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COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

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March 18, 2011

Mr. Gary Hooser, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED APPARATUS BAY BUILDING AND RELATED IMPROVEMENTS FOR THE LAHAINA FIRE STATION AT TMK (2)4-5-021:016 (POR.), WAHIKULI, MAUI, HAWAII

Dear Sir or Madame:

The County of Maui, Department of Fire and Public Safety, the Approving Agency for the Draft Environmental Assessment (EA) for the subject project, has reviewed the Draft EA and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the next available publication of the Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication form and Project Summary, a CD (PDF.file) and one (1) copy of the Draft EA. Additionally, the Draft EA has been transmitted to the Lahaina Public Library by copy of this letter.

Should you have any questions, please feel free to contact our planning consultant, Mark Alexander Roy of Munekiyo & Hiraga, Inc. at (808) 244-2015.

Very truly yours,

JEFFREY A. MURRAY
Fire Chief

JM:RKM

Enclosures

cc: Wendy Taomoto, County of Maui, Department of Management
Mark Alexander Roy, Munekiyo & Hiraga, Inc.
Lahaina Public Library (w/copy of Draft EA only)

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Draft Environmental Assessment

PROPOSED APPARATUS BAY BUILDING AND RELATED IMPROVEMENTS FOR THE LAHAINA FIRE STATION AT TMK (2) 4-5-021:016 (POR.), WAHIKULI, MAUI, HAWAII

Prepared for:

County of Maui,
Department of Fire and Public Safety

March 2011

MUNEKIYO & HIRAGA, INC.

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Executive Summary

Project Name:	Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station
Type of Document:	Draft Environmental Assessment
Legal Authority:	Chapter 343, Hawaii Revised Statutes
Agency Determination:	Anticipated Finding of No Significant Impact
Applicable Environmental Assessment Review "Trigger":	Use of County lands and funds
Location:	Island of Maui Lahaina TMK (2)4-5-021:016 (por.)
Owner:	County of Maui 200 South High Street Wailuku, Hawaii 96793
Applicant:	County of Maui Department of Fire and Public Safety 200 Dairy Road Kahului, Hawaii 96732 Contact: Lee Mainaga, Fire Services Officer Phone No.: (808) 270-7561
Approving Agency:	County of Maui Department of Fire and Public Safety 200 Dairy Road Kahului, Hawaii 96732
Consultant:	Munekiyo & Hiraga, Inc. 305 High Street, Suite 104 Wailuku, Hawaii 96793 Contact: Mark Alexander Roy, AICP, Program Manager Telephone: (808) 244-2015
Project Summary:	The County of Maui, Department of Fire and Public Safety proposes to construct a new 2,838 square foot (sq.ft.) fire

station apparatus bay building and related improvements adjacent to the existing Lahaina Fire Station in Wahikuli. The proposed apparatus bay building will be used to accommodate a fire truck, utility vehicle, and a boat/trailer combination. The new structure will be constructed with a combination of concrete masonry unit (CMU) and pre-manufactured steel and will also contain sleeping quarters for two (2) personnel, a weight/fitness room, laundry facilities, and a restroom/shower. The new structure will be fully accessible in compliance with ADA requirements and will also include automatic fire sprinkler protection. Related improvements include the removal of two (2) storage sheds and the relocation of an above-ground fuel tank, as well as installation of utility connections.

The proposed action involves the use of State lands and County funds. The use of State lands and County funds are triggers for Chapter 343, Hawaii Revised Statutes (HRS). As such, an Environmental Assessment (EA) is being prepared pursuant to Chapter 343, HRS, and Chapter 200 of Title 11, Hawaii Administrative Rules, Environmental Impact Statement Rules. This EA documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROJECT LOCATION, EXISTING USE, AND OWNERSHIP

The County of Maui, Department of Fire and Public Safety (DFPS) is proposing a new 2,838 square foot (sq.ft.) apparatus bay building and related improvements adjacent to the existing Lahaina Fire Station in Wahikuli. The existing Lahaina Fire Station is located at the Lahaina Civic Center, which houses various State and County public facilities, including the Lahaina Police Station, the Lahaina District Court, Lahaina Comprehensive Health Center, and the Lahaina Civic Center Gym. The Lahaina Civic Center complex is located mauka (east) of the Honoapiilani Highway. See **Figure 1**. The project site is identified as TMK (2) 4-5-021:016 (por.) (hereafter referred to as Parcel 16) and is owned by the State of Hawaii with an Executive Order to the County of Maui for use and maintenance of the property (via Executive Order No. 3283). Surrounding Parcel 16 and the project site are vacant agricultural lands, lands owned by the State of Hawaii and the State of Hawaii's Honoapiilani Highway is located further west of the site. See **Figure 2**. The project site is also located within the Special Management Area. The proposed area of improvements is approximately 0.22-acre in size. See **Figure 3**. The project site is accessible through Kaaahi Street, via the Leialii Parkway and Honoapiilani Highway intersection with a secondary right-turn only exit through the Kikowaena Street and Honoapiilani Highway intersection.

A copy of the Preliminary Development Plans are presented in **Appendix "A"**.

B. PROPOSED ACTION

The proposed project consists of a new 2,838 sq. ft. apparatus bay building and related improvements that will serve as an ancillary facility to the existing Lahaina Fire Station. Refer to **Figure 3**. The proposed apparatus bay building will be used to accommodate a fire truck, utility vehicle, and a boat/trailer combination. Currently, these vehicles are not protected under shelter at the Lahaina Fire Station and are exposed to the elements. The DFPS is in need of the proposed apparatus bay building as it will provide the much needed shelter for these vehicles. The tanker, for example, cost the department $629,990.00 and has not been protected against the elements since it was purchased in May, 2010. The project

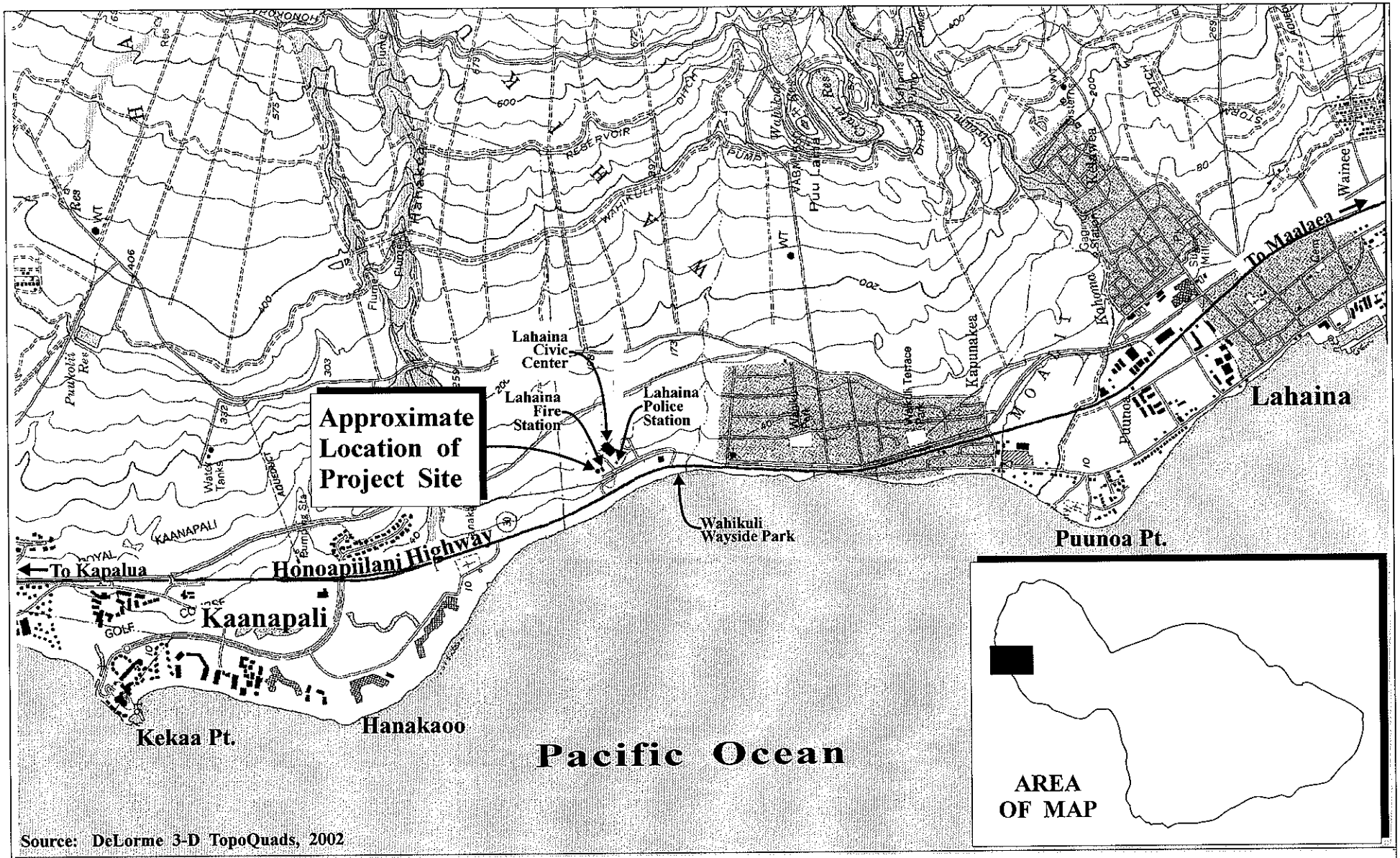

Figure 1

Proposed Apparatus Bay Building for the Lahaina Fire Station

Regional Location Map

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Prepared for: County of Maui, Dept. of Fire and Public Safety

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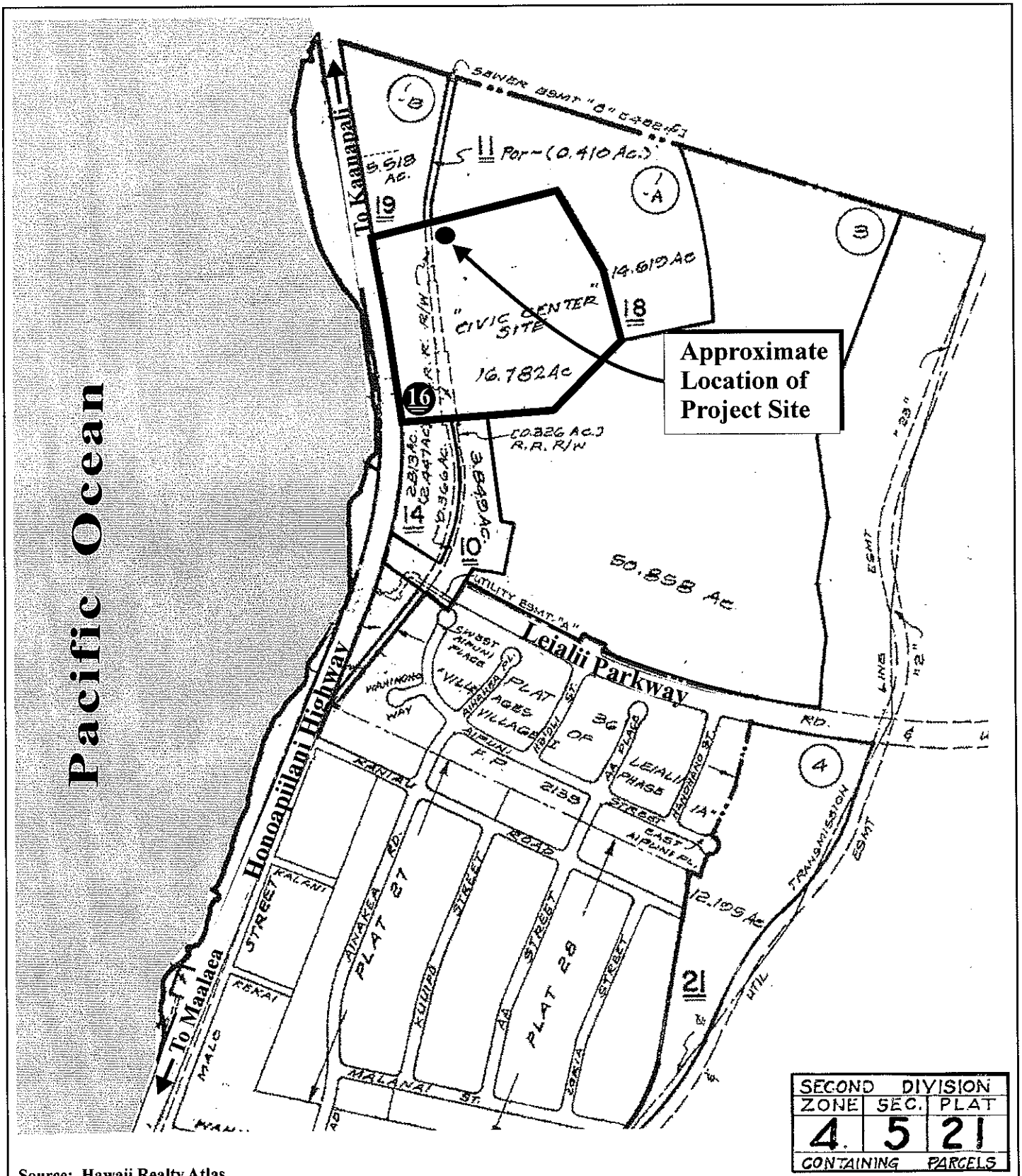

Source: Hawaii Realty Atlas

Figure 2

Proposed Apparatus Bay Building for the Lahaina Fire Station

Property Location Map

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

MUNEKIYO & HIRAGA, INC.

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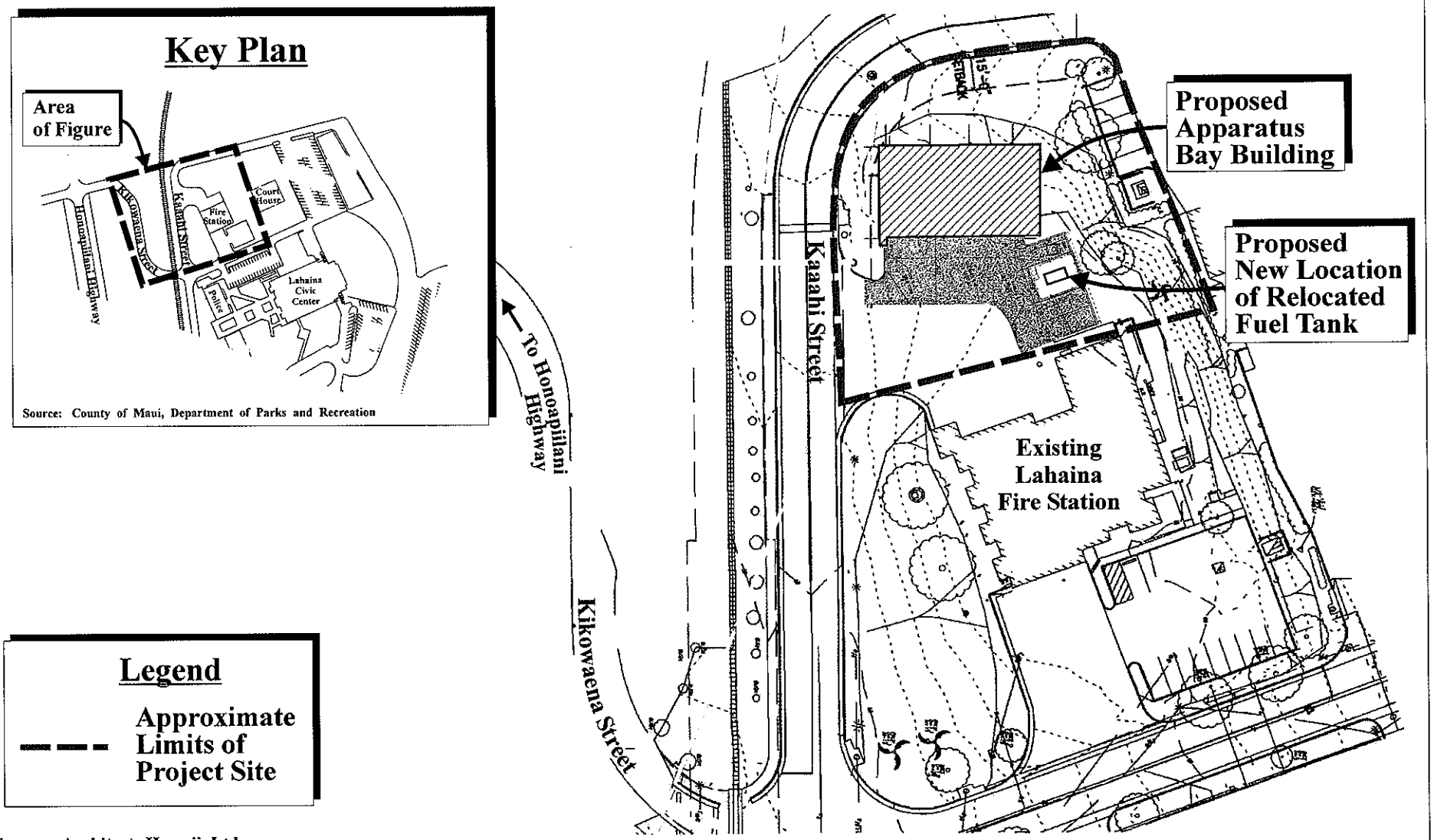


Figure 3

Proposed Apparatus Bay Building for the Lahaina Fire Station

Preliminary Site Plan

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

MUNEKIYO & HIRAGA, INC.

ArchHI\LahainaFire\Draft EA\PreliminarySitePlan

will not only provide shelter for these vehicles, but will also protect the DFPS's investment and add to the longevity of the vehicles.

The new structure will be constructed with a combination of concrete masonry unit (CMU) and pre-manufactured steel and will also contain sleeping quarters for two (2) personnel, a weight/fitness room, laundry facilities and a restroom/shower. The new structure will be fully accessible in compliance with ADA requirements and will also include automatic fire sprinkler protection. Related improvements include the removal of storage sheds and the relocation of an above-ground fuel tank, as well as installation of utility connections.

The drainage system improvements will consist of drain inlet, underground stormwater chamber, drain manhole, and an overflow drain line to the existing drain line along Kaaahi Street. The electrical system improvements will include underground distribution lines for the new facility.

The proposed project will enhance the ability of the existing Lahaina Fire Station to provide fire safety and emergency response protection services to the West Maui community.

C. REGULATORY CONTEXT

1. Chapter 343, Hawaii Revised Statutes Requirement

The proposed improvements will be funded by the County of Maui on lands owned by the State of Hawaii. The use of State lands and County funds is a trigger for an environmental assessment pursuant to Chapter 343, Hawaii Revised Statutes (HRS). In 1985, the State of Hawaii issued Executive Order No. 3283 to the County of Maui, providing the control and management of the area designated the "Lahaina Civic and Recreation Center" with an area of approximately 16.8 acres to the County of Maui for use as State and County facilities. As such, the County of Maui has maintained and utilized the parcel for County of Maui purposes, while the State of Hawaii has maintained its existing facilities on the site including the Lahaina District Courthouse. The proposed project site is located within the Executive Order site. As such, an Environmental Assessment (EA) has been prepared pursuant to Chapter 200 of Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules. Accordingly, this document addresses the project's technical characteristics, environmental impacts and alternatives, and advances findings and conclusions relative to the significance of the proposed project. The County of Maui, Department of Fire and Public Safety will serve as the Approving Agency for the EA.

2. Special Management Area

The subject property is located within the limits of the County of Maui's Special Management Area (SMA). Accordingly, an application for a SMA Use Permit is being prepared for review and action by the Maui Planning Commission.

3. County Special Use Permit

It is noted that due to the underlying County of Maui zoning designation of "Agricultural", the proposed project is not an outright permitted use. The proposed improvements have, however, been determined to qualify as a special use and will require processing of a County Special Use Permit (CUP). As such, an application for a CUP is being prepared and filed with the Planning Department for review and action by the Maui Planning Commission.

The estimated construction cost for the proposed project is $1.27 million. Construction is programmed to start in the second quarter of 2012. Construction duration is anticipated to be approximately nine (9) months.

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

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

A. PHYSICAL SETTING

1. Surrounding Land Uses

a. Existing Conditions

The site for the proposed Fire Apparatus Bay Building and related improvements project will be located immediately north of the existing Lahaina Fire Station at the Lahaina Civic Center (LCC). Surrounding the project site on the south side is LCC's main facilities which include a gymnasium, amphitheater and stage, the Lahaina District Court, Police Station, Lahaina Comprehensive Health Center and Department of Motor Vehicle and Licensing office. East of the project site are undeveloped lands owned by the Department of Hawaiian Home Lands (DHHL) and the State of Hawaii's Hawaii Housing and Finance Development Corporation (HHFDC). To the north are vacant agricultural lands owned by Kaanapali Land Management Corp. (KLMC). The Lahaina Post Office is located to the southwest (makai) of the project site. Other developments in the general area include the Wahikuli House Lots subdivision, the DHHL Villages of Leialii Village IA, located south of the project site and Wahikuli Wayside Park, located further west (makai) of Honoapiilani Highway. Further northeast of the project site are undeveloped State lands.

b. Potential Impacts and Proposed Mitigation Measures

The proposed action is intended to provide additional storage and shelter for DFPS equipment in the West Maui region. Additionally, the proposed improvements will provide for additional sleeping quarters and facilities for DFPS personnel stationed at the Lahaina Fire Station, an existing operation and structure on the property. The proposed project is not anticipated to have an adverse effect on surrounding public, recreation, residential, and agricultural uses.

2. Climate

a. Existing Conditions

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

Average temperatures in Lahaina range between 78 degrees and 87 degrees Fahrenheit. July and September are historically the warmest months, while January and February are the coolest (Maui County Data Book, 2010).

Rainfall in Lahaina is highly seasonal, with most precipitation occurring between December and January when winter storms hit the area. Situated on the leeward side of the West Maui Mountains, this region receives most of its rainfall in late afternoon and early evening, after sea breezes take moisture upslope during the day. Precipitation data collected at the Kapalua-West Maui Airport station show that, on average, December is the wettest month with 5.48 inches of precipitation, while September is the driest with just 0.30 inch (Maui County Data Book, 2010).

b. Potential Impacts and Proposed Mitigation Measures

The proposed project will not have an adverse effect on local climatic conditions. Further, the proposed project will have a low profile and is not anticipated to alter wind patterns in the area.

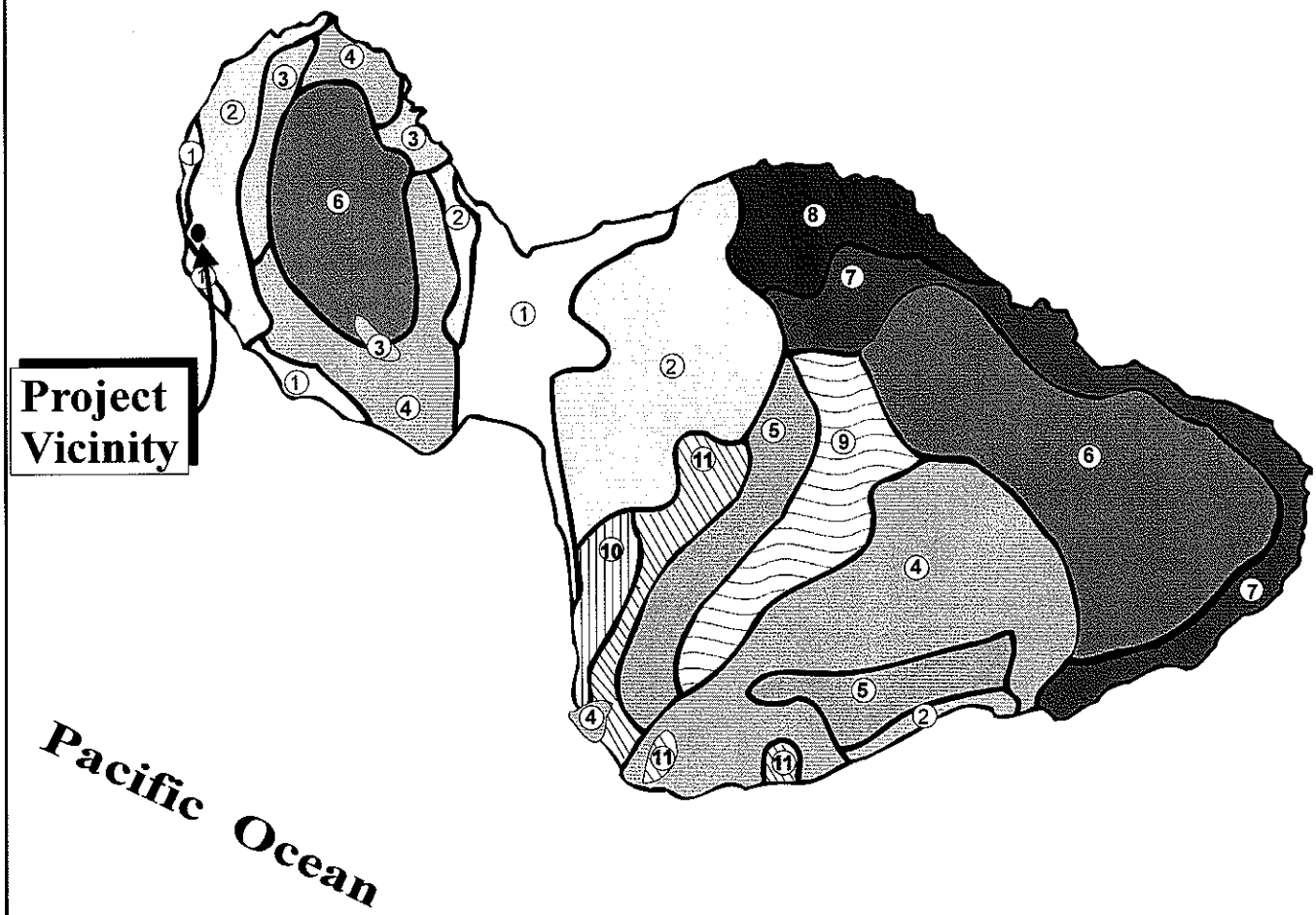
3. Topography and Soil Characteristics

a. Existing Conditions

Underlying the project site are the soils of the Waiakoa-Keahua-Molokai association. See **Figure 4**. The Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, characterizes the soils of this association as being well-drained, moderately fine textured, and occurring in low uplands. Soils of this association have developed in material weathered from basic igneous rocks.

