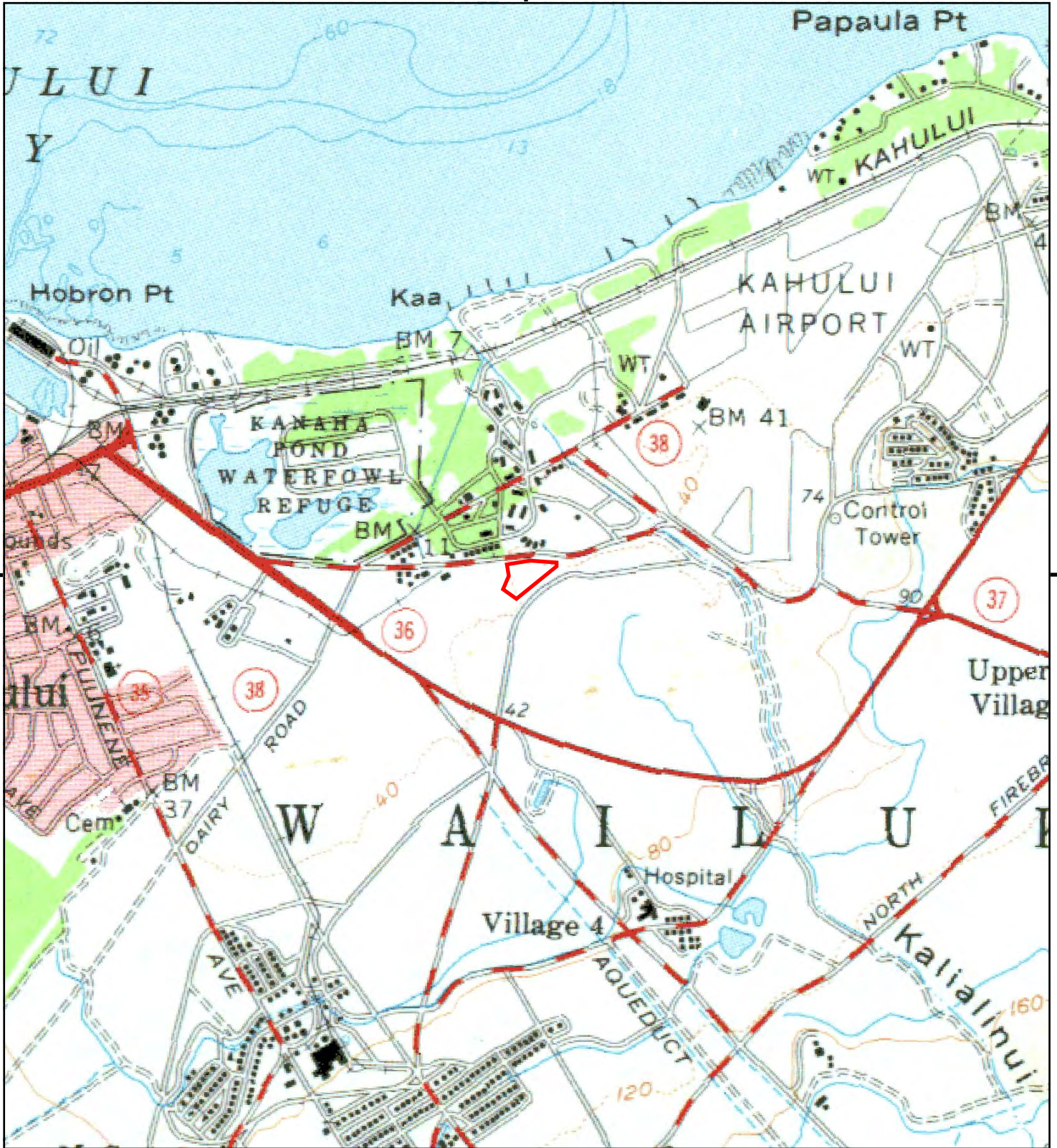


TP, Paia, 1983, 7.5-minute  
W, Wailuku, 1983, 7.5-minute

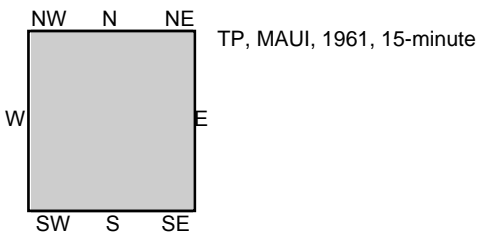
SITE NAME: 6.315-Acre Property  
ADDRESS: Airport Road  
Kahului, HI 96732  
CLIENT: Ford Canty Associates, Inc.