LEGEND

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



Map Source: USDA Soil Conservation Service

Figure 4 Proposed Apparatus Bay Building for the Lahaina Fire Station
Soil Association Map

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

MUNEKIYO & HIRAGA, INC.

ArchHI\LahainaFire\Draft EA\SOILS

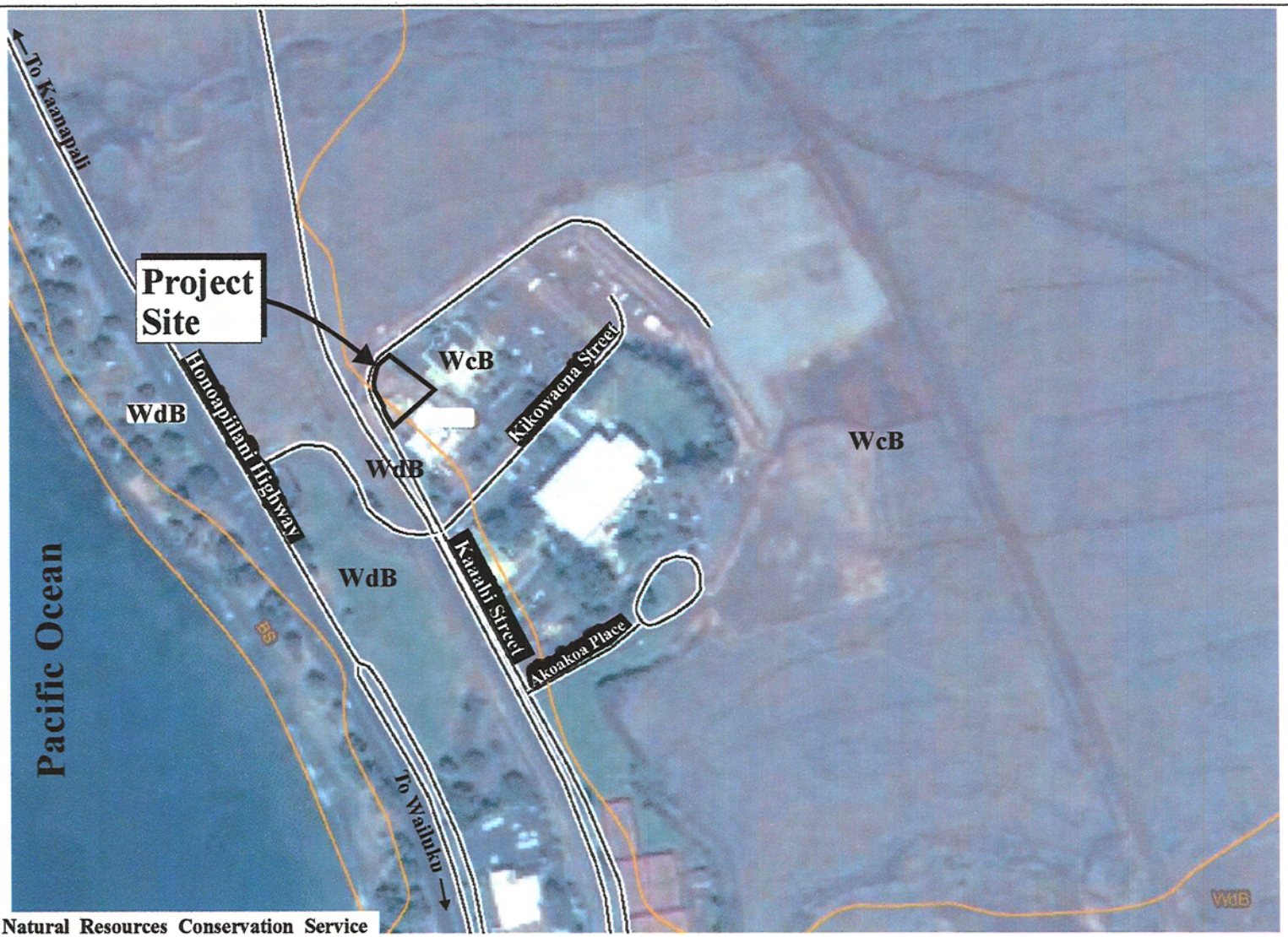
Soils underlying the project site are of the Wahikuli Series. This series consists of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock and have been influenced to some extent by volcanic ash from local cinder cones. The soils are gently to moderately sloping with elevations that range from nearly sea level to 600 feet. Wahikuli soils are geographically associated with Lahaina and Molokai soils and are used mostly for sugar cane with a small acreage used for homesites.

Specifically, of the Wahikuli series, the Wahikuli very stony silty clay, 3 to 7 percent slopes (WdB) and the Wahikuli stony silty clay, 3 to 7 percent slopes (WcB). See **Figure 5**. The WcB soils also have a dark-reddish brown surface layer except that it can have as much as 3 percent of the surface covered by stones. The soil type is used primarily for sugar cane and a small acreage is used for homesites. The WcB soils are used mostly for sugar cane, however, there are enough stones on the surface to hinder cultivation.

Elevations of the site range from about 41.8 feet above mean sea level at its lowest point to approximately 71.5 feet at its highest point. See **Appendix "B"**.

b. **Potential Impacts and Proposed Mitigation Measures**

The proposed action will require grading to accommodate grade requirements for the new Apparatus Bay Building. Cut and fill quantities will be balanced to the extent practicable, with limited alteration to the general topographic conditions at the site. Soil conditions at the site do not pose construction constraints for the project. The proposed project is not anticipated to adversely affect topography and soil characteristics of the area.



Source: USDA Natural Resources Conservation Service

Figure 5

Proposed Apparatus Bay Building for the Lahaina Fire Station

Soils Classification Map

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Prepared for: County of Maui, Dept. of Fire and Public Safety

ArchHI\LahainaFire\Draft EA\SoilsClassification

4. Agricultural Productivity Considerations

a. Existing Conditions

The lands underlying the subject property were formerly utilized for sugar cane cultivation by Pioneer Mill Company, Ltd.

The coastal flatlands and plateaus of the West Maui Mountains are suitable for agricultural crop cultivation. Soils are dark reddish-brown, stony, well-drained, and deep in the areas north of Lahaina, but stony in the areas south of Lahaina. Slopes along the coastal flatlands are level, whereas slopes on the plateaus range from gentle to steeply sloping. These plateaus are typically separated by deep, steep-sided canyons.

With regard to agricultural productivity attributes, the Land Study Bureau classifies lands with a productivity rating of "A" through "E", with "A" reflecting lands with the highest productivity and "E" the lowest. The lands underlying the project site have an overall productivity rating of "B" and reflects land types which are moderately suited for agricultural uses. According to the Land Study Bureau's Detailed Land Classification Map, the project site has been rated B52i. The land type, B52i represents deep, stony, well-drained, fine-textured soils with slopes ranging from 0 to 10 percent and elevations ranging from sea level to 400 feet.

Additionally, the State Department of Agriculture has established three (3) categories of Agricultural Lands of Importance to the State of Hawaii (ALISH). "Prime" lands are those lands which possess the soil quality, growing season, and moisture supply needed to produce high yields of crops economically and when treated and managed according to modern farming techniques. "Unique" lands have similar crop specific characteristics, while lands rated "Other" are not classified as "Prime" or "Unique", but are of Statewide or local agricultural importance. Lands not rated "Prime", "Unique" or "Other", are "Unclassified". According to the ALISH map, the lands underlying the Fire Apparatus Bay Building and related improvements are "Unclassified".

b. Potential Impacts and Proposed Mitigation Measures

The proposed action will involve the use of land which is no longer utilized for agricultural purposes. The project site is already developed as the Lahaina Fire Station and has been since 1973, or about 38 years. The acreage encompassed by this land is not considered significant in the context of the total 246,000 acres of State Agricultural district lands on the island of Maui. The use of this land for the proposed project is not anticipated to adversely affect the inventory of lands available for agricultural cultivation, nor is it expected to affect the inventory of land available for diversified agricultural use. In summary, the proposed action is not anticipated to adversely affect agricultural productivity parameters for the island of Maui.

5. Flood and Tsunami Hazards

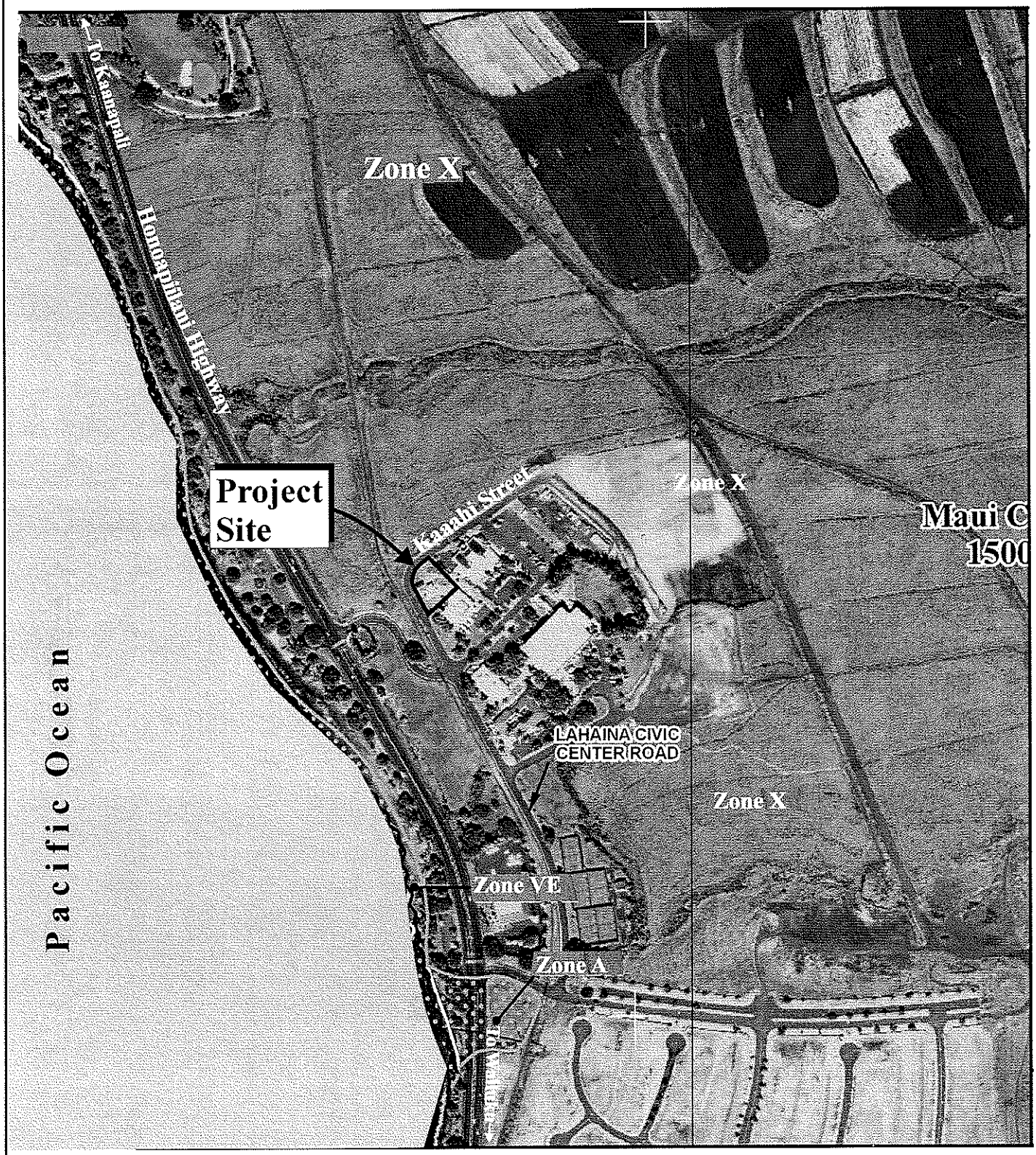
a. Existing Conditions

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) indicates that the project site is located in Zone X (unshaded), identified as areas of low flood risk and minimal flooding with no development restrictions. See **Figure 6**. Specifically, the Federal Emergency Management Agency (FEMA) describes areas in Flood Zone X (unshaded) as areas determined to be outside the 2-percent annual chance floodplain.

In addition, the project site is situated in a location which is outside of the tsunami inundation area.

b. Potential Impacts and Proposed Mitigation Measures

The proposed improvements are not located within a flood hazard district and there are no restrictions on development in Flood Zone X (unshaded). Moreover, the project site is located outside of the tsunami inundation area and tsunami evacuation zone. The proposed project will include onsite drainage improvements in keeping with County of Maui design standards to ensure that all project-related increases in run-off are retained onsite. No adverse impact to flood conditions is, therefore, anticipated as a result of the proposed expansion.



Source: FIRM Panel No. 1500030353E

Figure 6 Proposed Apparatus Bay Building for the Lahaina Fire Station

Flood Insurance Rate Map

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

MUNEKIYO & HIRAGA, INC.

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6. Flora and Fauna

a. Existing Conditions

The Environmental Impact Statement Preparation Notice (EISPN) prepared for the Kaanapali 2020 Plan (Munekiyo & Hiraga, 2004) contained an area-wide biological resources survey which identified the vegetation in the immediate vicinity of the subject property to be predominately a weedy mixture of plants commonly associated with agricultural lands. Introduced species of grasses, weeds, shrubs, and trees have occupied the former sugar cane lands. Strips of vegetation, including haole koa brush and kiawe trees border the Hanakaoo, Wahikuli, and Hahakea Gulches. A few native species, such as the wiliwili, ilima, and Kakowakona, are found in the gulch areas.

Feral mammals likely to occur in the area include the mongoose and rats, as well as feral cats and pigs. Avifauna typically include the Maui Amakihi, Pueo, Black Crowned Night Heron, Pacific Golden Plover, Ruddy Turnstone, Sanderling, and Wandering Tattler. None of these birds are listed as endangered or threatened on Maui.

Vegetation on the project site currently consists of grasses and weeds as well as shrubbery and trees along the station's property bordering the courthouse and the civic center.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not expected to have an adverse impact on avifauna, and feral mammal resources as it currently consists of weeds and grasses. No rare, threatened, or endangered species of terrestrial fauna have been identified in previous studies in the area. Similarly, none of the plants found in the area are threatened or endangered species of concern. The proposed project is, therefore, not expected to have a significant negative impact on botanical resources within the subject property.

7. Streams, Wetlands, and Reservoirs

a. Existing Conditions

According to the United States Department of the Interior, Fish and Wildlife Service, National Wetland Inventory Map, there are no wetland features in proximity to the project site. There are also no streams or other inland water bodies in proximity to the project site.

b. Potential Impacts and Proposed Mitigation Measures

The proposed Fire Apparatus Bay Building and related improvements are not anticipated to have any adverse effects on streams, wetlands or any other natural inland water features in the West Maui region.

8. Air Quality

a. Existing Conditions

There are no point sources of airborne emissions in the immediate vicinity of the project site. Although minimal, airborne pollutants are largely attributable to vehicular exhaust from traffic along Honoapiilani Highway and nearby roadways. Windblown dust from fallow fields are another source of indirect emissions in the region. These sources, however, are intermittent and prevailing winds quickly disperse the particulates generated by these temporary sources. Overall, the air quality in the Lahaina region is considered good.

b. Potential Impacts and Proposed Mitigation Measures

In the short term, construction related activities for the proposed project will be the primary source of airborne pollutants affecting the surrounding area. Site work involving clearing, grubbing, and grading operations will generate fugitive dust. Appropriate Best Management Practices (BMPs), such as frequent watering of exposed surfaces and regular maintenance of construction equipment, will be utilized to minimize air quality impacts associated with project construction.

The proposed Fire Apparatus Bay Building and related improvements is not an action which will generate adverse long-term air quality impacts.

9. Noise Characteristics

a. Existing Conditions

There are no fixed noise generators in the vicinity of the project site. Existing background noise levels are primarily attributable to vehicular traffic along Honoapiilani Highway and aircraft noise from the Kapalua-West Maui Airport operations. Noise sources within the project area also include large events and concerts from the LCC.

b. Potential Impacts and Proposed Mitigation Measures

Ambient noise conditions may be temporarily affected by construction activities. Heavy construction machinery, such as backhoes, dump trucks, front-end loaders, paving equipment, and material-transport vehicles are anticipated to be the dominant noise-generating sources during the construction period of the proposed improvements. Sound attenuating construction equipment will be used where practicable and necessary, to mitigate noise impacts caused by construction. Coordination will be undertaken with the County of Maui, Department of Parks and Recreation to minimize the potential for construction-related impacts on special events occurring at the LCC. Once completed, the proposed project itself is not anticipated to adversely impact noise conditions at the LCC since it will complement and support the existing Fire Station.

10. Archaeological Resources

a. Existing Conditions

An archaeological field inspection for the project site was conducted by Xamanek Researches, LLC on January 18, 2011 and its letter report submitted to the State Historic Preservation Division (SHPD). See **Appendix "C"**. The field inspection report notes the developed character of the subject property and that the project site has been previously disturbed by the development of the existing Lahaina Civic Center facility.

b. Potential Impacts and Proposed Mitigation Measures

The field inspection letter report notes that given the proximity of the site to the coastline and previously identified sites on an adjacent property, precautionary archaeological monitoring is recommended. As such, an Archaeological Monitoring Plan has been prepared for the project and submitted to SHPD for review and approval by the archaeologist. See **Appendix "C-1"**.

In addition, should inadvertent archaeological finds become encountered during construction, work will be halted in the immediate vicinity of the find and appropriate mitigation protocols implemented in coordination with the SHPD.

11. Cultural Resources

a. Existing Conditions

A Cultural Impact Assessment (CIA) report was prepared for the neighboring Lahaina Civic Center Tennis Courts Complex expansion project which is located on the subject parcel and adjacent parcels. The assessment was completed in May 2008 and in accordance with the Office of Environmental Quality Control's Guidelines for Assessing Cultural Impacts. See **Appendix "D"**. The CIA report establishes a cultural context for the subject area through descriptions of past political boundaries, traditional settlement patterns, legendary places, Lahaina District settlement patterns, the Great Mahele, and historic land uses.

Methodologically, the cultural assessment process also incorporated sending of letters of inquiry to individuals and organizations having cultural resource knowledge and expertise. This process, combined with research on historical and cultural sources was used as a basis for assessing the project's impacts on cultural resources.

As the CIA report was completed for a project located on the same parcel as the Lahaina Fire Station, information contained therein will be utilized for the purposes of this EA.

b. Potential Impacts and Proposed Mitigation Measures

The CIA report for the Lahaina Civic Center Tennis Courts Complex found that the project area has not been used for traditional cultural purposes in the recent past. The report concluded that there will be no direct adverse effect upon cultural beliefs, including those related to gathering, access or other customary activities. Therefore, because the project site is currently developed as the Lahaina Fire Station and is part of the Lahaina Civic Center Complex, adverse impacts upon cultural resources and beliefs are not anticipated from the proposed Apparatus Bay Addition and related improvements.

12. Scenic and Open Space Resources

a. Existing Conditions

The West Maui Mountains are visible to the east and provide a scenic backdrop to the project site. The Wahikuli Wayside Park, located makai of Honoapiilani Highway, west of the project site, provides a coastal open space and recreational area landscape. The built environment at the LCC include public/quasi-public buildings and a tennis court complex.

b. Potential Impacts and Proposed Mitigation Measures

The project site is located on the slopes of the West Maui Mountains mauka of Honoapiilani Highway. Design of the proposed Fire Apparatus Bay Building and related improvements will maintain the urban design character established by surrounding public/quasi-public land uses. Design parameters for the proposed improvements will be similar to the existing Lahaina Fire Station at the LCC and adjacent public/quasi-public facilities, to provide visual continuity and buffers from existing adjacent residential uses to the south of the project site. The proposed project is not anticipated to have an adverse impact on area's visual resources.

B. SOCIO-ECONOMIC CONDITIONS

1. Land Use and Community Character

a. Existing Conditions

The majority of lands in the West Maui region are designated for either "Conservation" or "Agricultural" use by the State Land Use Commission. Generally, lands designated for "Conservation" and "Agricultural" uses occupy the higher and middle elevations, respectively, while lands designated for "Urban" use are located at the lower elevations along the coast.

Kaanapali and Kapalua contain Community Plan designations reflective of their resort nature. The communities of Kahana and Napili contain a mixture of resort, residential, and business uses.

Lahaina encompasses a diverse mix of land uses, including residential, business, light industrial, recreational, and agricultural uses. Lahaina town is the commercial center of West Maui and the former first capital of the State of Hawaii. Lahaina town, the former whaling capital, has also been designated as a National Historic Landmark. The town contains several shopping centers and retail business areas, and serves as a hub for the region's residential housing. To the east (mauka) of the Pioneer Mill smokestack in Lahaina, there exists a multitude of single-family homes for island residents.

Part of West Maui's attraction can be attributed to its consistently dry and warm climate, complimented by its many white-sand beaches and scenic landscaped vistas. The vast number of visitor accommodations are located in the town of Lahaina and the resort communities of Kaanapali, Kapalua, Kahana, and Napili.

The Kapalua-West Maui Airport at Mahinahina provides commuter air services which conveniently link the West Maui region to Oahu and other neighbor islands. The airport is operated by the State Department of Transportation's Airports Division and is located approximately 1.5 miles to the north of the project site.

Diversified agriculture, such as coffee, corn, bananas, melons and papayas, occupy much of the actively cultivated agricultural lands in the West Maui region. Since the closure of its sugar cane cultivation operations in September 1999, Pioneer Mill Company has set aside approximately 1,200 acres of their agricultural lands in Kaanapali to grow seed corn and coffee.

b. Potential Impacts and Mitigation Measures

The project site is situated along the northwestern coast of Maui which includes the residential communities of Lahaina, Honokowai, Kahana, and Napili, as well as the master planned resorts of Kaanapali and Kapalua.

The proposed Fire Apparatus Bay Building and related improvements are needed in the West Maui region in order to provide the community with fire protection and public safety services sufficient to support continuing growth in population and housing developments in the area. The proposed expansion is not anticipated to adversely alter the community character of West Maui.

2. Population and Demography

a. Existing Conditions

The proposed Fire Apparatus Bay Building and related improvements are located on the mauka side of Honoapiilani Highway near the western coast of Lahaina, Maui, within the West Maui Community Plan region.

The County of Maui, specifically the Island of Maui and the West Maui region has exhibited relatively strong growth over the past decade. In 2000, the population of Maui County was 128,241, compared to a 1990 population of about 100,504 (Planning Dept., June 2006). The resident population of the Maui County in 2010 was estimated to be 151,300 and is projected to increase to approximately 174,450 by 2020 and 199,550 by 2030 (Planning Dept., June 2006).

The population in West Maui increased from 14,574 in 1990 to 17,967 in 2000 to about 21,577 in 2010. Projections of the resident population for West Maui for the years 2020 and 2030 are 25,096 and 28,903, respectively (Planning Dept., June 2006).

West Maui's growth over the last four (4) decades has kept pace with that of Maui County. Since 1970, West Maui has seen an increase in resident population growing from about 5,500 persons in 1970, to approximately 10,300 persons in 1980, to about 14,600 in 1990. In 2000, the resident population of Lahaina was approximately 17,967 with an estimated population of 21,577 in 2010. Population forecasts for this region reflect a West Maui population of 25,096 persons by 2020 (SMS, June 2006). Accounting for visitors and workers, the day-time population increases to approximately 50,000 people in the West Maui region.