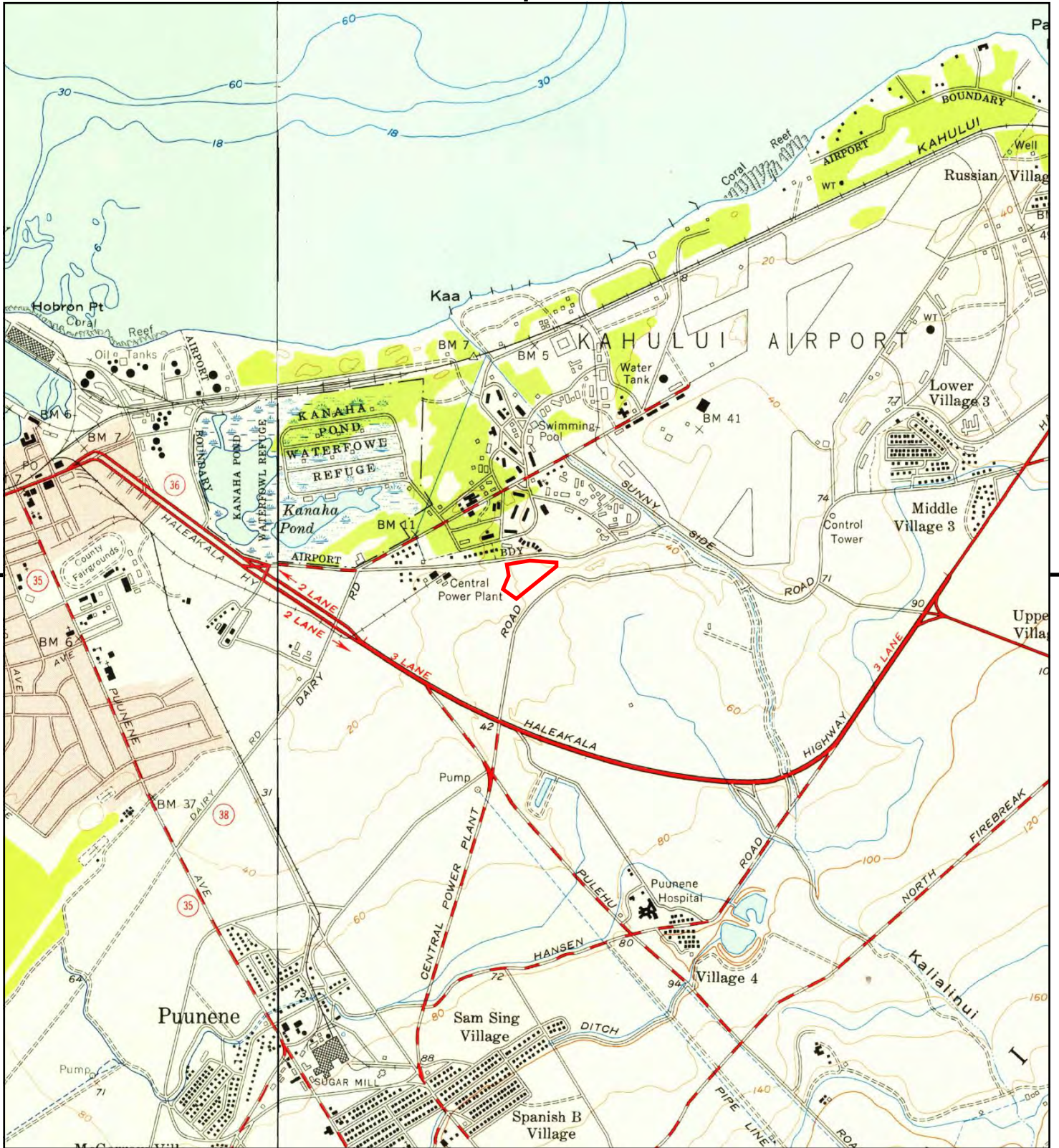
This report includes information from the following map sheet(s).



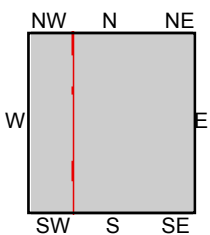
SITE NAME: 6.315-Acre Property  
 ADDRESS: Airport Road  
 Kahului, HI 96732  
 CLIENT: Ford Canty Associates, Inc.







This report includes information from the following map sheet(s).