Age and ethnicity attributes of the West Maui region for the year 2000 are reflected in **Table 1**.

Table 1. Age and Ethnicity

AGE AND ETHNICITY		
	Maui County	**West Maui**
Population	128,094	17,748
Age		
Under 5	7 percent	7 percent
5 to 19	21 percent	17 percent
20 to 44	37 percent	42 percent
45 to 64	24 percent	24 percent
65 and older	11 percent	10 percent
Median Age	36.8 years	39.3 years
Ethnicity		
Caucasian	34 percent	55 percent
Japanese	10 percent	5 percent
Hawaiian	9 percent	6 percent
Filipino	17 percent	13 percent
All Others	30 percent	21 percent
Source: U.S. Census Bureau, 2000.		

West Maui has a larger percentage of its population in the eligible labor force than the County as a whole. As noted in the preceding table, in the year

2000, 66 percent (66%) of West Maui's population is in the labor force age bracket of 20 to 64 years, while Countywide, 61 percent (61%) of the population is in this age category. West Maui has a slightly higher median age of 39.3 years, when compared to the Countywide median of 36.8 years.

b. Potential Impacts and Proposed Mitigation Measures

With about 21,000 full-time residents and accounting for the visitor population and a fast-growing population, West Maui has sufficient population to support the proposed improvements. Due to the public service and safety nature of the facility, the improvements for the Lahaina Fire Station are considered a community benefit to residents, non-residents, and visitors. The proposed project is not a direct population generator and, as such, is not anticipated to have significant adverse impacts on population or demographic trends of the West Maui region.

3. Labor Force

a. Existing Conditions

In 2000, there were a total of 21,148 civilian jobs in the Lahaina area, of which 4,703 were self-employed jobs. In January 2011, the non-seasonally adjusted unemployment rate for Maui County and the Island of Maui stood at 7.9 percent (HIWI, March 2011).

b. Potential Impacts and Proposed Mitigation Measures

On a short-term basis, the project will support construction and construction-related employment. This project is not anticipated to have significant adverse impacts on labor conditions.

C. PUBLIC SERVICES AND FACILITIES

1. Police and Fire Protection Services

a. Existing Conditions

The project site is within the service area of the Maui Police Department's Lahaina patrol district which services the West Maui region. The Lahaina

Police Station is located in the Lahaina Civic Center complex, to the north of the project site, and was built in the early 1970's. The Lahaina patrol district includes management level officers, field police officers, and additional personnel, which consists of public safety aides and administrative support staff (Maui Police Department Personnel Roster, May 2008). In addition, there is also a police sub-station in Napili. This sub-station is used to allow officers assigned in the outskirts of Lahaina to write police reports without having to travel back into Lahaina town.

Fire prevention, suppression and protection services for the West Maui region are provided by the County Department of Fire and Public Safety's Lahaina and Napili Fire Stations. The existing Lahaina Fire Station is located immediately south of the project site, while the Napili Fire Station is located approximately 7.4 miles to the northeast. The Lahaina Fire Station on the subject property includes an engine and a ladder company (including a tanker), and is staffed by 30 full-time personnel. It also has a boat for ocean rescues. The Napili Fire Station consists of an engine company with 15 full-time firefighting personnel. All firefighting personnel are first-responder trained to provide emergency medical care.

b. Potential Impacts and Mitigation Measures

The proposed action will provide additional storage area for specialized equipment at the Lahaina Fire Station as well as additional facilities for fire personnel. The proposed project is not anticipated to affect the capabilities of police and fire services. In fact, the proposed improvements are intended to enhance the ability of the Lahaina Fire Station to service emergency needs in the West Maui region. The existing operational limits of police and fire services will not be extended or affected by implementation of the proposed project.

2. Medical Facilities

a. Existing Conditions

Maui Memorial Medical Center serves as the island's only major medical facility. Located in Wailuku, approximately 25.0 miles southeast of Lahaina, the 231-bed facility provides general, acute, and emergency care services for

the island's residents and visitors. In addition, the Kaiser Permanente Medical Clinic, West Maui Healthcare Center, Maui Medical Group, Lahaina Physicians, and other private medical and dental offices provide health care services for the region's residents and visitors.

b. Potential Impacts and Mitigation Measures

The proposed project will not adversely affect medical services and delivery capacities in the area.

3. Recreational Facilities

a. Existing Conditions

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

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

Additionally, the clear ocean waters and well-developed reef system along the Lahaina and Kaanapali coastline offer many recreational opportunities for residents and visitors. Many tourism-based businesses also rely on the ocean and reef system for their operation.

Fishing by shorecasting and netting is practiced in the ocean waters near Lahaina Town, Kaanapali Beach, Hanakaoo Point and Honokowai Point. Edible seaweed collecting, octopus fishing and spearfishing occur on the adjacent reef flat fronting Kaanapali. During periods of wave activity, the area is a good location for surfing.

b. Potential Impacts and Mitigation Measures

The proposed Fire Apparatus Bay Building and related improvements will not affect public recreational opportunities in the area. The proposed project will provide a public safety benefit in that it will provide a facility to store and protect DFPS equipment which is utilized for the protection of life and property throughout the West Maui region. This project is viewed as a community benefit for island residents.

4. Educational Facilities

a. Existing Conditions

The West Maui region is served by four (4) public schools (Lahainaluna High School, Lahaina Intermediate School, Princess Nahienaena Elementary School, and Kamehameha III Elementary School) operated by the State of Hawaii, Department of Education (DOE) and two (2) smaller private schools (Sacred Hearts School and Maui Preparatory Academy). All four (4) of the public schools are located within Lahaina town and three (3) of those schools are located along Lahainaluna Road, mauka of Honoapiilani Highway. The enrollments in the four (4) schools have grown in concert with the growth of residential development in the area.

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

b. Potential Impacts and Proposed Mitigation Measures

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

5. Solid Waste Collector and Disposal Services

a. Existing Conditions

Residential refuse collection is provided by the County's Department of Environmental Management, Solid Waste Division. Private refuse collectors provide solid waste disposal services for commercial and institutional accounts. Solid waste collection at the existing Lahaina Fire Station is currently serviced by a private refuse collector. With the exception of the Hana region, residential and commercial solid waste from throughout the island is transported to the Central Maui Landfill at Puunene, about 30.0 miles to the southeast of the project site. The Central Maui Landfill has been determined to have available capacity sufficient for meeting current and project waste disposal needs in the County up to the year 2026 (GBB, 2009). The County of Maui's, Solid Waste Division is in the process of undertaking an expansion project at the landfill designed to further increase the capacity of this waste management facility.

A refuse transfer station located at Olowalu, approximately 8.0 miles south of the project site, accepts household and green wastes, as well as used oil, for transport to the Central Maui Landfill in Puunene. The disposal of commercial and institutional refuse is not permitted at the Olowalu transfer station.

b. Potential Impacts and Mitigation Measures

Solid waste management protocols have been developed for the disposal of materials resulting from the site and construction activities and will be implemented by the project's contractor, once selected. Once operational, the project will continue to be served by the private solid waste collection service and its waste disposed of at the County landfill.

The proposed project is limited in scope to an apparatus bay addition building for the existing fire station. As such, it is not anticipated to adversely impact the County's solid waste collection and disposal capabilities and capacities.

D. INFRASTRUCTURE

1. Existing Roadway Infrastructure

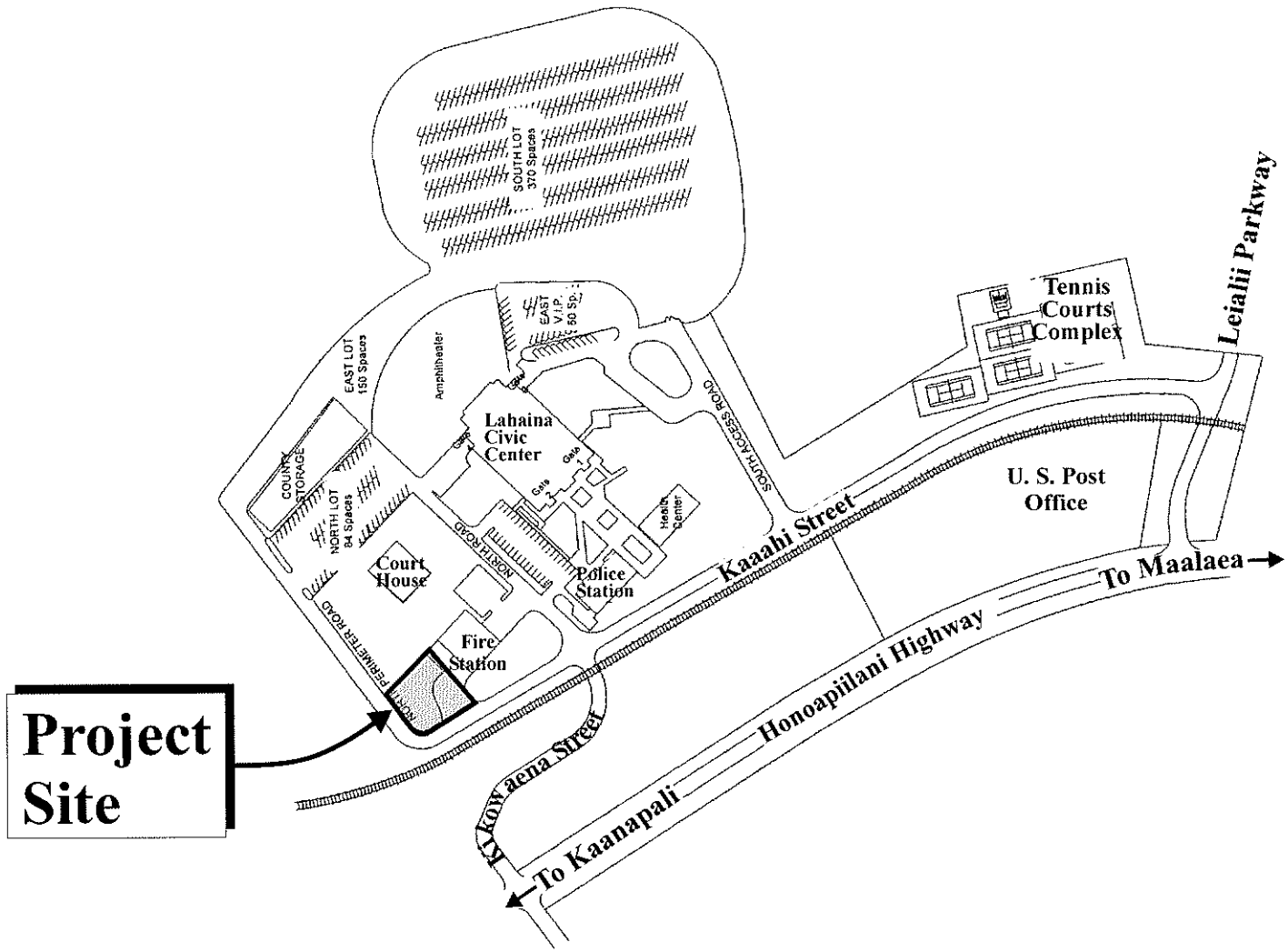
a. Existing Conditions

Access to the Lahaina region is provided by Honoapiilani Highway from Central (Wailuku/Kahului) and South (Kihei/Wailea) Maui. Extending from Wailuku to Kapalua, it is the only State highway serving the West Maui region. With the exception of a four-lane segment through Lahaina Town to Lower Honoapiilani Road, the typical highway section consists of two (2) lanes bordered by paved shoulders which also function as bike routes.

Vehicular access to the existing Lahaina Fire Station and the project site for the proposed Apparatus Bay Building is provided from Kaaahi Street, primarily via its connection to Lealii Parkway (south access) which intersects Honoapiilani Highway. See **Figure 7**. Alternatively, there is an access from Kaaahi Street via its connection to Kikowaena Street (north access) which also intersects Honoapiilani Highway. However, this access is restricted to a right-turn in and right-turn out exit only. Both access points to Honoapiilani Highway are currently utilized by emergency vehicles for egress. The location of the incident determines which access is used. For all incidents north of the fire station, vehicles utilize the north access. Vehicles responding to incidents south of the fire station utilize the south access.

b. Potential Impacts and Mitigation Measures

The proposed project will provide for the construction of an apparatus bay building which will be used to house a fire truck, utility vehicle, and a boat/trailer combination. The building will also be designed to provide sleeping quarters for two (2) DFPS personnel. The proposed project will accommodate DFPS equipment already in use and stored at the existing Lahaina Fire Station. Further, the number of DFPS personnel working at the Lahaina Fire Station will remain unchanged with implementation of the project. As such, the proposed project is not anticipated to adversely impact traffic operating conditions in the vicinity of the project site.



Source: County of Maui, Dept. of Parks and Recreation

Figure 7

Proposed Apparatus Bay Building for the Lahaina Fire Station

Surrounding Roadways Plan

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

MUNEKIYO & HIRAGA, INC.

ArchHJ\LahainaFire\Draft EA\Surrounding Roadways Plan

2. Water

a. Existing Conditions

The West Maui region is served by the County's Department of Water Supply domestic water system. The County water system services the coastal areas from Launiupoko to Kaanapali and from Honokowai to Napili. The County's system includes two (2) surface and nine (9) groundwater sources.

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

The County of Maui provides water service for the Lahaina Fire Station through an existing 8-inch waterline bordering the property on the south. There is also a 16-inch waterline along Honoapiilani Highway. According to the Preliminary Engineering Report prepared for the project, the existing fire station's domestic water is serviced from a 1-1/2" water meter located along Kikowaena Street. The flow range for the 1-1/2" water meter ranges between 51 gallons per minute (gpm) and 100 gpm. The domestic water demand from the existing fire station is 26 gpm. There is also an existing fire hydrant located south of the project site, along Kaaahi Street. Refer to **Appendix "B"**.

b. Potential Impacts and Proposed Mitigation Measures

The proposed domestic water for the new building will connect to the existing waterline along the northeast side of the existing fire station building. The existing 1-1/2" water meter is sufficiently sized to accommodate the added water demands of the apparatus bay building addition. The domestic water demand for the proposed project is 17 gpm.

This will bring the total demand for the existing fire station and proposed project to 35 gpm. Water for the addition's fire sprinkler system will be connected to an existing 6-inch watereline main along Kaaahi Street. The fire flow requirement for the proposed project is 728 gpm. Refer to **Appendix "B".**

Additionally, water conservation measures, such as the use of low-flow fixtures in the new restroom/shower, will be implemented as part of the project.

3. Wastewater Systems

a. Existing Conditions

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

Wastewater from the Kaanapali and Lahaina areas is treated at the County's Lahaina Wastewater Reclamation Facility (WWRF), which is part of the project site. The WWRF's potential total treatment capacity is 9.0 million gallons per day (mgd), with 6.0 mgd for secondary treatment and 3.0 mgd for R-1 treatment. Presently, the facility treats about 5.4 mgd of wastewater. About 1.2 mgd of the R-1 treated effluent is used to irrigate the Royal Kaanapali golf courses, the landscaped areas along Honoapiilani Highway, and the landscaped median of Kaanapali Parkway. The remaining treated effluent (4.2 mgd) is disposed into four (4) injection wells located within the facility. Under the conditions of its Environmental Protection Agency (EPA) permit, the County is allowed to dispose a maximum flow of 6.7 mgd into the injection wells.

The existing fire station's sanitary sewer is connected to an 8-inch main along Kikowaena Street on the south side of the building. The station's 4-inch sewer lateral increases at the property line to a 6-inch sewer lateral before connecting to the sewer main. The existing wastewater flow for the fire station is 10,675 gpd.

b. Potential Impacts and Proposed Mitigation Measures

The average wastewater flow rates for the project area were estimated using County of Maui Standards. The total projected wastewater flows generated by the proposed Fire Apparatus Bay Building and related improvements is approximately 1,005 gallons per day. The proposed new apparatus bay addition building will be serviced by the County of Maui's wastewater system via a connection to the existing 4-inch lateral, a portion of which will be replaced with a 6-inch lateral. Refer to **Appendix "B"**.

Adverse impacts to wastewater collection, treatment and disposal capacities are not anticipated from the proposed action.

4. Drainage

a. Existing Conditions

According to the Preliminary Drainage Report (PDR) prepared for the project, a topographic survey of the project area indicates that the existing runoff from the site currently sheet flows along the ground surface to the south into an existing drainage system located along Kaaahi Street and Kikowaena Street. The total existing flow rate from the 1.31-acre fire station site (existing Lahaina Fire Station and proposed project) is 4.39 cubic feet per second (cfs). See **Appendix "E"**.

b. Potential Impacts and Mitigation Measures

Implementation of the project will increase the existing flow rate within the fire station site by 0.18 cfs (from 4.39 cfs to 4.57 cfs). The proposed drainage system for the project will include a drainage inlet, underground storm drainage chamber, drain manhole, and an overflow drain line connecting to the existing drainage system along Kaaahi Street. The project will provide for an underground storm water chamber to provide quantity control for the project. The stormwater chamber is designed to store the difference between a 50-year, 1 hour storm at the proposed developed condition and the existing condition. In other words, the proposed drainage system will retain 100 percent of the increase in runoff generated by the project. Flows exceeding the 50-year capacity of the underground stormwater chamber will be discharged into the existing drainage system along Kaaahi Street. The

chamber will also act as a stormwater quality control BMP by allowing pollutants in the low-flows to be collected in the gravel under the chambers.

Directing a portion of the surface flow through grassed areas and installation of an embedment stone layer below the underground stormwater chambers are permanent BMPs being considered to improve the quality of existing runoff entering the drainage system along Kaaahi Street. The PDR concludes that as the proposed drainage system will reduce existing flows across the fire station site, there will be no adverse impacts on the existing drainage system downstream, neighboring properties or roadways. Refer to **Appendix "E"**.

5. Electrical, Telephone, and Cable Television Systems

a. Existing Conditions

Electrical, telephone, and cable television services for the West Maui region are provided by Maui Electric Company, Ltd., Hawaiian Telcom, and Oceanic Time Warner Cable Company, respectively. These distribution systems consisting of underground and overhead lines are located along Honoapiilani Highway.

b. Potential Impacts and Mitigation Measures

The electrical improvements for this project include new lighting for the Fire Apparatus Bay Building. The requirements of the proposed improvements will be discussed with Maui Electric Company and Hawaiian Telcom during the design phase and prior to the commencement of construction. There are no improvements for cable television services planned for this proposed project.

In summary, the proposed action is not anticipated to have an adverse impact on existing electrical, telephone or cable television systems, nor is it expected to extend existing service area limits.

E. CUMULATIVE AND SECONDARY IMPACTS

Cumulative impacts are defined as impacts on the environment which result from the incremental impact of an action when added to other past, present, and reasonably

foreseeable future actions, regardless of what agency or person undertakes such other actions. Secondary impacts are those which have the potential to occur later in time or farther in distance, but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of the project.

The scope of the proposed project is limited to the construction of a new 2,838 sq. ft. fire station apparatus bay building and related improvements. The new building will serve the existing Lahaina Fire Station by accommodating a fire truck, utility vehicle and boat/trailer combination and sleeping quarters for two (2) personnel, a weight/fitness room, as well as a restroom/shower and laundry facilities.

Given the limited scope of the proposed project, there are no significant cumulative or secondary impacts anticipated which are considered adverse in the context of regulatory and statutory requirements, and common practice mitigation measures.

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

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

A. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes four (4) major land use districts in which all lands in the state are placed. These districts are designated as "Urban", "Rural", "Agricultural", and "Conservation". The project site is located within the "Agricultural" district. See **Figure 8**. The proposed improvements are a permitted use within the "Agricultural" designation. The project represents an improvement to the existing Lahaina Fire Station, which qualifies as a public institution/building that is necessary for agricultural practices. As such, the proposed project is a permitted use in the State "Agricultural" district.

B. HAWAII STATE PLAN

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. Examples of State objectives and policies relevant to the proposed project are as follows:

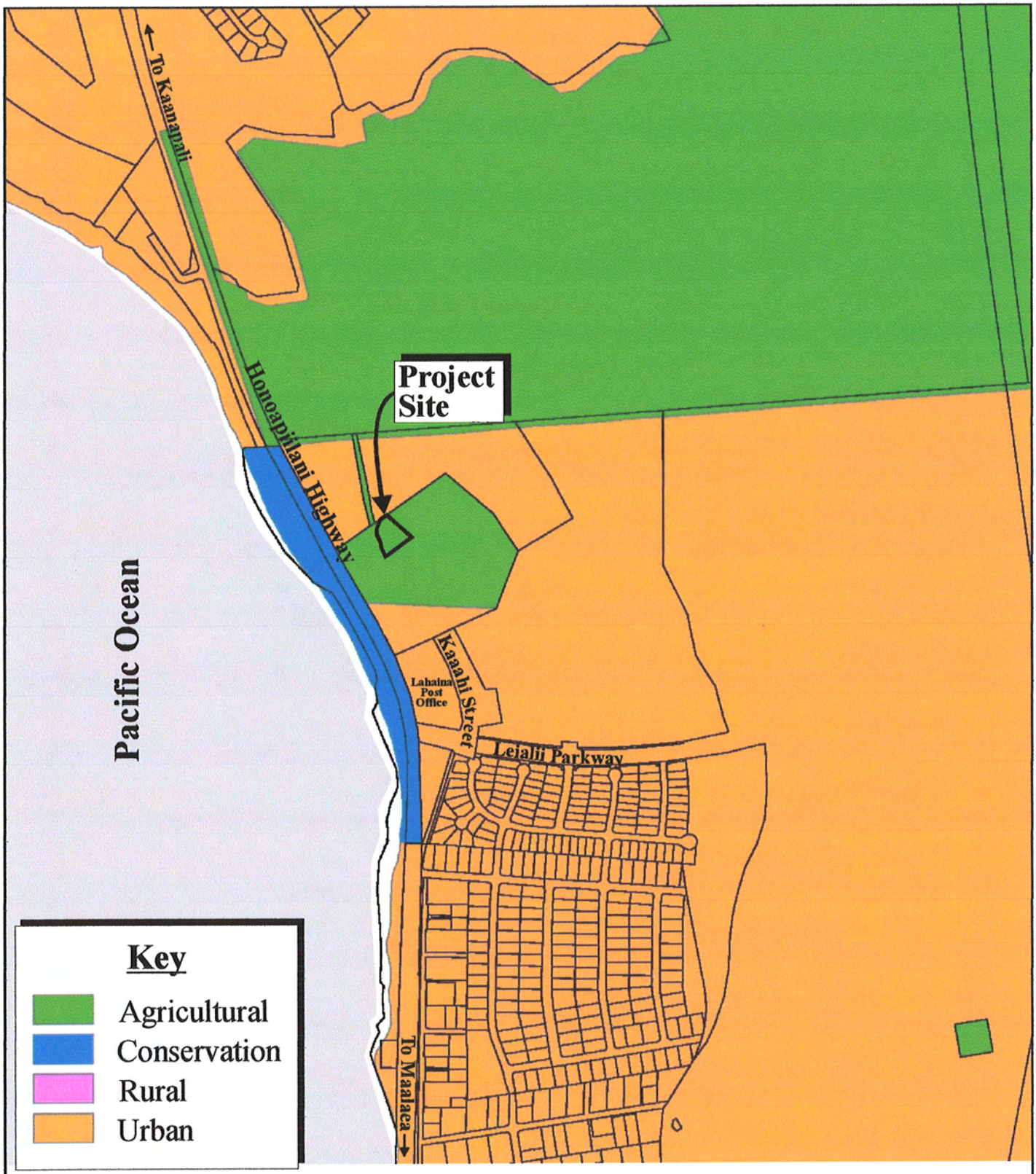
1. Section 226-14, Objective and policies for facility systems – in general. To achieve this objective, it shall be State policy to:

a. Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

b. Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.

c. Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

The objective of the proposed project is to provide for new facilities which will enhance and support the DFPS ability to service the West Maui community. The proposed Fire Apparatus Bay Building and related improvements will ensure that there is sufficient fire protection and



Source: State Land Use Commission

Figure 8 Proposed Apparatus Bay Building for the Lahaina Fire Station

State Land Use Designations Map

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

MUNEKIYO & HIRAGA, INC.

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public safety services to meet the existing and future demand for services in the region. In this regard, the proposed project is consistent with the goals, objective, policies, and priorities of the Hawaii State Plan.

C. MAUI COUNTY GENERAL PLAN

As indicated by the Maui County Charter, the purpose of the general plan shall be to:

> *... indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density; land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.*

Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan. The Countywide Policy Plan was adopted as Ordinance No. 3732 on March 24, 2010. The Maui Island Plan is currently in the process of review and formulation by the Maui County Council.