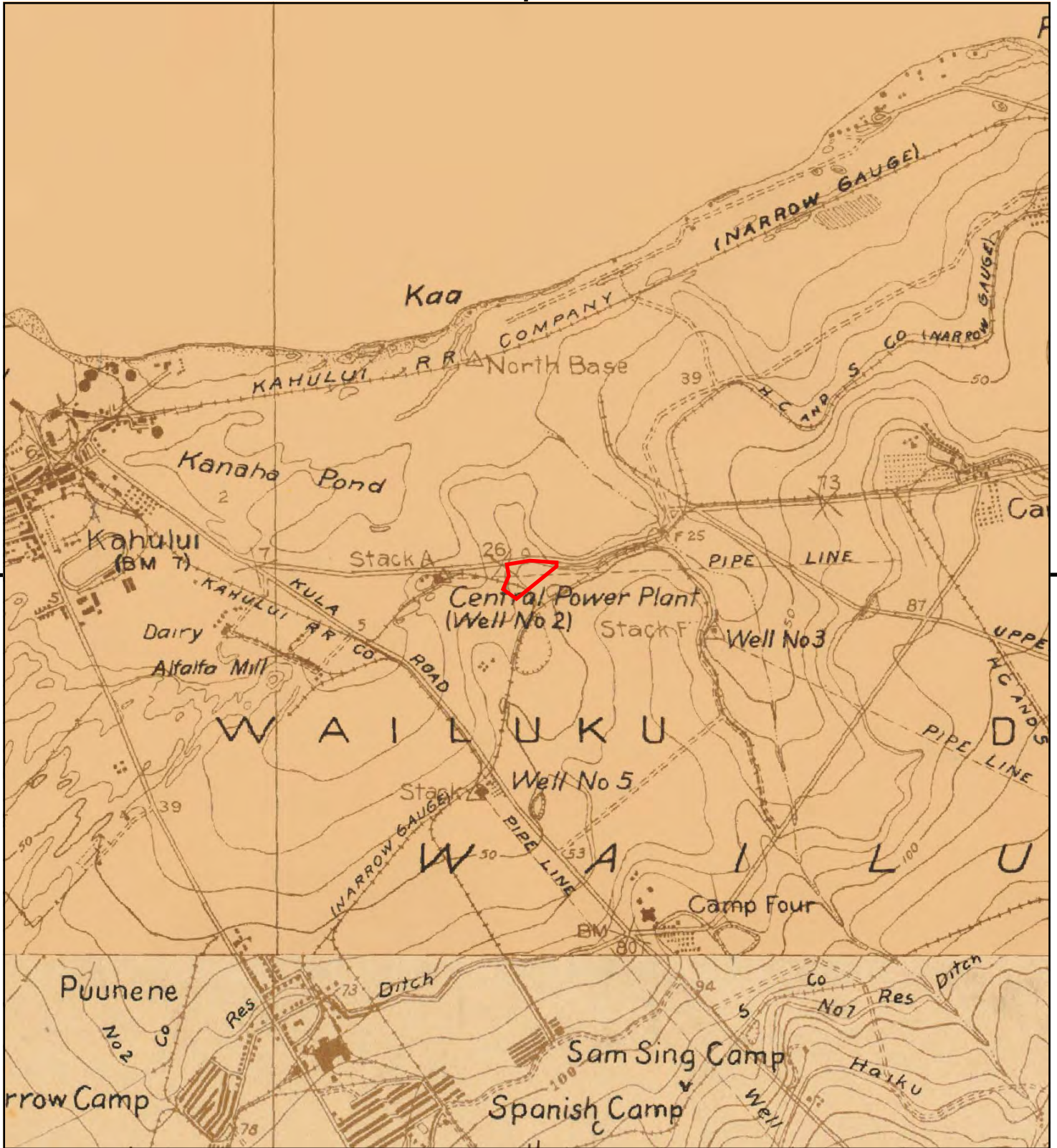


TP, Paia, 1954, 7.5-minute  
W, Wailuku, 1955, 7.5-minute

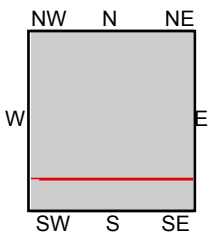
SITE NAME: 6.315-Acre Property  
ADDRESS: Airport Road  
Kahului, HI 96732  
CLIENT: Ford Canty Associates, Inc.







This report includes information from the following map sheet(s).




TP, PAIA, 1922, 7.5-minute  
S, KIHEI, 1922, 7.5-minute

SITE NAME: 6.315-Acre Property  
ADDRESS: Airport Road  
Kahului, HI 96732  
CLIENT: Ford Canty Associates, Inc.



**APPENDIX D**

**AERIAL PHOTOGRAPHS**



6.315-Acre Property

Airport Road

Kahului, HI 96732

Inquiry Number: 4953403.12

June 01, 2017

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## EDR Aerial Photo Decade Package

06/01/17

**Site Name:**

6.315-Acre Property  
Airport Road  
Kahului, HI 96732  
EDR Inquiry # 4953403.12

**Client Name:**

Ford Canty Associates, Inc.  
928 Nuuanu Avenue, Suite 505  
Honolulu, HI 96813  
Contact: Tim Swartz



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

### Search Results:

| <u>Year</u> | <u>Scale</u> | <u>Details</u>                   | <u>Source</u> |
|-------------|--------------|----------------------------------|---------------|
| 2000        | 1"=500'      | Acquisition Date: March 13, 2000 | USGS/DOQQ     |
| 1992        | 1"=500'      | Flight Date: September 23, 1992  | USGS          |
| 1976        | 1"=500'      | Flight Date: December 20, 1976   | USGS          |
| 1950        | 1"=500'      | Flight Date: September 28, 1950  | USGS          |

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

#### Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.





INQUIRY #: 4953403.12

YEAR: 2000

— = 500'







INQUIRY #: 4953403.12

YEAR: 1992

— = 500'





INQUIRY #: 4953403.12

YEAR: 1976

— = 500'







INQUIRY #: 4953403.12

YEAR: 1950

— = 500'