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

> *The countywide policy plan shall provide broad policies and objectives which portray the desired direction of the County's future. The countywide policy plan shall include:*
>
> 1. *A vision for the County;*
> 2. *A statement of core themes or principles for the County; and*
> 3. *A list of countywide objectives and policies for population, land use, the environment, the economy, and housing.*

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

1. Excellence in the stewardship of the natural environment and cultural resources;

2. Compassion for and understanding of others;

3. Respect for diversity;

4. Engagement and empowerment of Maui County residents;

5. Honor for all cultural traditions and histories;

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

7. Commitment to self-sufficiency;

8. Wisdom and balance in decision making;

9. Thoughtful, island appropriate innovation; and

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

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

1. Natural environment

2. Local cultures and traditions

3. Education

4. Social and healthcare services

5. Housing opportunities for residents

6. Local economy

7. Parks and public facilities

8. Transportation options

9. Physical infrastructure

10. Sustainable land use and growth management

11. Good governance

With respect to the Lahaina Fire Station Apparatus Bay Building and related improvements, the following goals, objectives, policies and implementing actions are illustrative of the project's compliance with the Countywide Policy Plan:

IMPROVE PARKS AND PUBLIC FACILITIES

Goal: A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.

Objective:

- Expand access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.

Policy:

- Promote the development and enhancement of community centers, civic spaces, and gathering places throughout our community.

In summary, the proposed project is consistent with the themes and principles of the Countywide Policy Plan. The proposed project will improve the conditions of the existing fire protection facilities in the West Maui region and will ensure that there are sufficient fire protection services to accommodate population growth in accordance with the West Maui Community Plan.

D. WEST MAUI COMMUNITY PLAN

Within Maui County, there are nine (9) community plan regions. From a General Plan implementation standpoint, each region is governed by a community plan which sets forth desired land use patterns, as well as goals, objectives, policies, and implementing actions for a number of functional areas including infrastructure-related parameters.

The project site is located within the West Maui Community Plan region and is designated "Public/Quasi-Public" in the community plan. See **Figure 9**. The proposed project is in keeping with, among others, the following goals, objectives, and policies of the West Maui Community Plan.

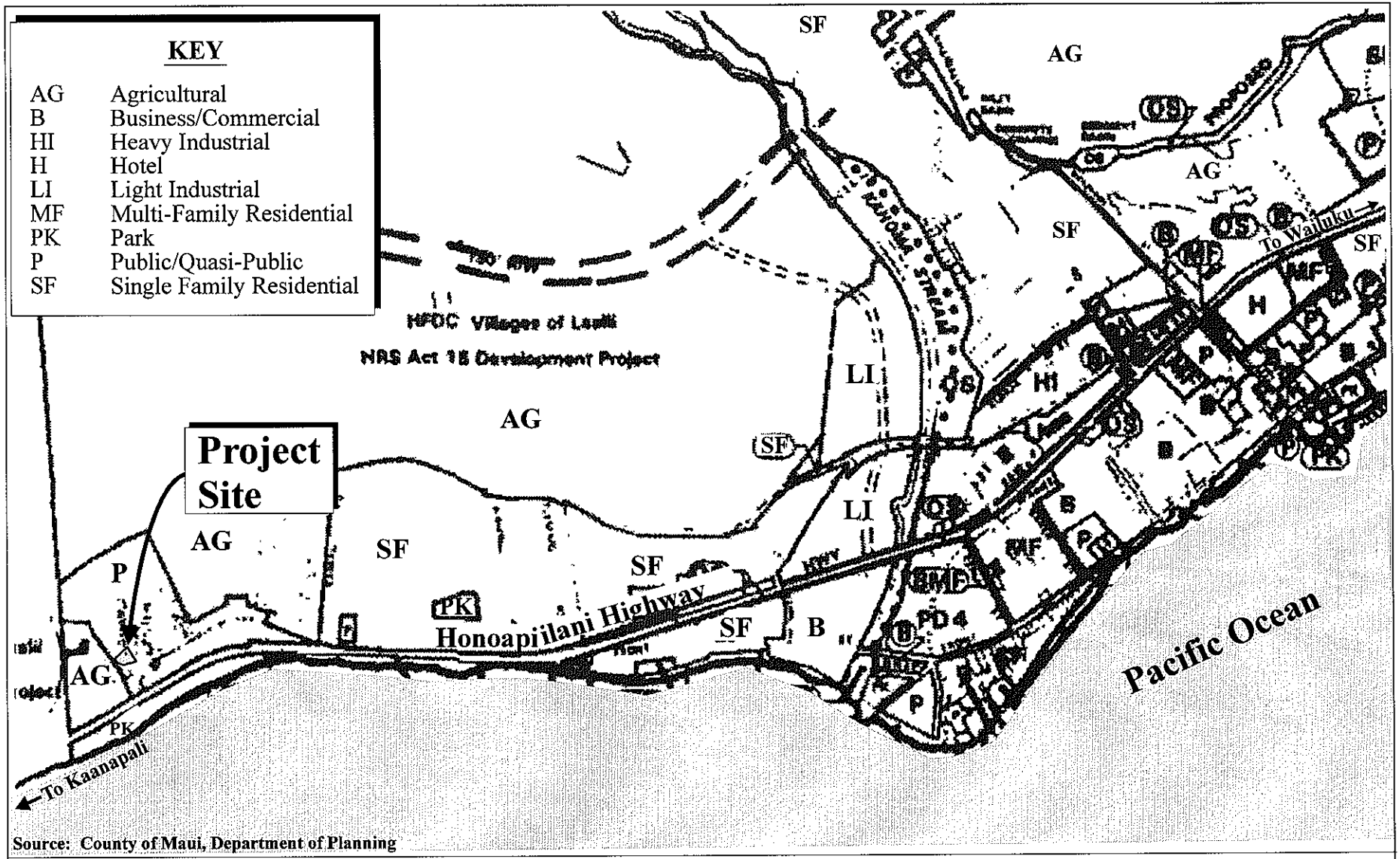

Figure 9

Proposed Apparatus Bay Building for the Lahaina Fire Station

Community Plan Designations Map

NOT TO SCALE

Prepared for: County of Maui, Dept. of Fire and Public Safety

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LAND USE

Goal

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

Objectives and Policies for the West Maui Region in General

- Special Permits in the State Agricultural Districts may be allowed only: (1) to accommodate public and quasi-public uses.

SOCIAL INFRASTRUCTURE

Goal

Develop and maintain an efficient and responsive system of public service which promotes a safe, healthy, and enjoyable lifestyle, and offers opportunities for self improvement and community well being.

Health and Public Safety

Objectives and Polices

- Enhance fire protection for multi-story buildings.

Implementing Actions

- Expand the fire-fighting capabilities at the existing fire station by providing ladder company equipment for multi-story fire fighting.

GOVERNMENT

Goal

Coordinate and direct future public and private development, including capital improvement projects, consistent with the Community Plan and the island-wide directed and managed growth plan required by the General Plan.

Objectives and Policies

- Coordinate and direct future public and private development, including capital improvement projects, consistent with the Community Plan and the island-wide directed and managed growth plan required by the General Plan.
- Insure that adequate infrastructure is or will be available to accommodate planned development.
- Improve the availability of government services to the community.

As noted, the proposed project is in conformance with various goals, objectives, and policies of the West Maui Community Plan. The project will be undertaken to satisfy the current and future demands for fire protection safety in the West Maui region and is consistent with the underlying "Public/Quasi-Public" community plan designations.

E. COUNTY ZONING

The lands underlying the project sites are zoned "Agricultural" by Maui County zoning. According to Maui County Code Section 19.30A.060, Special Uses, "Public and quasi-public institutions which are necessary for agricultural practices" are considered a permitted special use within "Agricultural" zoned lands. The Planning Department has determined via letter dated October 1, 2010 that the proposed project qualifies as such a use and requires processing of a County Special Use Permit (CUP). See **Appendix "F"**. As such the DFPS will be submitting a CUP application for review and action by the Maui Planning Commission.

F. COASTAL ZONE MANAGEMENT/SPECIAL MANAGEMENT AREA

The Hawaii Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaii's coastal zone. The proposed project site has been determined by the Department of Planning to be located within the County of Maui's Special Management Area. As set forth in Chapter 205A, HRS, this section addresses the project's relationship to applicable coastal zone management considerations.

1. Recreational Resources

Objective

Provide coastal recreational opportunities accessible to the public.

Policies

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

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

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

(ii) Requiring replacement of coastal resources having significant fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;

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

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

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

consistent with public safety standards and conservation of natural resources;

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

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

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

Response: The proposed project is considered an important element in enhancing public safety in West Maui. There are no adverse effects on coastal-related recreational facilities resulting from the project.

2. **Historic Resources**

Objective

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

Policies

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Response: An archaeological field inspection was undertaken for the subject property. The archaeological field inspection report noted the developed condition of the property and recommended archaeological monitoring for the project. Refer to **Appendix "C".** An Archaeological Monitoring Plan has been prepared for the

project and is currently being reviewed by SHPD. Refer to **Appendix "C-1"**. In the event archaeological features are inadvertently encountered during construction, work will stop in the immediate vicinity of the find and applicable mitigation protocols will be initiated in coordination with the State Historic Preservation Division.

3. Scenic and Open Space Resources

Objective

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

Policies

(A) Identify valued scenic resources in the coastal zone management area;

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

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

(D) Encourage those developments which are not coastal dependent to locate in inland areas.

Response: The project site is not located within a significant coastal view corridor. The proposed improvements, sited adjacent to existing public buildings and facilities, are not anticipated to have an adverse impact on shoreline views or open space resources.

4. Coastal Ecosystems

Objective

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

Policies

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

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

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

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

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

Response: Best Management Practices (BMPs) will be implemented during construction to mitigate the potential for the adverse effects on downstream coastal ecosystems. All runoff generated by the proposed project will be retained onsite in the proposed drainage system and will not have an adverse impact to downstream or neighboring properties.

5. Economic Uses

Objective

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

Policies

(A) Concentrate coastal dependent development in appropriate areas;

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

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

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

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

Response: Short-term employment opportunities will be generated during project construction. There are no significant, adverse economic impacts associated with the proposed project. Further, the proposed action is not contrary to the objective and policies for economic use.

6. Coastal Hazards

Objective

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

Policies

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

(D) Prevent coastal flooding from inland projects.

Response: According to the Flood Insurance Rate Map for the area, the project site is located within Zone X (unshaded), an area of minimal flooding. In addition, the project site is not located within environmentally sensitive areas that are subject to natural hazards. The proposed project is not anticipated to affect the region's susceptibility to coastal hazards.

7. Managing Development

Objective

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

Policies

(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

(B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and

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

Response: Opportunities for public understanding of the proposed project are provided for during the HRS, Chapter 343 Environmental Assessment (EA), SMA Use Permit and CUP Permit processes. All aspects of development will be conducted in accordance with applicable Federal, State, and County standards. Early consultation with agencies and interested parties was conducted for formulation of this Draft EA.

8. Public Participation

Objective

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

Policies

(A) Promote public involvement in coastal zone management processes;

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

(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: As previously mentioned, the EA document will be processed in accordance with Chapter 343, HRS, and opportunity for comment by agencies and the public will be provided. The proposed project does not contradict the objectives of public awareness, education, and participation. Further, the Maui Planning

Commission review and action on the SMA Use Permit and CUP applications will require a formal public hearing.

9. Beach Protection

Objective

Protect beaches for public use and recreation.

Policies

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

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

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

Response: In broad objective terms, the proposed project will utilize appropriate BMPs to manage overall drainage and erosion control for the project site. Further, the proposed project will not involve construction near shoreline areas and is not, therefore, anticipated to have an adverse effect on the local beach environment.

10. Marine Resources

Objective

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

Policies

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

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

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

(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: Appropriate BMPs and erosion control measures will be implemented to ensure that coastal ecosystems are not adversely impacted by construction activities.

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

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

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

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

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

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

Response: Lighting design for the Fire Apparatus Bay Building will be minimal and will utilize downward lit lighting fixtures. All lighting will comply with applicable requirements of the County of Maui Outdoor lighting ordinance.

IV. SUMMARY OF UNAVOIDABLE ENVIRONMENTAL IMPACTS

IV. SUMMARY OF UNAVOIDABLE ENVIRONMENTAL IMPACTS

The proposed project will result in certain unavoidable construction-related environmental impacts as outlined in Chapter II.

In the short-term, construction associated with the project will generate noise impacts. These impacts will be limited to the immediate vicinity of the project construction areas. Sound attenuating construction equipment will be used, where practicable and necessary, to mitigate noise impacts caused by construction. Coordination with the County of Maui, Department of Parks and Recreation will be undertaken by the applicant so as not to interfere with civic center activities.

Unavoidable air quality impacts will also arise as a result of construction activities, such as the generation of dust and other airborne pollutants. Appropriate BMPs will be incorporated in the construction process to mitigate adverse impacts such as frequent watering of exposed surfaces and regular maintenance of construction equipment to minimize construction-related impacts.

In the long term, the proposed project is not anticipated to result in any significant, long-term, adverse environmental effects.

V. ALTERNATIVES TO THE PROPOSED ACTION

V. ALTERNATIVES TO THE PROPOSED ACTION

The DFPS evaluated the following alternatives in selecting the scope of work for the proposed project:

A. PREFERRED ALTERNATIVE

The proposed development plan, outlined in Section I. Project Overview, represents the preferred alternative. This alternative, which entails an addition to the existing Lahaina Fire Station, presents the most viable alternative in terms of the need to protect the specialized DFPS equipment that is being stored on the existing Lahaina Fire Station property and relieving the over-crowding conditions and providing improved support services to the Station's personnel.

B. NO ACTION ALTERNATIVE

The No Action Alternative would continue the condition of the DFPS' specialized fire fighting equipment being exposed to the elements and the crowded conditions of the existing Lahaina Fire Station for its personnel. These exposed conditions significantly decrease the longevity of the equipment and result in increased repair and maintenance costs for the DFPS. The living quarters at the fire station serve as "home" for the fire fighters during their shifts and the existing station is at maximum capacity for sleeping quarters and the laundry facilities are located outdoors. To continue the existing conditions would not serve in the best interests of the DFPS services in the West Maui area or their personnel.

C. POSTPONED ACTION ALTERNATIVE

Similar to the no action alternative, the postponed action alternative does not address the current need for the protection of DFPS equipment and additional facilities in the West Maui region.

D. ALTERNATIVE LOCATIONS

Alternative locations were not extensively considered due to cost considerations and the space availability adjacent to the existing Lahaina Fire Station. The proposed Fire Apparatus Bay Building and related improvements at the proposed LCC site would require limited modifications to the existing water, wastewater, drainage and electrical systems already in place onsite. Furthermore, the site for the proposed apparatus bay addition needed to be located in close proximity to the existing Lahaina Fire Station to provide for functionality and operational considerations.

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The development of the proposed project would involve the commitment of State lands and County of Maui funds. In addition, labor and material resources would be expended as part of the project's construction phase. Commitments of these resources are considered irreversible and irretrievable. These commitments, however, are also considered appropriate in the context of providing adequate fire protection and rescue facilities and equipment to satisfy the current and future demands of the West Maui region. Development of the proposed expansion will involve the commitment of land for a needed public facility which would preclude other land use options for the site. This commitment of land resources, however, is consistent with existing and future land uses in and around the project site.

VII. SIGNIFICANCE CRITERIA ASSESSMENT

VII. SIGNIFICANCE CRITERIA ASSESSMENT

The "Significance Criteria", Section 12 of the Administrative Rules, Title 11, Chapter 200, "Environmental Impact Statement Rules", were reviewed and analyzed to determine whether the proposed project will have significant impacts on the environment. The following criteria and analysis are provided:

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

   There are no significant natural resources which will be impacted by the proposed Fire Apparatus Bay Building and related improvements. Biological resources identified in the area do not include rare or threatened species, nor are there sensitive natural environments (e.g., wetlands and streams) in the vicinity of the project site. There are no archaeological or culturally significant features in the project vicinity as well.

2. **Curtails the range of beneficial uses of the environment.**

   The proposed project will not curtail the range of beneficial uses of the environment. Best Management Practices (BMPs) will be employed where needed, to minimize any construction-related impacts to the environment.

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

   The proposed project does not conflict with the State's Environmental Policy and Guidelines as set forth in Chapter 344, Hawaii Revised Statutes (HRS).

4. **Substantially affects the economic welfare, social welfare, and cultural practices of the community or State.**

   The proposed project will directly benefit the local economy by providing construction and construction-related employment in the short term. The project will

provide increased fire protection and public safety benefits for the community. No impacts to cultural practices are anticipated as a result of the project.

5. **Substantially affects public health.**

No adverse impacts to the public health and welfare are anticipated as a result of the proposed expansion.

The proposed project will have an indirect beneficial effect on public health by enhancing existing DFPS services in the West Maui region.

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

The proposed project will provide benefits to the existing and future West Maui community by enhancing and supporting fire protection and public safety services provided by the DFPS.

The project is not anticipated to have any adverse effects on public services, such as police, medical, educational, and solid waste collection services, nor will it have a negative impact on population parameters for the West Maui region.

From a land use standpoint, the proposed project, is in keeping with the objectives and policies of the West Maui Community Plan, complements and is compatible with surrounding land uses.

The proposed project is not anticipated to adversely impact water and wastewater capacities and facilities. Post-development onsite surface runoff will be accommodated by the proposed drainage system improvements.

7. **Involves a substantial degradation of environmental quality.**

Aside from the short-term impacts related to dust and noise generated during the construction phase, there will not be a degradation of environmental quality. These potential dust and noise impacts will be mitigated through utilization of appropriate BMPs.

The proposed project is not anticipated to adversely affect the open space and scenic character of the area. Additionally, there are no sensitive environments (e.g., wetlands, streams, erosion prone areas, etc.) which are likely to be affected by the proposed action.

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

The proposed project does not involve a commitment to larger actions. The impacts assessed in this document are based on the entire action.

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

As previously noted, the flora and fauna in the area are generally limited to non-native, abundant species. There are no rare, threatened, or endangered species of flora, fauna, or avifauna and their habitats in the area surrounding the project site which will be adversely affected by the proposed project.

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

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, and installation of dust screens will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper equipment and vehicle maintenance, will be used during construction activities. Construction noise impacts will be mitigated through compliance with the provisions of the State of Hawaii, Department of Health Administrative Rules Title 11, Chapter 46, "Community Noise Control". These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels set forth in the Chapter 46 rules. No long-term air or water quality or ambient noise level impacts are anticipated.

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

The project site is not located within and would not affect environmentally sensitive areas. The project site is located within Flood Zone X (unshaded), an area of minimal flooding, and thus is not subject to flooding or tsunami inundation. Soils

underlying the project site are not erosion-prone and there are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site. No other foreseeable environmental effects are anticipated in conjunction with the proposed expansion.

12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.

The project site is not part of an identified scenic vista or viewplane. As such, project implementation will not affect scenic and open space resources, nor will it adversely impact the visual character of the areas surrounding the project site.

13. Requires substantial energy consumption.

The proposed project will involve a limited commitment of fuel for construction equipment, vehicles, and machinery during construction and maintenance activities. However, the project's construction activities are not anticipated to result in substantial consumption of energy resources.

In addition, coordination with Maui Electric Company (MECO) will be undertaken to ensure all operational parameters are addressed for the proposed project. In the long term, the project will create an additional demand for electricity. However, this demand is not deemed substantial or excessive within the context of the region's overall energy consumption.

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

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

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

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

1. Ranae Ganske-Cerizo, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

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

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

4. Russ K. Saito, State Comptroller
Department of Accounting and General Services
1151 Punchbowl Street, #426
Honolulu, Hawaii 96813

5. Sandra Lee Kunimoto, Chair
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814-2512

6. Georgina K. Kawamura, Director
Department of Budget and Finance
P. O. Box 150
Honolulu, Hawaii 96810

7. Karen Seddon, Executive Director
Hawaii Housing Finance and Development Corporation
677 Queen Street
Honolulu, Hawaii 96813

8. Theodore E. Liu, Director
State of Hawaii
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

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

10. Heidi Meeker
Planning Section
Office of Business Services
Department of Education
809 Eighth Avenue
Honolulu, Hawaii 96816

cc: Lindsay Ball, Complex Area Superintendent (Lanai/Molokai/ Hana/Lahaina)

11. Kaulana Park, Chairman
Department of Hawaiian Home Lands
P. O. Box 1879
Honolulu, Hawaii 96805

12. Chiyome Fukino, M.D., Director
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814

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

14. Patti Kitkowski, Acting
District Environmental Health
Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

15. Laura H. Thielen, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

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

17. Michael Formby, Interim Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

cc: Fred Cajigal

18. Katherine Kealoha, Director
Office Of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawaii 96813

19. Clyde Nāmu`o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

20. Abbey Seth Mayer, Director
State of Hawaii
Office of Planning
P.O. Box 2359
Honolulu, Hawaii 96804

21. Dan Davidson, Executive Officer
State of Hawaii
State Land Use Commission
P. O. Box 2359
Honolulu, Hawaii 96804

22. Lori Tsuhako, Director
County of Maui
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

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

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

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

26. Cheryl Okuma, Director
County of Maui
Department of Environmental Management
2200 Main Street, Suite 176
Wailuku, Hawaii 96793

27. Donald Medeiros, Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawaii 96793

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

29. **Hawaiian Telcom**
60 South Church Street
Wailuku, Hawaii 96793

30. Greg Kauhi, Manager, Customer Operations
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96733

31. Joe Pluta, President
West Maui Improvement Foundation
P. O. Box 10338
Lahaina, Hawaii 96761

32. Zeke Kalua, Executive Director
West Maui Taxpayers Association
P.O. Box 10338
Lahaina, Hawaii 96761

NOV 15 2010

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF:

November 10, 2010

Regulatory Branch

File Number POH-2010-00311

Munekiyo & Hiraga, Inc.
Attention: Mark A. Roy
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

We have received your request dated November 4, 2010 for the Department of the Army to review and comment on the proposed Apparatus Bay Building and related improvements for the Lahaina Fire Station at TMK (2) 4-5-021:016, Wahikuli, Island of Maui, Hawaii. We have assigned the project the reference number **POH-2010-00311**. Please cite the reference number in any future correspondence concerning this project. We completed our review of the submitted document pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404).

Section 10 requires that a Department of the Army (DA) permit be obtained from the U.S. Army Corps of Engineers (Corps) prior to undertaking any construction, dredging and other activities occurring in, over, or under navigable waters of the U.S. The line of jurisdiction extends to the Mean High Water Mark (MHWM) for tidal waters. Section 404 requires that a DA permit be obtained for the discharge (placement) of dredge and/or fill material into waters of the U.S., including wetlands. The line of jurisdiction extends to the High Tide Line as measured by the Mean Higher High Water Mark (MHHWM) for tidally influenced waters, the Ordinary High Water Mark (OHWM) for non-tidal waters and the approved delineated boundary for wetlands.

Based on the information you submitted, it appears the review area consists entirely of uplands and is absent of waters of the U.S., including adjacent wetlands, subject to Corps jurisdiction. We anticipate any proposed development activities will not involve the placement or discharge of dredged and/or fill material into waters of the U.S.; therefore, it appears a **DA permit will not be required**. This determination does not relieve you of the responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law for your proposed work

Thank you for contacting us regarding this project and providing us with the opportunity to comment. Should you have any questions, please contact Ms. Jessie Pa'ahana at *808.438.0391* or via e-mail at *Jessie.K.Paahana@usace.army.mil*. Please be advised you can provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at *http://per2.nwp.usace.army.mil/survey.html*.

Sincerely,

for George P. Young, P.E.
Chief, Regulatory Branch

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAPUNN FUKUDA

MARK ALEXANDER BEAL

March 7, 2011

George P. Young
Chief, Regulatory Branch
U.S. Army Corps of Engineers
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii, POH-2010-00311

Dear Mr. Young:

Thank you for your letter, dated November 10, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui, Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter.

We acknowledge your determination that the project consists entirely of uplands and that a Department of Army permit will not be required. The DFPS understands that this determination does not relieve it of the responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law.

We appreciate the input provided by your department and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
Diane Kodama, AECOM
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NOV 29 2010

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
COMPTROLLER

SANDI YAHIRO
DEPUTY COMPTROLLER

(P)1278.0

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

NOV 24 2010

Mr. Mark Alexander Roy, AICP, Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Roy:

Subject: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2) 4-5-021:016(por), Wahikuli, Maui, Hawai'i

Thank you for the opportunity to provide comments on the Early Consultation Request for the Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK: (2) 4-5-021:016 (por), Wahikuli, Maui, Hawai'i. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities, and we have no comments to offer at this time.

If you have any questions, please call me at 586-0400 or have your staff call Mr. Clarence Kubo of the Public Works Division at 586-0488.

Sincerely,

Russ K Saito

RUSS K. SAITO
State Comptroller

4

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAPLYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

Russ K. Saito
State Comptroller
Department of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Saito:

Thank you for your letter, dated November 24, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we acknowledge the determination that the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

We appreciate the input provided by your department and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
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NOV 18 2010

LINDA LINGLE
GOVERNOR

MAJOR GENERAL ROBERT G. F. LEE
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE

PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

November 16, 2010

Mr. Mark Alexander Roy, AICP
Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2) 4-5-021:016(por.) Wahikuli, Maui, Hawaii

Thank you for the opportunity to comment on this project. We have no recommendations to make at this time. We anticipate reviewing the Draft Environmental Assessment when it is completed and will make any appropriate comments at that time.

If you have any questions, please call Mr. David H. Smith, State Civil Defense Population Protection Planner, at (808) 733-4300, ext. 576.

Sincerely,

EDWARD T. TEIXEIRA
Vice Director of Civil Defense

6

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAPUONN FURUTO

MARK ALEXANDER ROY

March 7, 2011

Edward Teixeira
Vice Director of Civil Defense
Department of Defense
Office of the Director of Civil Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, Hawaii 96816

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Teixeira:

Thank you for your letter, dated November 16, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui, Department of Fire and Public Safety (DFPS), we acknowledge that your office does not have any recommendations to make at this time.

We appreciate the input provided by your department and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
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LINDA LINGLE
GOVERNOR

NOV 22 2010

KATHRYN S. MATAYOSHI
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES
[redacted]

November 16, 2010

Mr. Mark Alexander Roy, AICP, Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: Early Consultation for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2) 4-5-021:016(por.), Wahikuli, Maui, Hawaii

The Department of Education (DOE) has reviewed your letter requesting early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. Based on the project details provided, the DOE has no comment to offer at this time.

Should you have any questions, please do not hesitate to call Roy Ikeda of the Facilities Development Branch at (808) 377-8301.

Sincerely,

Duane Y. Kashiwai
Public Works Administrator

DYK:to

c: Lindsay Ball, CAS, Hana/Lahaina/Lanai/Molokai Complex Areas

NOV 15 2010

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-I-3426

November 10, 2010

Mr. Mark Alexander Roy, AICP
Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station; Wahikuli, Maui, Hawaii TMK: (2) 4-5-021: 016 (por.)

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time, but reserve the right to future comments. We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist). The Hawaii State Department of Health, Built Environment Working Group, recommends that State and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

If there are any questions about these comments please contact the Environmental Planning Office at 586-4337.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON, Acting Manager
Environmental Planning Office

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAREYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

Genevieve Salmonson, Acting Manager
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii, EPO-1-3426

Dear Ms. Salmonson:

Thank you for your letter, dated November 10, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter:

- The standard comments as listed on the department's website, have been reviewed. We are enclosing a list of applicable comments as well as the applicant's response to each. See **Exhibit "A"**.

- The Healthy Community Design Smart Growth Checklist will be reviewed during the design phase of the project and healthy built environment principles included in the project where feasible.

We appreciate the input provided by your office and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
Attachment
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety (w/attachment)
Wendy Taomoto, County of Maui, Department of Management (w/attachment)
Terry McFarland, Architects Hawaii, Ltd. (w/attachment)
Diane Kodama, AECOM (w/attachment)
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REVIEW OF STANDARD COMMENTS RELATING TO STATE ENVIRONMENTAL HEALTH PROGRAMS

Environmental Planning Office

- *Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (http://www.state.hi.us/health/about/rules/11-54.pdf), of all potentially affected water bodies.*

  Response:

  Coastal water off of Wahikuli State Wayside Park is considered to be a potentially affected water body in the context of analyzing the potential impacts of the proposed apparatus bay and associated improvements at the Lahaina Fire Station. Wahikuli State Wayside Park is designated a Class A water body by the State Department of Health.

- *Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.*

  Response:

  There are no existing NPDES permits or related connection permits governing water quality management at the project site.

- *Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.*

  Response:

  There are no existing water quality actions being undertaken at the project site.

- *Identify all potentially affected water bodies that appear on the current List of Impaired Waters in Hawaii Prepared under Clean Water Act.*

Response:

Wahikuli State Wayside Park is classified as a medium priority impaired water by the current List of Impaired Waters in Hawaii.

- *If the proposed project involves potentially affected water bodies that appear on the current List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d), identify and quantify expected changes in the following site and watershed conditions and characteristics.*

  - *Surface permeability*
  - *Hydrologic response of surface (timing, magnitude, and pathways)*
  - *Receiving water hydrology*
  - *Runoff and discharge constituents*
  - *Pollutant concentrations and loads in receiving waters*
  - *Aquatic habitat quality and integrity of aquatic biota*

  Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

  Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Response:

A Preliminary Drainage Report (PDR) has been prepared for the proposed project. The PDR describes the hydrological characteristics of the project site under both existing and with-project conditions. As discussed in the Draft EA, a program of Best Management Practices (BMPs) will be implemented during construction to prevent the release of sedimentation in drainage flows across the property. From a long-term operational standpoint, drainage improvements will be constructed within the subject property to retain minimally all project-related increases in stormwater run-off such that there will be no impacts generated on downstream properties or nearby coastal waters such as Wahikuli State Wayside Park. With

implementation of the foregoing mitigation measures, the proposed project is not expected to present impacts on downstream properties, including Wahikuli State Wayside Park.

- *We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.*

  We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

Response:

With implementation of BMPs during construction and development of the proposed comprehensive drainage system, the proposed apparatus bay and related improvements are not expected to significantly adversely impact hydrology, water quality and aquatic and riparian ecosystems in the vicinity of the project site. There are no channel modifications proposed as part of the project.

Hazard Evaluation & Emergency Response Office

- *A Phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopments. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.*

Response:

The project site is part of the Lahaina Civic Center property and has been occupied by the Lahaina Fire Station since 1973 for approximately 38 years. The proposed apparatus bay building will provide additional vehicle storage and sleeping quarters for this existing DFPS facility. Given the existing developed condition of the Lahaina Fire Station property, a limited Phase

II Environmental Site Assessment (ESA) Report was completed in June 2010 by Environmental Risk Analysis LLC to determine the presence or absence of Total Petroleum Hydrocarbon-Diesel (TPH-D) in surface soils in vicinity of a currently used diesel Aboveground Storage Tank (AST) that is proposed for removal as part of the proposed project. The assessment was also conducted to determine if an onsite shed proposed for demolition requires special disposal considerations based on leachable lead concentrations.

In regards to the AST, Diesel Range Organics (DRO) were not detected above the State Department of Health (DOH) Environmental Action Limit (EAL) of 500 mg/kg in any of the surface soil samples collected. The limited Phase II ESA report recommends that an onsite Photoionization Detector be used to determine additional impacts in the subsurface soils and beneath the concrete pads during AST and pad removal. Additionally, the report recommends that confirmation soil samples beneath the concrete pad be collected and analyzed for TPH-D following removal activities, as required under Hawaii State Law.

Within the onsite shed, lead was not detected above the RCRA hazardous waste characterization standard of 5 mg of lead per liter (mg/L) of solution. These results indicate that the shed may be demolished and debris disposed at a landfill.

Clean Air Branch

- *A significant potential for fugitive dust emissions exists during all phases of construction and operations. Proposed activities that occur in proximity to existing residences, businesses, public areas or thoroughfares, exacerbate potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. The plan, which does not require DOH approval, would help with recognizing and minimizing the dust problems from the proposed project.*

  Activities must comply with the provisions of Hawaii Administrative Rules, § 11-60-1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance problems.

  The contractor should provide adequate measures to control the fugitive dust from the road areas and during the various phases of construction. Examples of measures that can be implemented to control dust include, but are not limited to, the following:

a) *Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;*
b) *Providing an adequate water source at the site prior to start-up of construction activities;*
c) *Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;*
d) *Minimizing dust from shoulders and access roads;*
e) *Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and*
f) *Controlling dust from debris being hauled away from the project site.*

Response:

A dust management protocol, including BMPs, will be developed for the project to minimize the potential for dust-related impacts from construction. Project-related activities will comply with applicable provisions of Section 11-60-1-33, HAR.

Solid and Hazardous Waste Branch

- *The state regulations for hazardous waste are in Chapters 11-260 to 11-280, Hawaii Administrative Rules (HAR). These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste. Generators, transporters and treatment, storage and disposal facilities of hazardous waste must adhere to these requirements or be subject to fines and penalties.*

Response:

The proposed project will comply with applicable requirements of HAR, Chapters 11-260 to 11-280.

- *Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.*

Response:

Construction waste for the project will be properly disposed of at an approved construction waste disposal facility. Following construction, solid waste generated within the proposed project will be collected by a private waste collection service.

- *HRS Chapter 342G encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes. Solid waste management plans should also seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.*

Response:

The applicant recognizes the benefits derived by responsible waste management and reduction measures. Solid waste management opportunities, such as designation of reuse and recycling areas within the Lahaina Fire Station will be evaluated during the design phase of the project.

Noise, Radiation, and Indoor Air Quality Branch

- *Project activities shall comply with Chapter 11-39 (Air Conditioning and Ventilating) and 11-46 (Community Noise Control) of the Administrative Rules of the Department of Health.*

Response:

The proposed project will comply with the applicable requirements of HAR Chapter 11-39 and Chapter 11-46 regulating indoor air quality, and community noise control, respectively.

DEC 01 2010

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
DOH/CWB

11055PSW.10

November 29, 2010

Mr. Mark Alexander Roy, AICP
Program Manager
Munekio & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: **Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station**
Wahikuli, Island of Maui, Hawaii
TMK: (2) 4-5-021: 016(por)

The Department of Health, Clean Water Branch (CWB), has reviewed the document received November 4, 2010 regarding the subject project and offers these comments. Please note that our review is based solely on the document for the subject project and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf

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

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

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

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

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. This includes areas used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

b. Hydrotesting water,

c. Construction dewatering effluent.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI forms may be picked up at our office or downloaded from our website at http://hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html

3. For other types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 2 or Class AA waters, an NPDES individual permit will need to be obtained. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://hawaii.gov/health/environmental/water/cleanwater/forms/environmental/water/cleanwater/forms/indiv-index.html

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

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

Sincerely,

Joanna Seto

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

SW:ml

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

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

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii, 11055PSW.10

Dear Mr. Wong:

Thank you for your letter, dated November 29, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter:

1. The standard comments as listed on the department's website, have been reviewed. We are enclosing a list of applicable comments as well as the applicant's response to each. See **Exhibit "A"**.

2. We acknowledge that any projects and its potential impacts to State waters must meet the anti-degradation policy Hawaii Administrative Rules (HAR), Section 11-54-1.1), designated uses (HAR, Section 11-54-3), and water quality criteria (HAR, Section 11-54-4 to 11-54-8).

3. We further acknowledge a National Pollutant Discharge Elimination System (NPDES) permit is required for discharges of wastewater, including storm water runoff, into State waters. Coordination will be carried out with the Department of Health prior to construction to determine the NPDES permit requirements applicable to the proposed project.

4. We also note that a NPDES individual permit is required for types of discharge not covered by a NPDES general permit or wastewater discharging into Class 2 or Class AA waters. Again, coordination with the Department will be undertaken

prior to construction to determine applicable NPDES permit requirements for the project.

5. Lastly, we acknowledge that all discharges related to the project construction or operation, whether or not NPDES permit coverage and/or 401 Water Quality Certification are required, must comply with the State's Water Quality Standards.

We appreciate the input provided by your office and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
Attachment
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety (w/attachment)
Wendy Taomoto, County of Maui, Department of Management (w/attachment)
Terry McFarland, Architects Hawaii, Ltd. (w/attachment)
Diane Kodama, AECOM (w/attachment)
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REVIEW OF STANDARD COMMENTS RELATING TO STATE ENVIRONMENTAL HEALTH PROGRAMS

Environmental Planning Office

- *Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (http://www.state.hi.us/health/about/rules/11-54.pdf), of all potentially affected water bodies.*

  Response:

  Coastal water off of Wahikuli State Wayside Park is considered to be a potentially affected water body in the context of analyzing the potential impacts of the proposed apparatus bay and associated improvements at the Lahaina Fire Station. Wahikuli State Wayside Park is designated a Class A water body by the State Department of Health.

- *Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.*

  Response:

  There are no existing NPDES permits or related connection permits governing water quality management at the project site.

- *Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.*

  Response:

  There are no existing water quality actions being undertaken at the project site.

- *Identify all potentially affected water bodies that appear on the current List of Impaired Waters in Hawaii Prepared under Clean Water Act.*

Response:

Wahikuli State Wayside Park is classified as a medium priority impaired water by the current List of Impaired Waters in Hawaii.

- *If the proposed project involves potentially affected water bodies that appear on the current List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d), identify and quantify expected changes in the following site and watershed conditions and characteristics.*

  - *Surface permeability*
  - *Hydrologic response of surface (timing, magnitude, and pathways)*
  - *Receiving water hydrology*
  - *Runoff and discharge constituents*
  - *Pollutant concentrations and loads in receiving waters*
  - *Aquatic habitat quality and integrity of aquatic biota*

  Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

  Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Response:

A Preliminary Drainage Report (PDR) has been prepared for the proposed project. The PDR describes the hydrological characteristics of the project site under both existing and with-project conditions. As discussed in the Draft EA, a program of Best Management Practices (BMPs) will be implemented during construction to prevent the release of sedimentation in drainage flows across the property. From a long-term operational standpoint, drainage improvements will be constructed within the subject property to retain minimally all project-related increases in stormwater run-off such that there will be no impacts generated on downstream properties or nearby coastal waters such as Wahikuli State Wayside Park. With

implementation of the foregoing mitigation measures, the proposed project is not expected to present impacts on downstream properties, including Wahikuli State Wayside Park.

- *We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.*

  We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

Response:

With implementation of BMPs during construction and development of the proposed comprehensive drainage system, the proposed apparatus bay and related improvements are not expected to significantly adversely impact hydrology, water quality and aquatic and riparian ecosystems in the vicinity of the project site. There are no channel modifications proposed as part of the project.

Hazard Evaluation & Emergency Response Office

- *A Phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopments. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.*

Response:

The project site is part of the Lahaina Civic Center property and has been occupied by the Lahaina Fire Station since 1973 for approximately 38 years. The proposed apparatus bay building will provide additional vehicle storage and sleeping quarters for this existing DFPS facility. Given the existing developed condition of the Lahaina Fire Station property, a limited Phase

II Environmental Site Assessment (ESA) Report was completed in June 2010 by Environmental Risk Analysis LLC to determine the presence or absence of Total Petroleum Hydrocarbon-Diesel (TPH-D) in surface soils in vicinity of a currently used diesel Aboveground Storage Tank (AST) that is proposed for removal as part of the proposed project. The assessment was also conducted to determine if an onsite shed proposed for demolition requires special disposal considerations based on leachable lead concentrations.

In regards to the AST, Diesel Range Organics (DRO) were not detected above the State Department of Health (DOH) Environmental Action Limit (EAL) of 500 mg/kg in any of the surface soil samples collected. The limited Phase II ESA report recommends that an onsite Photoionization Detector be used to determine additional impacts in the subsurface soils and beneath the concrete pads during AST and pad removal. Additionally, the report recommends that confirmation soil samples beneath the concrete pad be collected and analyzed for TPH-D following removal activities, as required under Hawaii State Law.

Within the onsite shed, lead was not detected above the RCRA hazardous waste characterization standard of 5 mg of lead per liter (mg/L) of solution. These results indicate that the shed may be demolished and debris disposed at a landfill.

Clean Air Branch

- *A significant potential for fugitive dust emissions exists during all phases of construction and operations. Proposed activities that occur in proximity to existing residences, businesses, public areas or thoroughfares, exacerbate potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. The plan, which does not require DOH approval, would help with recognizing and minimizing the dust problems from the proposed project.*

  Activities must comply with the provisions of Hawaii Administrative Rules, § 11-60-1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance problems.

  The contractor should provide adequate measures to control the fugitive dust from the road areas and during the various phases of construction. Examples of measures that can be implemented to control dust include, but are not limited to, the following:

a) *Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;*
b) *Providing an adequate water source at the site prior to start-up of construction activities;*
c) *Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;*
d) *Minimizing dust from shoulders and access roads;*
e) *Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and*
f) *Controlling dust from debris being hauled away from the project site.*

Response:

A dust management protocol, including BMPs, will be developed for the project to minimize the potential for dust-related impacts from construction. Project-related activities will comply with applicable provisions of Section 11-60-1-33, HAR.

Solid and Hazardous Waste Branch

- *The state regulations for hazardous waste are in Chapters 11-260 to 11-280, Hawaii Administrative Rules (HAR). These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste. Generators, transporters and treatment, storage and disposal facilities of hazardous waste must adhere to these requirements or be subject to fines and penalties.*

Response:

The proposed project will comply with applicable requirements of HAR, Chapters 11-260 to 11-280.

- *Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.*

Response:

Construction waste for the project will be properly disposed of at an approved construction waste disposal facility. Following construction, solid waste generated within the proposed project will be collected by a private waste collection service.

- *HRS Chapter 342G encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes. Solid waste management plans should also seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.*

Response:

The applicant recognizes the benefits derived by responsible waste management and reduction measures. Solid waste management opportunities, such as designation of reuse and recycling areas within the Lahaina Fire Station will be evaluated during the design phase of the project.

Noise, Radiation, and Indoor Air Quality Branch

- *Project activities shall comply with Chapter 11-39 (Air Conditioning and Ventilating) and 11-46 (Community Noise Control) of the Administrative Rules of the Department of Health.*

Response:

The proposed project will comply with the applicable requirements of HAR Chapter 11-39 and Chapter 11-46 regulating indoor air quality, and community noise control, respectively.

NOV 29 2010

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

November 23, 2010

Mr. Mark Alexander Roy, AICP
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: **Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station, Wahikuli, Maui, Hawaii**
TMK: (2) 4-5-021:016 (por.)

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

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work.

2. All lands formerly in the production of sugarcane should be characterized for arsenic contamination. If arsenic is detected above the US EPA Region [preliminary remediation goal (PRG) for non-cancer effects], then a removal and/or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. Please contact them at 808 586-4249.

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

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

Sincerely,

Patti Kitkowski

Patti Kitkowski
District Environmental Health Program Chief

c EPO

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

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

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Ms. Kitkowski:

Thank you for your letter, dated November 23, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter:

1. We understand that a noise permit may need to be obtained prior to construction if noise created exceeds maximum allowable levels.

2. The project site is part of the Lahaina Civic Center property and has been occupied by the Lahaina Fire Station since 1973 for approximately 38 years. The proposed apparatus bay building will provide additional vehicle storage and sleeping quarters for this existing DFPS facility. Given the present use of the property as an existing fire station complex, we anticipate that testing for arsenic contamination will not be required by the Department of Health. Should testing for arsenic contamination be necessary, we ask that you notify us in writing within 30 days of the date of this letter.

3. The standard comments as listed on the department's website, have been reviewed. We are enclosing a list of applicable comments as well as the applicant's response to each. See **Exhibit "A"**.

We appreciate the input provided by your office and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
Attachment
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety (w/attachment)
Wendy Taomoto, County of Maui, Department of Management (w/attachment)
Terry McFarland, Architects Hawaii, Ltd. (w/attachment)
F:\\DATA\ArchHI\LahainaFire\DOHMauiEclres.ltr.doc

REVIEW OF STANDARD COMMENTS RELATING TO STATE ENVIRONMENTAL HEALTH PROGRAMS

Environmental Planning Office

- *Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (http://www.state.hi.us/health/about/rules/11-54.pdf), of all potentially affected water bodies.*

Response:

Coastal water off of Wahikuli State Wayside Park is considered to be a potentially affected water body in the context of analyzing the potential impacts of the proposed apparatus bay and associated improvements at the Lahaina Fire Station. Wahikuli State Wayside Park is designated a Class A water body by the State Department of Health.

- *Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.*

Response:

There are no existing NPDES permits or related connection permits governing water quality management at the project site.

- *Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.*

Response:

There are no existing water quality actions being undertaken at the project site.

- *Identify all potentially affected water bodies that appear on the current List of Impaired Waters in Hawaii Prepared under Clean Water Act.*

Response:

Wahikuli State Wayside Park is classified as a medium priority impaired water by the current List of Impaired Waters in Hawaii.

- *If the proposed project involves potentially affected water bodies that appear on the current List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d), identify and quantify expected changes in the following site and watershed conditions and characteristics.*

  - *Surface permeability*
  - *Hydrologic response of surface (timing, magnitude, and pathways)*
  - *Receiving water hydrology*
  - *Runoff and discharge constituents*
  - *Pollutant concentrations and loads in receiving waters*
  - *Aquatic habitat quality and integrity of aquatic biota*

  Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

  Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Response:

A Preliminary Drainage Report (PDR) has been prepared for the proposed project. The PDR describes the hydrological characteristics of the project site under both existing and with-project conditions. As discussed in the Draft EA, a program of Best Management Practices (BMPs) will be implemented during construction to prevent the release of sedimentation in drainage flows across the property. From a long-term operational standpoint, drainage improvements will be constructed within the subject property to retain minimally all project-related increases in stormwater run-off such that there will be no impacts generated on downstream properties or nearby coastal waters such as Wahikuli State Wayside Park. With

implementation of the foregoing mitigation measures, the proposed project is not expected to present impacts on downstream properties, including Wahikuli State Wayside Park.

- *We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.*

  We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

Response:

With implementation of BMPs during construction and development of the proposed comprehensive drainage system, the proposed apparatus bay and related improvements are not expected to significantly adversely impact hydrology, water quality and aquatic and riparian ecosystems in the vicinity of the project site. There are no channel modifications proposed as part of the project.

Hazard Evaluation & Emergency Response Office

- *A Phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopments. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.*

Response:

The project site is part of the Lahaina Civic Center property and has been occupied by the Lahaina Fire Station since 1973 for approximately 38 years. The proposed apparatus bay building will provide additional vehicle storage and sleeping quarters for this existing DFPS facility. Given the existing developed condition of the Lahaina Fire Station property, a limited Phase

II Environmental Site Assessment (ESA) Report was completed in June 2010 by Environmental Risk Analysis LLC to determine the presence or absence of Total Petroleum Hydrocarbon-Diesel (TPH-D) in surface soils in vicinity of a currently used diesel Aboveground Storage Tank (AST) that is proposed for removal as part of the proposed project. The assessment was also conducted to determine if an onsite shed proposed for demolition requires special disposal considerations based on leachable lead concentrations.

In regards to the AST, Diesel Range Organics (DRO) were not detected above the State Department of Health (DOH) Environmental Action Limit (EAL) of 500 mg/kg in any of the surface soil samples collected. The limited Phase II ESA report recommends that an onsite Photoionization Detector be used to determine additional impacts in the subsurface soils and beneath the concrete pads during AST and pad removal. Additionally, the report recommends that confirmation soil samples beneath the concrete pad be collected and analyzed for TPH-D following removal activities, as required under Hawaii State Law.

Within the onsite shed, lead was not detected above the RCRA hazardous waste characterization standard of 5 mg of lead per liter (mg/L) of solution. These results indicate that the shed may be demolished and debris disposed at a landfill.

Clean Air Branch

- *A significant potential for fugitive dust emissions exists during all phases of construction and operations. Proposed activities that occur in proximity to existing residences, businesses, public areas or thoroughfares, exacerbate potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. The plan, which does not require DOH approval, would help with recognizing and minimizing the dust problems from the proposed project.*

  Activities must comply with the provisions of Hawaii Administrative Rules, § 11-60-1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance problems.

  The contractor should provide adequate measures to control the fugitive dust from the road areas and during the various phases of construction. Examples of measures that can be implemented to control dust include, but are not limited to, the following:

a) *Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;*
b) *Providing an adequate water source at the site prior to start-up of construction activities;*
c) *Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;*
d) *Minimizing dust from shoulders and access roads;*
e) *Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and*
f) *Controlling dust from debris being hauled away from the project site.*

Response:

A dust management protocol, including BMPs, will be developed for the project to minimize the potential for dust-related impacts from construction. Project-related activities will comply with applicable provisions of Section 11-60-1-33, HAR.

Solid and Hazardous Waste Branch

- *The state regulations for hazardous waste are in Chapters 11-260 to 11-280, Hawaii Administrative Rules (HAR). These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste. Generators, transporters and treatment, storage and disposal facilities of hazardous waste must adhere to these requirements or be subject to fines and penalties.*

Response:

The proposed project will comply with applicable requirements of HAR, Chapters 11-260 to 11-280.

- *Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.*

Response:

Construction waste for the project will be properly disposed of at an approved construction waste disposal facility. Following construction, solid waste generated within the proposed project will be collected by a private waste collection service.

- *HRS Chapter 342G encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes. Solid waste management plans should also seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.*

Response:

The applicant recognizes the benefits derived by responsible waste management and reduction measures. Solid waste management opportunities, such as designation of reuse and recycling areas within the Lahaina Fire Station will be evaluated during the design phase of the project.

Noise, Radiation, and Indoor Air Quality Branch

- *Project activities shall comply with Chapter 11-39 (Air Conditioning and Ventilating) and 11-46 (Community Noise Control) of the Administrative Rules of the Department of Health.*

Response:

The proposed project will comply with the applicable requirements of HAR Chapter 11-39 and Chapter 11-46 regulating indoor air quality, and community noise control, respectively.

DEC 02 2010

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD10/5377

November 18, 2010

Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

RE: Pre-Environmental Assessment consultation
Lahaina Fire Station Improvements Project
Wahikuli, Lahaina, Island of Maui

Aloha e Mark Alexander Roy,

The Office of Hawaiian Affairs (OHA) is in receipt of your November 4, 2010 request for comments ahead of a Draft Environmental Assessment (DEA) for improvements to the Lahaina Fire Station in Wahikuli on the Island of Maui. It is our understanding the construction of a new 2, 838 square foot apparatus bay building (project) to accommodate two fire trucks and a boat/trailer combination is proposed. The use of County of Maui funds and lands is proposed and thus, preparation of a DEA pursuant to Chapter 343, Hawaii Revised Statutes is required. The County of Maui, Department of Fire and Public Safety will be the approving authority for the Final Environmental Assessment (FEA). The project will require a County of Maui Special Use Permit because it will be situated within the County of Maui Agricultural District.

While OHA has no comments at this time, we applaud the efforts of the County of Maui to improve public services in the area. We look forward to reviewing to reviewing the DEA. Should you have any questions, please contact Keola Lindsey at 594-0244 or keolal@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Chief Executive Officer

C: OHA- Maui Community Outreach Coordinator

NOV 30 2010

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 29, 2010

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

Attention: Mr. Mark Alexander Roy, AICP, Program Manager

Ladies and Gentlemen:

Subject: Early Consultation for Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station

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

Other than the comments from Engineering Division, Division of Forestry & Wildlife, Commission on Water Resource Management, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

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

November 10, 2010

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

Charlene

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Early Consultation for Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station
LOCATION: Island of Maui
APPLICANT: Munekiyo & Hiraga, Inc. on behalf of County of Maui, Department of Fire & Public Safety

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 22, 2010.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed: _____
Date: 11/17/10

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

November 10, 2010

2010 NOV 12 AM 10:06
RECEIVED
COMMISSION ON WATER RESOURCE MANAGEMENT

MEMORANDUM

From:

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

To:

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Early Consultation for Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station
LOCATION: Island of Maui
APPLICANT: Munekiyo & Hiraga, Inc. on behalf of County of Maui, Department of Fire & Public Safety

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 22, 2010.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed: W. Roy Hardy
Date: 11/12/10

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

'10 NOV 12 P1:01 ENGINEERING

November 10, 2010

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x ~~Div. of Forestry~~ & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

Charlene

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Early Consultation for Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station
LOCATION: Island of Maui
APPLICANT: Munekiyo & Hiraga, Inc. on behalf of County of Maui, Department of Fire & Public Safety

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 22, 2010.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed:
Date: 11/15/10

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Charlene Unoki
Ref.: EarlyConsultationForPropApparBayBld&RelatedImprovForLahainaFireSta Maui.012

COMMENTS

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

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

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

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

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

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

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Carter Romero at (808) 961-8943 of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

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

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

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

( ) Additional Comments: _____

_____

( ) Other: _____

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

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 11/15/16

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAREN E. MITSUDA

MARK ALEXANDER ROY

March 7, 2011

Russell Tsuji, Administrator
Department of Land and Natural Resources
Land Division
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Tsuji:

Thank you for your letter, dated November 29, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety, we offer the following information in response to the comments noted in your letter:

- We acknowledge the determination from your Engineering Division that the project site is located in Flood Zone X and that the National Flood Insurance Program does not regulate developments within Zone X.

- We further acknowledge that the Division of Forestry and Wildlife has no comments and the Commission on Water Resource Management has no objections or comments related to the proposed project.

We appreciate the input provided by your office and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
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NEIL ABERCROMBIE
GOVERNOR

DEC 15 2010

JEFFREY CHANG
ACTING DIRECTOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

STP 8.0294

December 8, 2010

Mr. Mark Alexander Roy, AICP
Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Lahaina Fire Station, Apparatus Building and Related Improvements
Early Consultation for Draft Environmental Assessment (DEA)

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands that the Maui Department of Fire and Public Safety (DF&PS) proposes to construct a new 2,838 square foot apparatus bay building and related improvements that will be used to accommodate two fire trucks and a boat/trailer combination. The subject project is located adjacent to the existing Lahaina Fire Station and on the same parcel as the Lahaina Civic Center, Lahaina Police Station, Lahaina District Court and the Lahaina Comprehensive Health Center in Wahikuli. Access to the project is from Kikowaena Street which intersects Kaaahi Street, then connects to Honoapiilani Highways.

DOT offers the following highway concerns that should be discussed in the DEA.

1. Which of the two accesses to Honoapiilani Highway will the Lahaina Fire Station use as its primary access route when responding to emergencies. Information on the usage and routing is important to our highway engineers.

2. DOT understands that an emergency beacon (flashing light) that was located over Honoapiilani Highway in the area of one of the two accesses is no longer there. The DEA should discuss whether an emergency beacon is necessary and, if so, when will it be installed.

DOT appreciates the opportunity to provide comments. If there are any other questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Very truly yours,

JEFFREY CHANG
Acting Director of Transportation

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRAGA
KAREYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

Glenn Okimoto, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii, STP 8.0294

Dear Mr. Okimoto:

Thank you for your Department's letter, dated December 8, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter:

1. The Draft Environmental Assessment (EA) will discuss potential traffic impacts associated with the proposed project. Both access points to Honoapiilani Highway are currently utilized by emergency vehicles for egress. The location of the incident determines which entrance is used. For all incidents north of the Fire Station, vehicles utilize the north entrance. Vehicles responding to incidents south of the Fire Station utilize the south entrance. Because there is no left hand turn from the north entrance, all access to the existing Lahaina Fire Station is from the south entrance, which is a signalized intersection.

2. The plans for the proposed project do not include installing an emergency signal at the North entrance as it is not believed to be warranted based on existing and projected future operations at the existing fire station. As noted above, all egress from this entrance is in the north direction going with the flow of traffic. Personnel at the Lahaina Fire Station note that there have been no traffic accidents reported related to an emergency vehicle making turning movements onto the Honoapiilani Highway at this location.

We appreciate the input provided by your department and will include a copy of your department's letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
Diane Kodama, AECOM
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DEC 16 2010

CHARMAINE TAVARES
Mayor

CHERYL K. OKUMA, Esq.
Director

GREGG KRESGE
Deputy Director

TRACY TAKAMINE, P.E.
Solid Waste Division

DAVID TAYLOR, P.E.
Wastewater Reclamation
Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

December 15, 2010

Mr. Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: **LAHAINA FIRE STATION**
APPARATUS BAY BUILDING AND RELATED IMPROVEMENTS
EARLY CONSULTATION
TMK (2) 4-5-021:016 (POR.)

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:

   a. Include a plan for the management of construction waste.

2. Wastewater Reclamation Division (WWRD) comments:

   a. Although wastewater system capacity is currently available as of 12/15/2010, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
   b. Wastewater contribution calculations are required before building permit is issued.
   c. Developer is not required to pay assessment fees for this area at the current time.
   d. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
   e. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.

f. Non-contact cooling water and condensate should not drain to the wastewater system.

If you have any questions regarding this memorandum, please contact Gregg Kresge at 270-8230.

Sincerely,

CHERYL K. OKUMA
Director of Environmental Management

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

Kyle Ginoza, Director
Department of Environmental Management
County of Maui
2200 Main Street, Suite 1000
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Ginoza:

Thank you for your Department's letter, dated December 15, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter:

Solid Waste Division

1. Construction waste management protocols will be developed prior to initiation of construction activities for the project. Implementation of said protocols will be the responsibility of the contractor, once selected.

Wastewater Reclamation Division

1. We acknowledge that wastewater system capacity is currently available but capacity cannot be ensured until building permit issuance.

2. Wastewater contribution calculations will be submitted during the building permit application process for the project.

3. We understand that the DFPS is not required to pay assessment fees for this area at the current time.

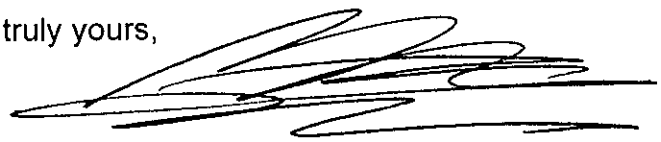
4. We note that the DFPS will be responsible for funding any necessary off-site improvements to the collection system and wastewater pump stations.

5. The applicant will indicate the ownership of all easements on the construction plans for the project. We acknowledge that the County will not accept sewer easements that traverse private property. The subject property is owned by the State of Hawaii. Executive Order 3283 permits use of the property by the County of Maui for County facilities.

6. Lastly, we acknowledge that non-contact cooling water and condensate is not allowed to drain into the County wastewater system.

We appreciate the input provided by your department and will include a copy of your department's letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,



Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
Diane Kodama, AECOM
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DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
HOUSING DIVISION
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor

LORI TSUHAKO
Director

JO-ANN T. RIDAO
Deputy Director

35 LUNALILO STREET, SUITE 102 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7351 • FAX (808) 270-6284

NOV 23 2010

November 19, 2010

Mr. Mark Alexander Roy, AICP
Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station located at Waihikuli, Maui, Hawaii. TMK (2) 4-5-021:016(por.)

The Department has reviewed the request for Early Consultation for the above subject project. Based on our review, we have determined that the subject project is not subject to Chapter 2.96, Maui County Code. At the present time, the Department has no additional comments to offer.

Please call Mr. Buddy Almeida of our Housing Division at (808) 270-7356 if you have any questions.

Sincerely,

Wayde T. Oshiro

WAYDE T. OSHIRO
Housing Administrator

cc: Director of Housing and Human Concerns

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAREYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

JoAnn Ridao, Director
Department of Housing and Human Concerns
Housing Division
County of Maui
35 Lunalilo Street, Suite 102
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Ms. Ridao:

Thank you for your Department's letter, dated November 19, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we acknowledge the determination that the proposed project is not subject to Chapter 2.96, Maui County Code.

We appreciate the input provided by your organization and will include a copy of your department's letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
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CHARMAINE TAVARES
Mayor

TAMARA HORCAJO
Director

ZACHARY Z. HELM
Deputy Director

(808) 270-7230
Fax (808) 270-7934

NOV 30 2010

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

November 23, 2010

Munekiyo & Hiraga, Inc.
Attention: Mark Alexander Roy, Program Manager
305 High Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2) 4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Roy:

The Lahaina Civic Center hosts a variety of recreational and community events. We are concerned with the impacts to the center particularly during the construction phase. We would appreciate that our parks staff be involved in pre-construction planning for these improvements.

Thank you for the opportunity to review and comment on this matter. Please feel free to contact me or Mr. Baron Sumida, CIP Coordinator in the Parks Planning and Development Division at 270-6173 should you have any questions.

Sincerely,

TAMARA HORCAJO
Director

c: Patrick Matsui, Chief of Parks Planning & Development
Jeff Anderson, West District Supervisor

TH:PTM:do

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

Glenn Correa, Director
Department of Parks and Recreation
County of Maui
700 Hali`a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Correa:

Thank you for your Department's letter, dated November 23, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter.

We understand that the Lahaina Civic Center hosts a variety of recreational and community events and acknowledge your concern regarding potential impacts from construction activities during these special events. The DFPS will involve Department of Parks and Recreation staff in pre-construction planning for the proposed project to ensure that potential construction-related impacts to Lahaina Civic Center activities and operations are minimized.

We appreciate the input provided by your department and will include a copy of your department's letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
Diane Kodama, AECOM
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DEC 10 2010

POLICE DEPARTMENT
COUNTY OF MAUI

CHARMAINE TAVARES
MAYOR

OUR REFERENCE

YOUR REFERENCE

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

December 2, 2010

Mr. Mark Alexander Roy, AICP
Program Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Roy:

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station
TMK (2) 4-5-021:016 (por.)

Thank you for your letter of November 4, 2010, requesting comments on the above subject.

We have reviewed the information submitted and have no comments or recommendations to make at this time. Thank you for giving us the opportunity to comment on this project.

Very truly yours,

ACD. Matsuura

Assistant Chief Danny Matsuura
for: Gary A. Yabuta
Chief of Police

c: Kathleen Ross Aoki, Planning Department

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRAGA
KARELYNN FURUTA

MARK ALEXANDER ROY

March 7, 2011

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

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Chief Yabuta:

Thank you for your letter, dated December 2, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety, we acknowledge that the Maui Police Department does not have any comments or recommendations at this time.

We appreciate the input provided by your department and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
Diane Kodama, AECOM
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CHARMAINE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

NOV 23 2010

RALPH M. NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

November 19, 2010

Mark Alexander Roy, A.I.C.P.
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Subject: EARLY CONSULTATION REQUEST FOR A PROPOSED APPARATUS BAY BUILDING AND RELATED IMPROVEMENTS FOR THE LAHAINA FIRE STATION
TMK (2) 4-5-021:016 (POR.)

Dear Mr. Roy:

We reviewed the subject application and have no comments at this time.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,

Milton M. Arakawa, A.I.C.P.
Director of Public Works

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xc: Highways Division
Engineering Division

CHARMAINE TAVARES
MAYOR

NOV 19 2010

DON A. MEDEIROS
Director
WAYNE A. BOTEILHO
Deputy Director
Telephone (808) 270-7511
Facsimile (808) 270-7505

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

November 10, 2010

Mr. Mark Alexander Roy
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Subject: Lahaina Fire Station Apparatus Bay Building and Improvements

Dear Mr. Roy,

Thank you for the opportunity to comment on this project. We have no comments to make at this time.

Please feel free to contact me if you have any questions.

Sincerely,

Don Medeiros
Director

62

DEC 08 2010

CHARMAINE TAVARES
Mayor

JEFFREY K. ENG
Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

November 30, 2010

Mr. Mark Alexander Roy, Planner
Munekiyo and Hiraga
305 High St., Suite 104
Wailuku, Hawaii 96793

Re: TMK: (2) 4-5-021:016
Project Name: Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station

Dear Mr. Roy:

Thank you for the opportunity to comment on this early consultation request. We understand that a County of Maui Special Use Permit (SUP) will be required, and an Environmental Assessment (EA) will be prepared.

Source Availability and Consumption
The project area is served by the Lahaina system. The main sources of water for this portion of the Lahaina system are wells withdrawing from Launiupoko aquifer and surface water from Kanaha Stream. New source development projects include upgrades to the Lahaina and Mahinahina Water Treatment Plants, review of potential sites for groundwater wells, and raw water storage. The fire station lot is served by one 1-1/2-inch water meter, although there are several water meters associated with this parcel. Anticipated demand for the proposed new use is approximately 397 gallons per day according to system standards. Domestic and irrigation calculations will be required in the building permit process, as well as approved backflow preventers.

System Infrastructure
There are two DWS waterlines bordering the lot, a 16-inch running along Honoapiilani Highway and an 8-inch bordering the property on the south. There is one fire hydrant on the site, and two hydrants in close proximity. The applicant will be required to provide for water service and fire protection in accordance with system standards. Fire flow calculations will also be required in the building permit process.

Conservation
To alleviate demand on the Lahaina system, please find attached a conservation checklist for commercial buildings. We recommend that the following conservation measures be included in

the project design and noted in the draft EA:
Use Non-potable Water: Use brackish water for landscaping, dust control and other non-potable purposes where feasible.
Eliminate Single-Pass Cooling: Single-pass, water-cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air conditioners, freezers, and commercial refrigerators. Such models should be avoided.
Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Regular maintenance programs should be established.
Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, water closets, and hose bibs. Installation of EPA *WaterSense* labeled fixtures should be considered.

a. EPA WaterSense labeled high-efficiency toilets. A list of WaterSense certified high-efficiency toilets and other fixtures may be found at: http://www.epa.gov/WaterSense/pp/index.htm
b. WaterSense labeled bathroom sink faucets. The flow rate of these fixtures does not exceed 1.5 gpm at 60 psi. (Even more efficient models are available.)

Pollution Prevention
In order to protect ground and surface water sources, Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction should be implemented during construction. In addition to the BMPs required by law, the mitigation measures below should be included in the draft EA:

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water.
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
- Retain ground cover until the last possible date.
- Keep run-off on site.

Should you have any questions, please contact our Water Resources and Planning Division at 244-8550.

Sincerely,

Jeffrey K. Eng, Director
mlb

cc: engineering division
Attachments: A Checklist of Water Conservation Ideas for commercial buildings

A Checklist of Water Conservation Ideas For

Commercial Buildings

This checklist provides water conservation tips successfully implemented by industrial and commercial users. This list has been revised from the original copy first published and distributed by the Los Angeles Department of Water and Power.

☐ General suggestions

Increase employee awareness of water conservation.

Install signs encouraging water conservation in employee and customer restrooms.

When cleaning with water is necessary, use budgeted amounts.

Determine the quantity and purpose of water being used.

Read water meter weekly to monitor success of water conservation efforts.

Assign an employee to monitor water use and waste.

Seek employee suggestions on water conservation; put suggestion boxes in prominent areas.

Determine other methods of water conservation.

☐ Building maintenance

Check water supply for leaks.

Turn off any unnecessary flows.

Repair dripping faucets and showers and continuously running or leaking toilets.

Install faucet aerators where possible.

Reduce toilet water use by adjusting flush valves or installing dams and flapper mechanisms.

As appliances or fixtures wear out, replace them with water-saving models.

Shut off water supply to equipment rooms not in use.

Minimize the water used in cooling equipment in accordance with manufacturers recommendations. Shut off cooling units when not needed.

☐ Cafeteria area

Turn off continuous flow used to clean the drain trays.

Turn off dishwasher when not in use. Wash full loads only.

Use water from steam tables to wash down cooking area.

Do not use running water to melt ice or frozen foods.

Use water-conserving ice makers.

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER RO

March 7, 2011

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

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Taylor:

Thank you for your Department's letter, dated November 30, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we offer the following information in response to the comments noted in your letter:

Source Availability and Consumption

We acknowledge that the anticipated demand for the proposed use is 397 gallons per day and that domestic and irrigation calculations, along with approved backflow preventers, will be required during the building permit process. The Draft Environmental Assessment (EA) will discuss water consumption for the proposed project and potential impacts to the water system.

System Infrastructure

Thank you for the information on the system infrastructure near the project site. We acknowledge that the applicant will be required to provide for water service and fire protection in accordance with system standards. The DFPS will provide fire flow calculations during the building permit process.

Conservation

We will review the water conservation checklist for commercial buildings. The Draft EA will discuss water conservation measures being considered for implementation for the proposed project, including those recommended by the Department of Water Supply.

Pollution Prevention

The Draft EA will discuss Best Management Practices to be implemented for the proposed project to minimize infiltration and runoff from construction.

We appreciate the input provided by your department and will include a copy of your department's letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
Diane Kodama, AECOM
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Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

NOV 10 2010

November 9, 2010

Mr. Mark Alexander Roy, AICP, Program Manager
Munekiyo & Hiraga, Inc.
305 High St., Suite 104
Wailuku, Hawaii 96793

Subject: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station
Wahikuli, Maui, Hawaii
Tax Map Key: (2) 4-5-021:016 (por.)

Dear Mr. Roy,

Thank you for allowing us to comment on the Early Consultation Request for the subject project.

In reviewing our records and the information received, Maui Electric Company has no objections to the subject project at this time. We highly encourage the customer to submit an electrical service request so that services can be provided on a timely basis.

Should you have any questions or concerns, please call me at 871-2341.

Sincerely,

Kyle Tamori
Staff Engineer

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAPUYNN FUJIOKA

MARK ALEXANDER ROY

March 7, 2011

Kyle Tamori, Staff Engineer
Maui Electric Company, Ltd.
210 West Kamehameha Avenue
Kahului, Hawaii 96732

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Tamori:

Thank you for your letter, dated November 9, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety (DFPS), we acknowledge that Maui Electric Company (MECO) has no objections to the proposed project at this time. The DFPS will submit an electrical service request, as necessary, so that electrical service can be provided to the project on a timely manner.

We appreciate the input provided by MECO and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
Terry McFarland, Architects Hawaii, Ltd.
F:\\DATA\ArchHI\LahainaFire\MECOecfres.ltr.doc

NOV 1 2 2010

Kaanapali Land Management Corp.

275 Lahainaluna Road • Lahaina, Maui, HI 96761 • *t:* (808) 661-9652 • *f:* (808) 667-9658 • www.KaanapaliLand.c

Honoring our roots.
Preserving our spirit.

November 9, 2010

Mark Alexander Roy, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: EARLY CONSULTATION REQUEST FOR A PROPOSED APPARATUS BAY BUILDING AND RELATED IMPROVEMENTS FOR THE LAHAINA FIRE STATION TMK (2) 4-5-021:016 (por), WAHIKULI, MAUI, HAWAII

Dear Mr. Roy:

This is in response to your November 4, 2010 letter requesting comments on the subject proposed project as a part of the Draft Environmental Assessment preparation process.

We have reviewed the submittal and have no objections to the project.

Very Truly Yours,

Howard Hanzawa, P.E.
Vice President

10

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KAREYNN FUKUDA

MARK ALEXANDER ROY

March 7, 2011

Howard Hanzawa, P.E.
Vice President
Kaanapali Land Management Corp.
275 Lahainaluna Road
Lahaina, Hawaii 96761

SUBJECT: Early Consultation Request for a Proposed Apparatus Bay Building and Related Improvements for the Lahaina Fire Station at TMK (2)4-5-021:016(por.), Wahikuli, Maui, Hawaii

Dear Mr. Hanzawa:

Thank you for your letter, dated November 9, 2010, providing early consultation comments on the proposed apparatus bay building and related improvements for the Lahaina Fire Station. On behalf of the applicant, the County of Maui Department of Fire and Public Safety, we acknowledge that your company does not have any objections to the proposed project.

We appreciate the input provided by your organization and will include a copy of your letter in the Draft Environmental Assessment for the project. Should you have any questions, please contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, AICP
Program Manager

MAR:lh
cc: Lee Mainaga, County of Maui, Department of Fire and Public Safety
Wendy Taomoto, County of Maui, Department of Management
F:\\DATA\ArchHI\LahainaFire\KLMCecIres.ltr.doc

IX. REFERENCES

IX. REFERENCES

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APPENDIX A.

Preliminary Development Plans

NAME: ah2234.dwg DATE: NOV 10, 2003

LAHAINA FIRE STATION

APPARATUS BAY

(FINAL CONSTRUCTION DOCUMENTS)

COUNTY OF MAUI CONTRACT NO. C4533
TMK - (2) 4-5-021: 10
LAHAINA, MAUI, HAWAII

FOR THE
DEPARTMENT OF FIRE AND PUBLIC SAFETY
COUNTY OF MAUI

DESIGN TEAM

ARCHITECTURE & INTERIOR DESIGN

Architects Hawaii Ltd.
1001 Bishop Street, Suite 200
Honolulu, Hawaii 96813
PHONE: (808) 523-9636
FAX: (808) 521-3280

CIVIL ENGINEER

AECOM
1001 BISHOP ST., SUITE 1600
HONOLULU, HAWAII 96813

STRUCTURAL ENGINEER

Wilson Okamoto & Associates
1907 South Beretania St., Suite 400
Honolulu, Hawaii 96826

MECHANICAL ENGINEER

Randolph Murayama & Associates
1267 Young St.
Honolulu, Hawaii 96814

ELECTRICAL ENGINEER

ECS INC.
615 Piikoi St., Suite 207
Honolulu, Hawaii 96814

GEOTECHINICAL ENGINEER

Hirata & Associates
99-143 Kaaha Place
Aiea, Hawaii 96701

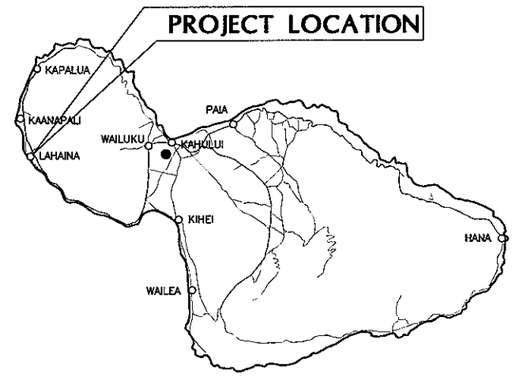
ENVIRONMENTAL ENGINEER

Environmental Risk Analysis, LLC
725 Hao St.
Honolulu, Hawaii 96821

PLANNING

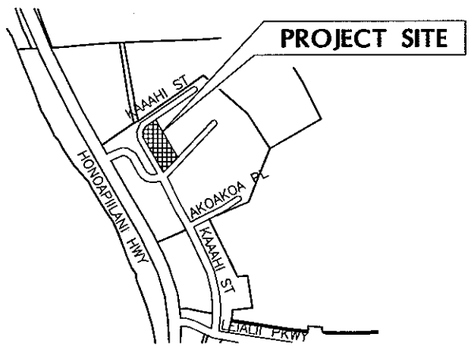
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

LOCATION MAP



MAUI
NOT TO SCALE

VICINITY MAP



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PROJECT SUMMARY

Location:
The project site for the Lahaina Fire Station – Apparatus Bay Addition is located near Honoapiilani Highway in Lahaina on the island of Maui. The proposed site is part of a larger parcel that is further identified as Tax Map Key 4-5-021: 10

Project Characteristics:
The project will include the demolition of storage shed and relocation of a fuel tank and storage container. The proposed fire station Apparatus addition will accommodate a fire truck, utility vehicle, and boat/trailer combination. The new structure will house laundry functions.

The apparatus bay shall be constructed with a combination of concrete masonry unit (CMU) and pre-manufactured steel.

The facility shall be fully accessible and meet ADA requirements

The building will include automatic fire sprinkler protection.

ADDITIVE ALTERNATE

New Bay to include:
-Weight Room
-2 Sleeping Quarters
-1 Bathroom

AGENCY APPROVALS

CHIEF, DEPARTMENT OF FIRE AND PUBLIC SAFETY — DATE
COUNTY OF MAUI

DIRECTOR DEPARTMENT OF WATER SUPPLY — DATE
COUNTY OF MAUI
(Approval is limited to the Water System improvements which will be dedicated to the Department of Water Supply)

PROJECT & ZONING INFORMATION

Project:	Lahaina Fire Station Apparatus Bay
Parcel Address:	1830 Honoapiilani Highway Lahaina, Maui, Hawaii 96761
Building Code:	1997 UBC
Tax Map Key:	4-5-021: 10
Owner:	County of Maui
State Land Use:	Urban
County Zoning:	Agricultural
Community Plan Region:	Wailuku-Kahului Community Plan, Project District 1
Special Management District:	Yes
Flood Zone:	C
Occupancy:	B
Type of Construction:	Type V – N
Lot Area:	16,782 Acres
Maximum Building Area:	73,102 SF
Building Area Provided:	2,838 SF
Maximum Building Height:	30' Not to exceed two stories
Height Provided:	22'-6"
Exiting Req'd: 1	2 Provided
Maximum Density:	
Density Provided:	
Front Yard Setback:	15'
Side Yard Setback:	10'
Rear Yard Setback:	15'
Lot Size:	57,522 sf
(E) Building Area:	6,216 SF

APPLICABLE CODES

UNIFORM BUILDING CODE, 1997 EDITION WITH LOCAL AMENDANTS

UNIFORM PLUMBING CODE, 1997 EDITION WITH LOCAL AMENDMENTS

NATIONAL ELECTRIC CODE, 2005

UNIFORM FIRE CODE, 1997 EDITION WITH 1998 & 1999 SUPPLEMENTS

LAND USE ORDINANCE, APRIL 2003

ARCHITECTS-HAWAII LIMITED
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AMERICAN SAVINGS BANK TOWER
HONOLULU, HAWAII 96813
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FAX: (808) 521-3280
www.ahldesign.com

LAHAINA FIRE STATION
APPARATUS BAY
1830 HONOAPIILANI HWY
LAHAINA, MAUI, HAWAII

COVER SHEET, DESIGN TEAM, LOCATION MAP, VICINITY MAP, PROJECT SUMMARY, AGENCY APPROVALS, PROJECT & ZONING INFO, CODES

TERRY McFARLAND
LICENSED PROFESSIONAL ARCHITECT
No. 7418
HAWAII, U.S.A.

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)

signature — 04/30/12 expiration date of the license

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

PROJECT NO:
CAD DWG FILE: pg-001-a
DRAWN BY: x
DATE:
DRAWING NO

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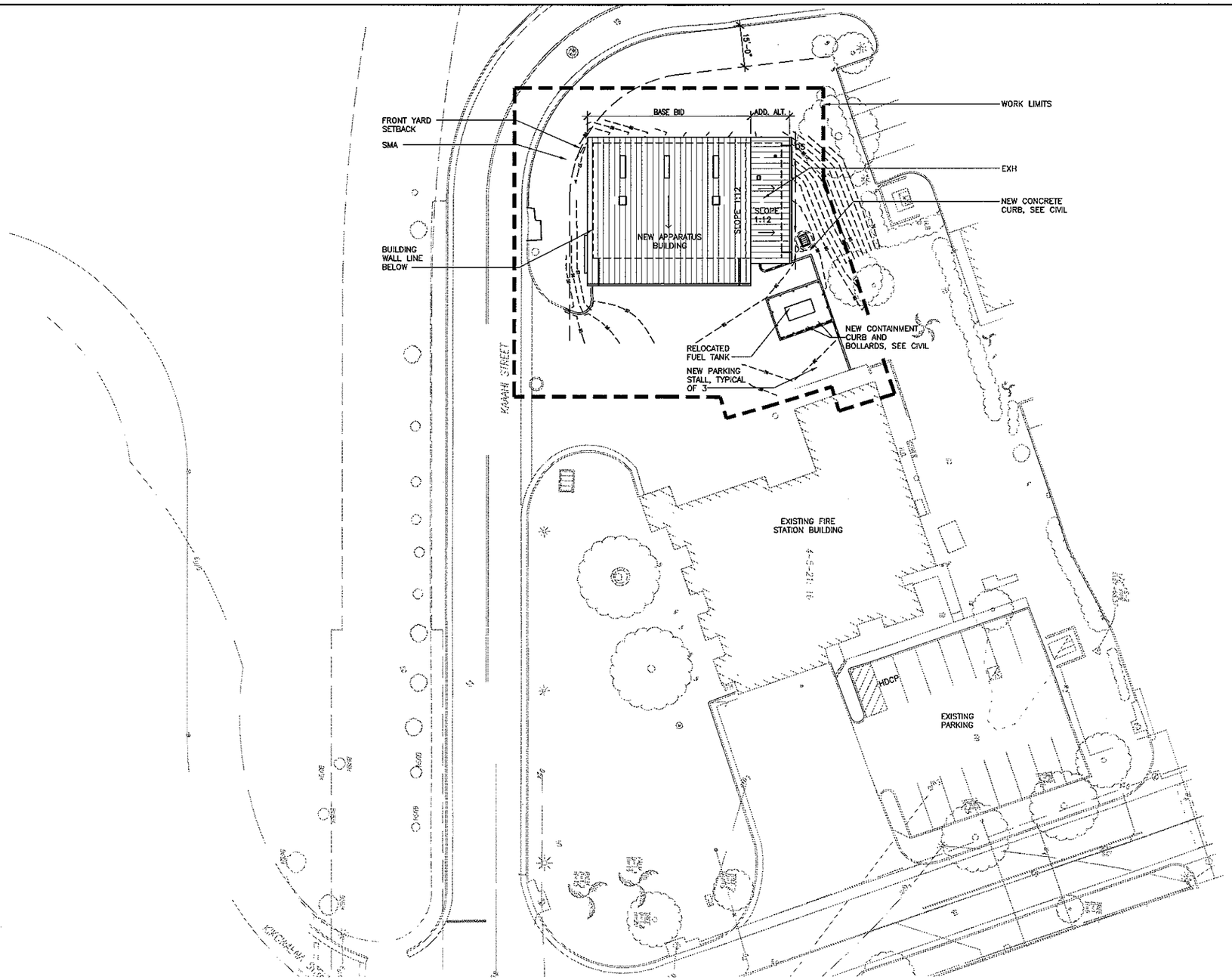
of Sheets

NAME: ah1234.dwg DATE: NOV 10, 2003



A1 **ARCHITECTURAL SITE/ ROOF PLAN**
SCALE: 1/20" = 1'-0"

0 10 20 30 40 50 60FT
SCALE: 1"=20'-0"

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APPARATUS BAY
1830 HONOAPILANI HWY
LAHAINA, MAUI, HAWAII

ARCHITECTURAL SITE PLAN

TERRY McFARLAND
LICENSED PROFESSIONAL ARCHITECT
No. 7418
HAWAII, U.S.A.

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

04/30/12
signature — expiration date of the license

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

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CAD DWG FILE: pa-xxx
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DATE:
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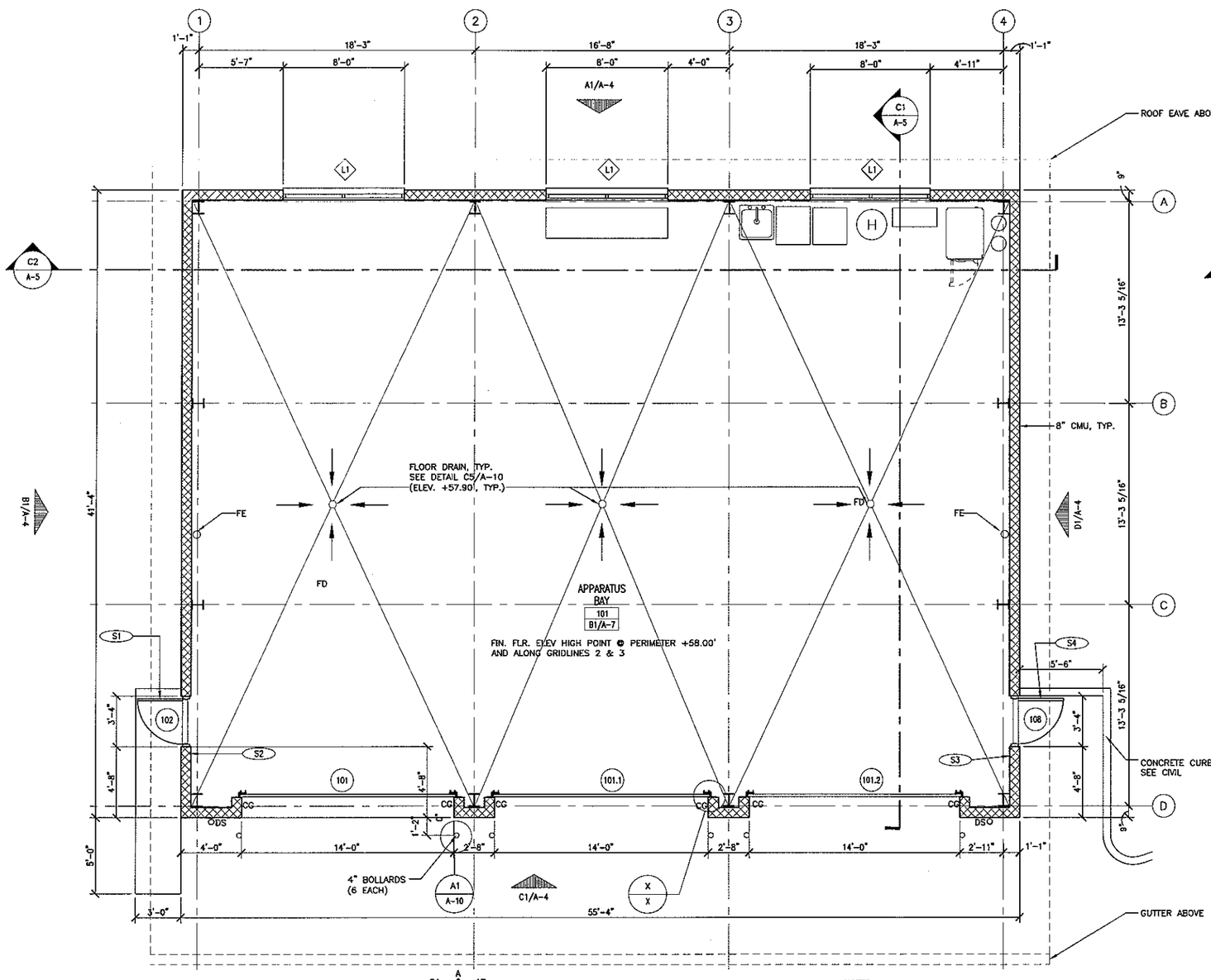

A1 **FLOOR PLAN**
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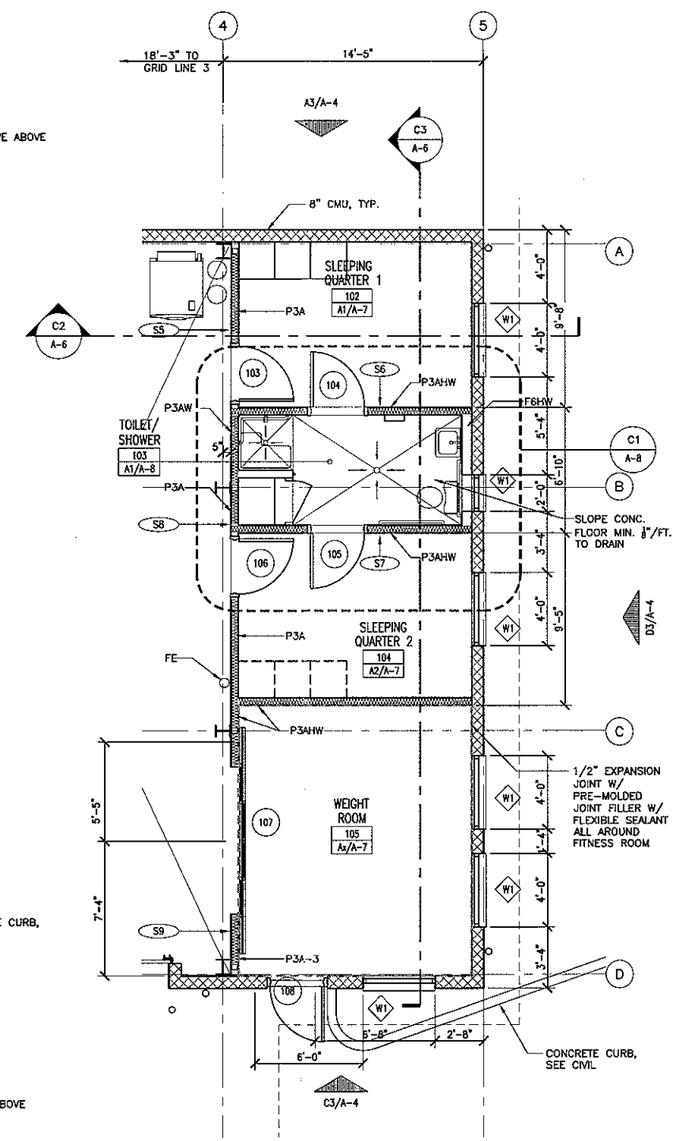

A4 **FLOOR PLAN - ADD. ALT.**
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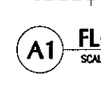

SCALE: 0 2 4 6 8 10 12FT
1/4"=1'-0"

NOTES:

1) SEE A3/A-9 FOR SIGN TYPES AND MOUNTING INFO.

2) SEE C3/A-8 FOR FURNITURE LAYOUT (ADD. ALT. ONLY)

3) ALL INTERIOR SPACES SHALL BE PAINTED SAME AS EXTERIOR QUALITY

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LAHAINA, MAUI, HAWAII

FLOOR PLAN

PROJECT NO:
CAD DWG FILE: pa-xxx
DRAWN BY: x
DATE:
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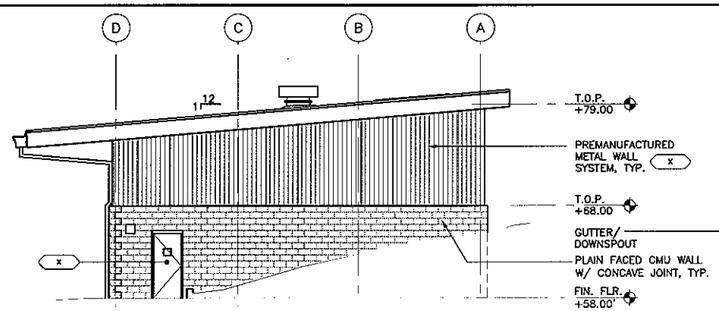

D1 EAST ELEVATION

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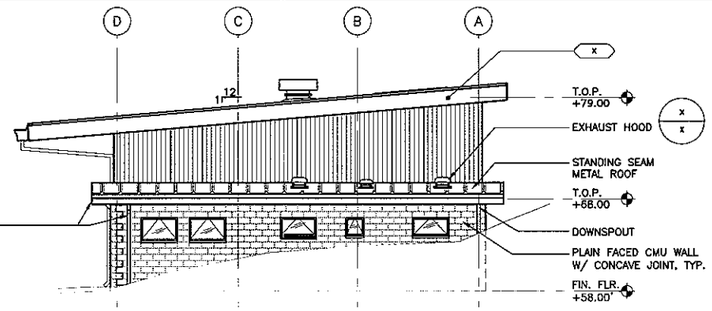

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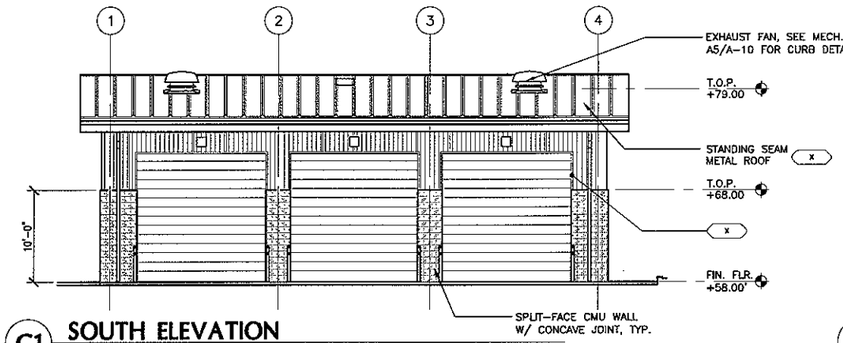
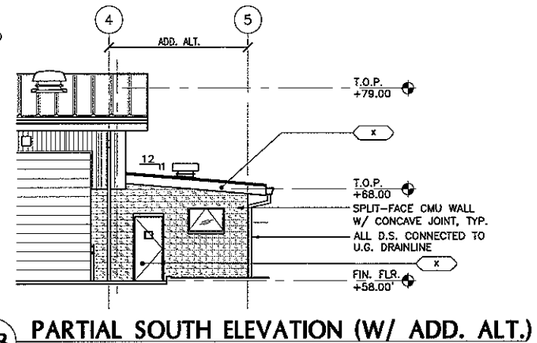


C1 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"



C3 PARTIAL SOUTH ELEVATION (W/ ADD. ALT.)

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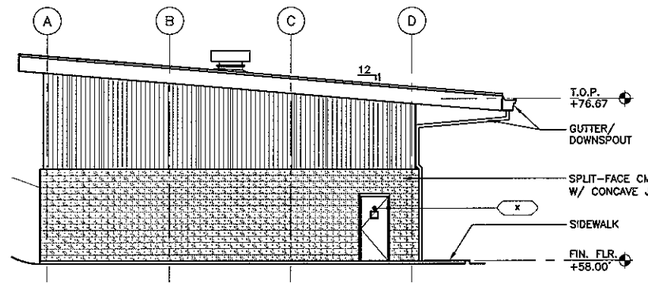

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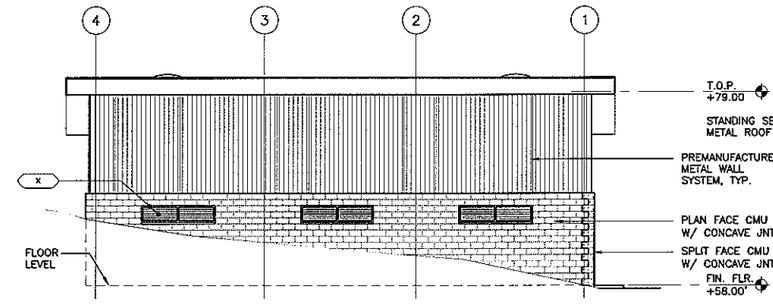

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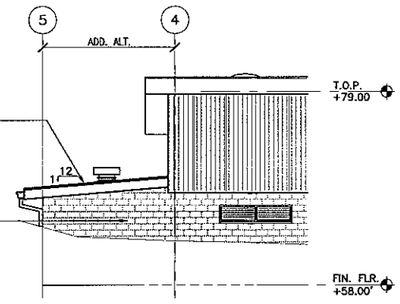

A3 PARTIAL NORTH ELEVATION (W/ ADD. ALT.)

SCALE: 1/8" = 1'-0"

EXTERIOR COLOR AND MATERIAL SCHEDULE					
CODE	DESCRIPTION	MANUFACTURER	PATTERN/ STYLE	LOCATION	REMARKS
EPT-1	PAINT – SHEET METAL (ACCENT)	BUTLER	TERRA BROWN	ROOF/FASCIA/GUTTER/ DOWNSPOUT	–
EPT-2	PANEL WALL SYSTEM	BUTLER	BIRCH WHITE	METAL PANELS	–
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–	–	–	–	–	–
–	–	–	–	–	–

0 2 4 8 12 16 20 24FT

SCALE: 1/8"=1'-0"

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18_ HONOAPILANI HWY
LAHAINA, MAUI, HAWAII

EXTERIOR ELEVATIONS/ EXTERIOR FINISH SCHEDULE

PROJECT NO:
CAD DWG FILE: pa-xxx
DRAWN BY: x
DATE:
DRAWING NO

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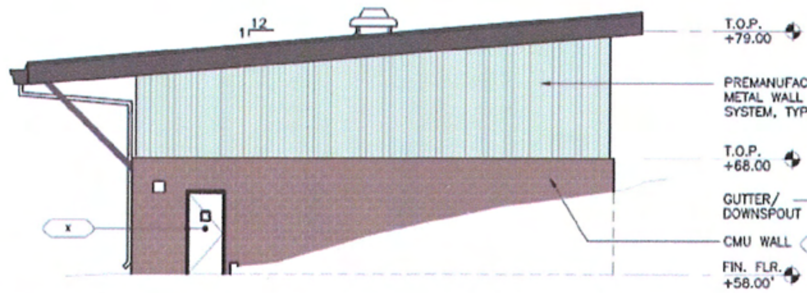
NAME: ah2234.dwg DATE: NOV 10, 2003



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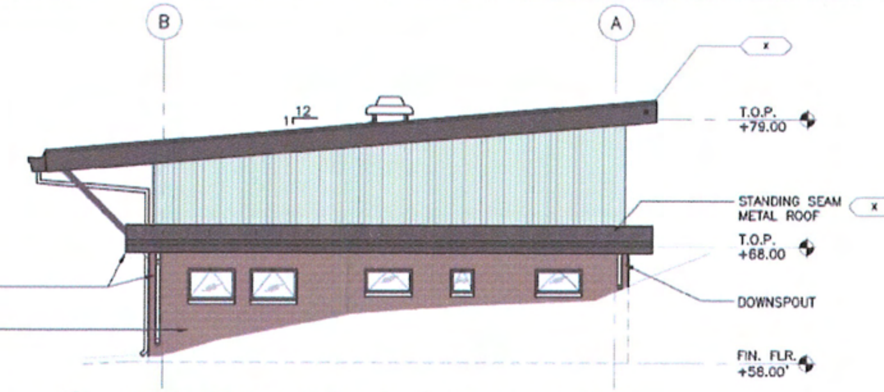

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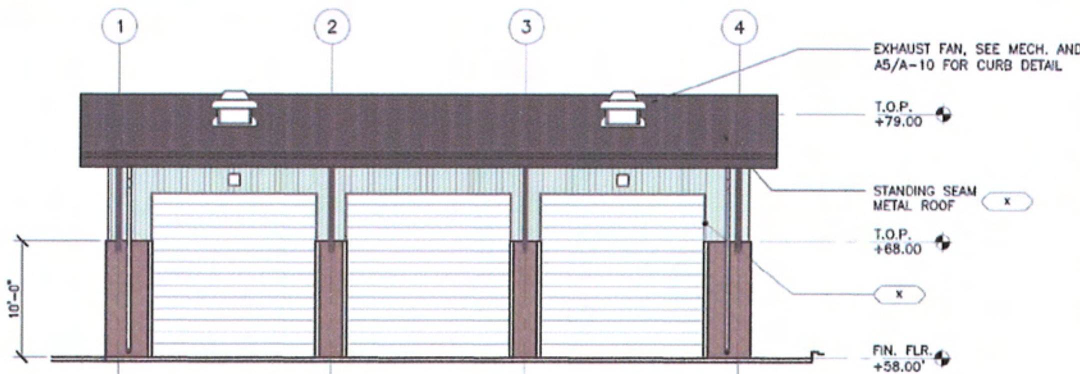

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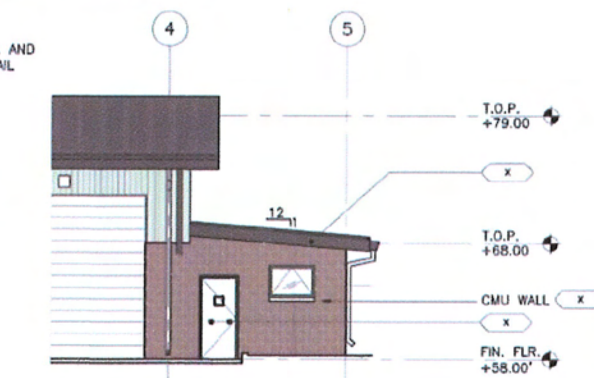

C3 PARTIAL SOUTH ELEVATION (W/ ADD. ALT.)
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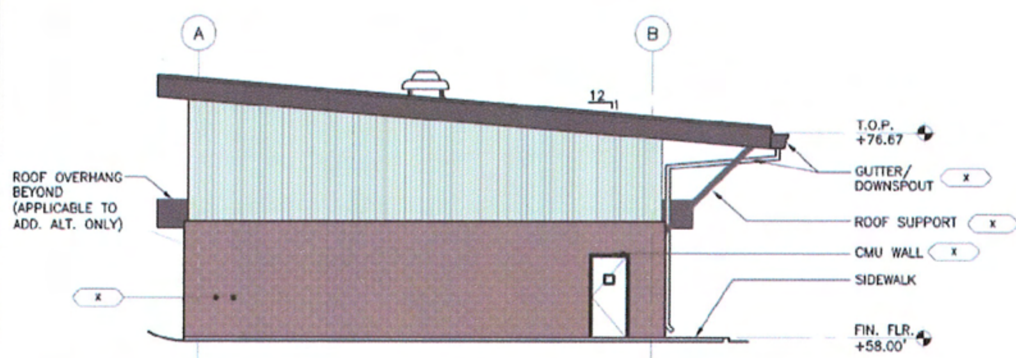

B1 WEST ELEVATION
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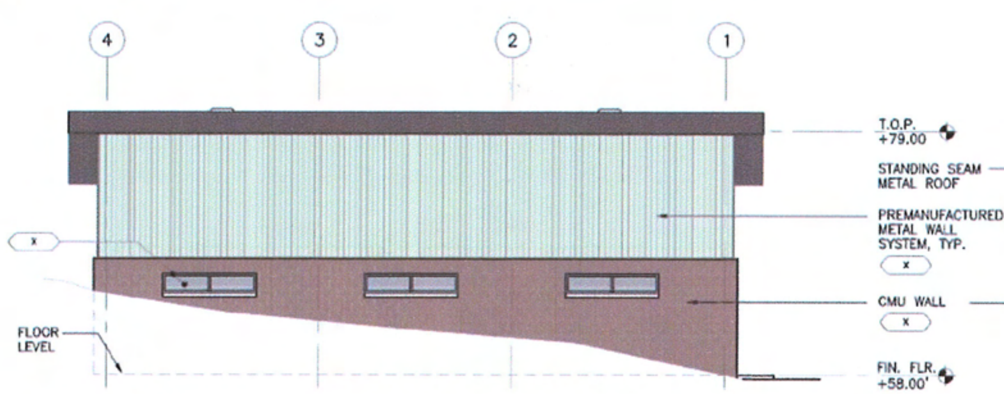
SCALE: 1/8"=1'-0"



A1 NORTH ELEVATION
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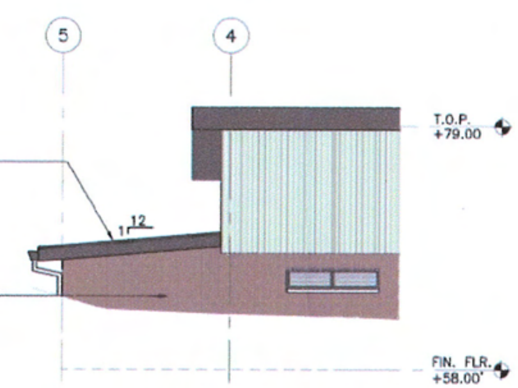

A3 PARTIAL NORTH ELEVATION (W/ ADD. ALT.)
SCALE: 1/8" = 1'-0"

EXTERIOR COLOR AND MATERIAL SCHEDULE

CODE	DESCRIPTION	MANUFACTURER	PATTERN/ STYLE	LOCATION	REMARKS
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AHL
ARCHITECTS·HAWAII LIMITED
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www.ahldesign.com

LAHAINA FIRE STATION
APPARATUS BAY ADDITION
1830 HONOAPIILANI HWY
LAHAINA, MAUI, HAWAII

EXTERIOR ELEVATIONS/ EXTERIOR FINISH SCHEDULE

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

signature — expiration date of the license

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

PROJECT NO:
CAD DWG FILE: pa-xxx
DRAWN BY: x
DATE:
DRAWING NO:

A-4

of Sheets

GENERAL NOTES:

1. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1986, AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI.

2. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

3. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

4. IN PERFORMING ALL WORK, THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION NECESSARY TO AVOID ANY DAMAGE INFLICTED TO AND IMPAIRMENT IN THE USE OF ANY EXISTING UTILITY LINE. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

6. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM RUBBISH, DUST, NOISE, EROSION, ETC. THE WORK SHALL BE DONE IN CONFORMANCE WITH THE AIR AND WATER POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.

7. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR NEW LINES.

8. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES, AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54, "WATER QUALITY STANDARDS" AND CHAPTER 11-55, "WATER POLLUTION CONTROL". BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

10. WHEN TRENCH EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT THEM FROM DAMAGE.

11. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY AND BEAR ALL COSTS INCURRED FOR ANY REMEDIAL ACTIONS.

12. PRIOR TO START OF EXCAVATION, THE CONTRACTOR SHALL NOTIFY ALL AGENCIES AND UTILITIES AND HAVE THEM LOCATE THEIR RESPECTIVE LINES AFFECTED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL OF HIS CONSTRUCTION AND SHALL PAY FOR ALL DAMAGES TO AND FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES.

13. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL OR BETTER CONDITION, ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC. UNLESS PROVIDED FOR SPECIFICALLY IN THE PROPOSAL. DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCIDENTAL AND INCLUDED WITHIN THE AMOUNT PAID FOR UNCLASSIFIED TRENCH EXCAVATION.

14. THE CONTRACTOR SHALL PROVIDE A LAND SURVEYOR, LICENSED IN THE STATE OF HAWAII, TO STAKE OUT BENCHMARK, BASELINE, CONSTRUCTION STAKES FOR THE NEW WORK. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWING PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.

15. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS FROM APPROPRIATE GOVERNMENT AGENCIES.

16. THE BENCH MARK FOR THIS PROJECT IS SHOWN ON DRAWING C-3.

17. ALL ABANDONED PIPE OPENINGS SHALL BE PLUGGED WITH CLASS C 2000 CONCRETE TO A DEPTH OF 1.50 TIMES THE DIAMETER OF THE PIPE. PAYMENT FOR CUTTING AND PLUGGING SHALL NOT BE MADE DIRECTLY BUT SHALL BE INCIDENTAL TO THE VARIOUS ITEMS OF THE PROPOSAL. THE CONTRACTOR SHALL VERIFY THE SIZE AND TYPE OF LINE TO BE PLUGGED.

18. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH DEPARTMENT OF HEALTH REGULATIONS TITLE 11, CHAPTER 46 REGARDING NOISE CONTROL FOR OAHU.

19. THE CONTRACTOR IS ALERTED TO THE ENCOUNTERING OF OBSTACLES WHETHER SHOWN ON THE PLANS OR NOT, OR WHICH MAY DIFFER IN LOCATION FROM THAT SHOWN ON THE PLANS WHICH MAY INTERFERE WITH HIS NORMAL METHOD OF OPERATIONS. THE CONTRACTOR SHALL TAKE INTO ACCOUNT ANY ADDITIONAL COSTS ANTICIPATED DUE TO THESE CONDITIONS AND SHALL HAVE THESE COSTS INCLUDED IN THE BID ITEMS WHICH HE FEELS MOST APPROPRIATE.

GENERAL NOTES CONT.:

20. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL ASSUMPTIONS, DEDUCTIONS, OR CONCLUSIONS HE MAY MAKE OR DERIVE FROM THE SUBSURFACE INFORMATION OR DATA FURNISHED ON THE PLANS. THE CONTRACTOR MUST SATISFY HIMSELF THROUGH HIS OWN INVESTIGATIONS AS TO WHAT SUBSURFACE CONDITIONS ARE TO BE ENCOUNTERED.

21. IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015).

22. IF THE CONTRACTOR ELECTS NOT TO EXPOSE AND VERIFY ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES AT CROSSINGS PRIOR TO PIPELINE EXCAVATION, HE FORFEITS HIS RIGHTS FOR ANY CLAIMS FOR COMPENSATION CAUSED BY ANY CONFLICTS WITH EXISTING UTILITIES AND STRUCTURES.

23. A SOILS REPORT BY HIRATA & ASSOCIATES, INC. DATED OCTOBER 7, 2008, CAN BE OBTAINED FROM THE OWNER.

24. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES WHICH SHALL CONFORM WITH THE ADAAG.

25. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS' DIVISION OF ENGINEERING BRANCH SEVEN (7) DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

GRADING NOTES:

1. ALL GRADING WORK SHALL CONFORM TO CHAPTER 20.08 OF THE MAUI COUNTY CODE, 1983, AS AMENDED, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL, AND SOIL REPORT BY HIRATA & ASSOCIATES, INC. DATED OCTOBER 7, 2008, WHERE APPLICABLE.

2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE COSTS INCURRED FOR ANY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.

3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE HEALTH DEPARTMENT.

4. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.

5. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.

6. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.

7. THE COUNTY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.

8. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE ENGINEER.

9. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.

10. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, CHAPTER 11-55, "WATER POLLUTION CONTROL" AND CHAPTER 11-54, "WATER QUALITY STANDARDS" AND THE NPDES PERMIT FOR THE PROJECT.

11. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.

12. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.

13. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.

14. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.

15. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHOULD COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE PERMITEE. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

EROSION/TEMPORARY DUST CONTROL NOTES:

1. DURING CONSTRUCTION, PREVENTIVE MEASURES SHALL BE USED TO CONTROL FORESEEABLE DUST, EROSION OR SEDIMENTATION PROBLEMS, WHICH MAY ARISE AS THE JOB PROGRESSES.

2. ALL FILL, SUBBASE AND BASE MATERIAL PLACED WITHIN THE ROAD PAVEMENT PRISM SHALL BE SUBSTANTIALLY COMPACTED BY THE END OF THE DAY.

3. THE CONTRACTOR SHALL CONDUCT HIS GRADING OPERATIONS SO THAT EXCAVATION EMBANKMENT AND IMPORTED MATERIAL SHALL BE DAMPENED WITH WATER DURING HIS GRADING OPERATIONS AT ALL TIMES.

4. WATER TRUCK AND/OR TEMPORARY SPRINKLERS SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES TO ENSURE BARE EARTH DOES NOT CREATE A DUST PROBLEM.

5. FUGITIVE DUST AND SOLID WASTE DISPOSAL DURING GRUBBING AND GRADING ACTIVITIES SHALL MEET REQUIREMENTS OF ADMINISTRATIVE RULES, TITLE II, CHAPTER 60.1, "AIR POLLUTION CONTROL," AND CHAPTER 56, "SOLID WASTE MANAGEMENT CONTROL."

6. TEMPORARY VEGETATIVE COVER SHALL BE PLANTED WITHIN A PERIOD OF THIRTY (30) CALENDAR DAYS AFTER THE SITE HAS BEEN GRADED OR BARED OF VEGETATION OR IF FINAL GRADING OR LANDSCAPING OF THE SITE WILL BE SUSPENDED FOR MORE THAN THIRTY (30) CALENDAR DAYS, TEMPORARY VEGETATIVE COVER SHALL CONSIST OF 40-LB COMMON RYE GRASS SEED PER ACRE. 400 LB PER ACRE 10-10-10 OR EQUIVALENT FERTILIZER WORKED INTO SEED BED BEFORE PLANTING. TEMPORARY SPRINKLER SYSTEM TO BE INSTALLED CONCURRENTLY WITH ALL PLANTINGS. PLANTING AND MAINTENANCE TO GRASS SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," DATED SEPTEMBER 1986.

PUBLIC HEALTH, SAFETY AND CONVENIENCE:

1. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.

2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.

3. THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.

4. AS REQUIRED BY THE COUNTY, THE CONTRACTOR SHALL HIRE SPECIAL DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.

5. DURING NON-WORKING HOURS ALL LANES SHALL BE OPEN AND ALL EXCAVATIONS ON THE ROADWAY SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS TO THE PROPERTY USING THESE RIGHTS-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.

6. DURING WORKING HOURS, THE CONTRACTOR SHALL MAINTAIN A ROADWAY SUITABLE FOR ONE LANE OF TRAFFIC WITH FLAGMEN AT BOTH ENDS, ALTERNATING DIRECTION OF TRAFFIC FLOW.

7. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE, AND SAFETY OF THE PUBLIC.

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NOTES - 1

DIANE Y. KODAMA
LICENSED PROFESSIONAL ENGINEER
No. 8688-C
HAWAII, U.S.A.

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Signature 04/30/12 expiration date of the license

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

PROJECT NO:
CAD DWG FILE:
DRAWN BY:
DATE: 11/24/10
DRAWING NO

C-1

of Sheets

NAME: ah2234.dwg DATE: NOV 10, 2003

WATER NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF DWS STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS STANDARD DETAILS BEFORE COMMENCING CONSTRUCTION.
3. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
4. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE NEW WATERLINE, UNLESS NOTED OTHERWISE, AND WILL NOT BE PAID FOR SEPARATELY.
5. CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
6. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF VALVE MANHOLE COVER SHALL BE THREE (3) FEET.
7. THE CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
8. CONNECTION TO DWS SYSTEM:
   A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. HE SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. HE SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
   B. WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS, AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
   C. AUTHORIZED DWS PERSONNEL MAY BE REQUIRED TO MAKE THE FINAL CONNECTION TO THE EXISTING LINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY DWS FOR SAID WORK, INCLUDING THE COST OF PRESSURE TESTING AND DISINFECTION.
   D. IF THE DWS PROVIDES ONLY INSPECTION AND SUPERVISING OPERATORS, AND DOES NOT PROVIDE PERSONNEL FOR THE ACTUAL CONNECTION, THE CONTRACTOR SHALL PROVIDE ALL PIPEFITTERS AND LABORS TO MAKE THE CONNECTION.
   E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR TRENCH EXCAVATION, BACKFILLING, CLEANING AND CHLORINATION, PAVING, AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF DWS.
9. MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".
10. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTING WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
    A. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY)FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
    B. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
    C. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS.
11. ALL BURIED METALS SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.
12. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
13. THE CONTRACTOR SHALL PAINT AND NUMBER THE FIRE HYDRANT. NUMBERING TO BE FURNISHED BY DWS.
14. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY A THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
15. THE DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
16. THE CONTRACTOR SHALL SUBMIT TWO SETS OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN TIF FORMAT SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

CHLORINATION OF WATER SYSTEMS

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
7. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.
8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
10. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

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NOTES - 2

DIANE Y. KODAMA
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No. 6688-C
HAWAII, U.S.A.

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

signature 04/30/12 expiration date of the license

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DRAWN BY:
DATE: 11/24/10
DRAWING NO

C-2

of Sheets

NAME: ahl2234.dwg DATE: NOV 10, 2003

N

329°30'
300.00
310°15'
390.00
23°00'
375.37
235°30'
799.86
296°00'23"
309.75
357°40'51"
160.30
344°52'
190°04'01"
333.21
84°39'22"
645.74
65°16'
150°16'01"
601.02
152°46'
170.11

TMK: (2)4-5-21:020

TMK: (2)4-5-21:016

TMK: (2)4-5-21:018

PROJECT AREA

STA FS-2
½" PIPE
ELEV=68.55

EXIST 1-1/2"
WATER METER
NO. 96931140

STA CP-8
MAG NAIL
ELEV=57.50

EXIST PARKING

EXIST FIRE STATION

STA FS-1
½" PIPE
ELEV=60.79

TMK: (2)4-5-21:011

TMK: (2)4-5-21:010

TMK: (2)4-5-21:019

TMK: (2)4-5-21:014

K A A A H I S T R E E T

H O N O A P I I L A N I H I G H W A Y

STA CP-6
½" PIPE
ELEV=38.26

P CURVE DATA:

①

Δ	5°00'
½	2°30'
R	1949.95
T	85.14
C	170.11
LC	170.17

BENCHMARK
REFERRED TO HIGHWAY MONUMENT AT STA 23+45.99 AS SHOWN ON F.A.S.P. NO. S-0300 (1). ELEV = 14.41.

GENERAL SITE PLAN
SCALE: 1"=50'

1" = 50' SCALE 0 50 100 150 FEET

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GENERAL SITE PLAN

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of Sheets

NAME: ahl2234.dwg DATE: NOV 10, 2003

DRAIN INLET FILTER, SEE DETAIL SHEET C-5

LIMITS OF GRADING

CONSTRUCTION INGRESS/EGRESS, SEE DETAIL SHEET C-5

SILT FENCE, SEE DETAIL SHEET C-5

EXISTING CATCH BASIN FILTER, SEE DETAIL SHEET C-5

SILT FENCE, SEE DETAIL SHEET C-5

EXISTING CATCH BASIN FILTER, SEE DETAIL SHEET C-5

KAAHI STREET

KAHOMAENA PLACE

LEGEND & ABBREVIATIONS

- 230 — EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- 240 — PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- DIRECTION OF SURFACE RUNOFF
- SILT FENCE AND LIMITS OF GRADING
- LIMITS OF GRADING
- EXIST. DRAINLINE
- PROPOSED DRAINLINE

EROSION CONTROL PLAN

SCALE: 1"=20'

1" = 20' SCALE 0 20 40 60 FEET

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www.ahldesign.com

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APPARATUS BAY
1830 HONOAPIILANI HWY
LAHAINA, MAUI, HAWAII

EROSION CONTROL PLAN

DIANE Y. KODAMA
LICENSED PROFESSIONAL ENGINEER
No. 8688-C
HAWAII, U.S.A.

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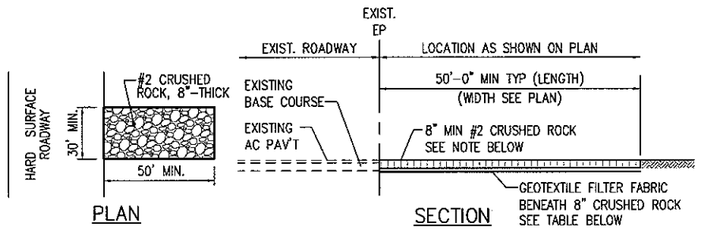
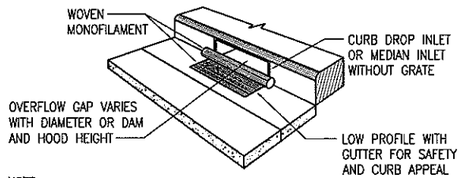


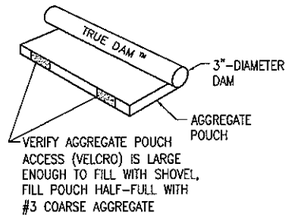
NOTE:
8" CRUSHED ROCK LAYER SHALL BE REMOVED IMMEDIATELY PRIOR TO INSTALLATION OF ROADWAY BASE COURSE.

TABLE A GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGH	430 LB (ASTM D3786)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

CONSTRUCTION INGRESS/EGRESS
NOT TO SCALE



NOTE:
TRUE DAM IS MANUFACTURED BY DANDY PRODUCTS, INC., GROVE CITY, OHIO.

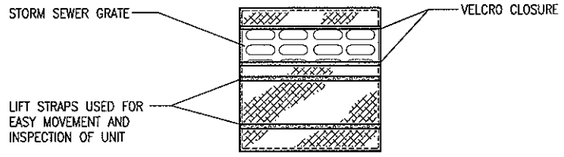


EXISTING CURB INLET PROTECTION
NOT TO SCALE

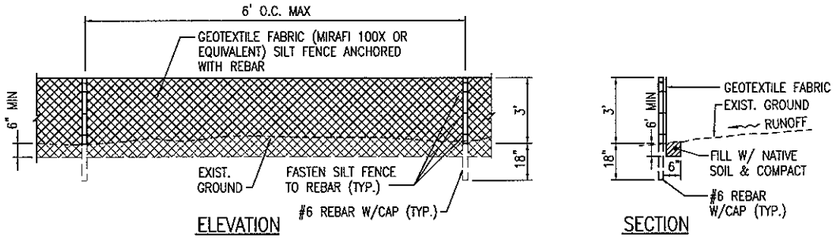
HI-FLOW DANDY BAG® (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV.
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m² (gal/min/ft²)	5907 (145)
Permittivity	ASTM D 4491	Sec⁻¹	2.1

*Note: All Dandy Bags® can be ordered with our optional oil absorbent pillows



DANDY BAG FILTER FOR DRAIN INLETS
NOT TO SCALE



SILT FENCE DETAIL
NOT TO SCALE

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FAX: (808) 521-3280
www.ahldesign.com

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APPARATUS BAY
1830 HONOAPIILANI HWY
LAHAINA, MAUI, HAWAII

EROSION CONTROL DETAILS

DIANE Y. KODAMA
LICENSED PROFESSIONAL ENGINEER
No. 8688-C
HAWAII, U.S.A.

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NAME: ahl2234.dwg DATE: NOV 10, 2003

NAME: dh2234.dwg DATE: NOV 10, 2003

EXIST FIRE STATION

4-5-21: 16

FIRE STATION

EXIST. AIR & WATER LINES TO BE INTERCEPTED. CAP TEMPORARILY FOR NEW CONN. SEE UTILITY PLAN

DEMOLISH AND REMOVE FUEL TANK ENCLOSURE

EXIST FUEL TANK TO BE RELOCATED (SEE MECH)

DEMOLISH AND REMOVE CONC WALKWAY (210± SF)

DEMOLISH & REMOVE EXISTING STRUCTURE

EXIST CONTAINER TO BE RELOCATED (BY OTHERS)

EXIST AIR & WATER DISPENSER TO BE RELOCATED (BY MECH)

DEMOLISH & REMOVE EXISTING STRUCTURE

DEMOLISH AND REMOVE CONC PAVEMENT (225± SF)

SAWCUT EXISTING CONC PAVEMENT (110± LF)

DEMOLISH AND REMOVE CONC PAVEMENT (570± SF)

DEMOLISH AND REMOVE CONC CURB (90± LF)

STA 0+89.23 ℄-A (END)

STA 0+11.6 ℄-A o/s 21.4' LT

STA 0+11.6 ℄-A o/s 10' LT

STA 0+00 ℄-A (BEGIN)

"℄-A" DATA:

Δ	7°20'31"
½ Δ	3°40'16"
R	5.00
T	3.59
C	5.83
LC	6.23

NOTE:

AN ONSITE PHOTOIONIZATION DETECTOR SHOULD BE USED TO DETERMINE ADDITIONAL IMPACTS IN THE SUBSURFACE SOILS AND BENEATH THE CONCRETE PADS DURING AST AND PAD REMOVAL. ADDITIONALLY, CONFIRMATION SOIL SAMPLES BENEATH THE PAD SHOULD ALSO BE COLLECTED AND ANALYZED FOR TPH-D FOLLOWING REMOVAL ACTIVITIES AS REQUIRED UNDER HAWAII STATE LAW.

DEMOLITION PLAN

SCALE: 1"=10'

1" = 10' SCALE 0 10 20 30 FEET

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DEMOLITION PLAN

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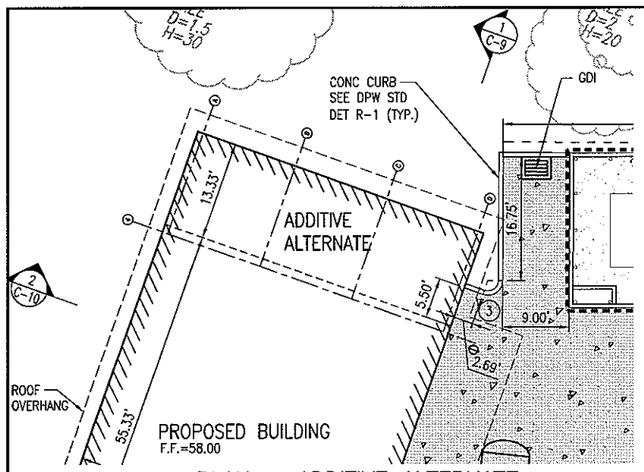
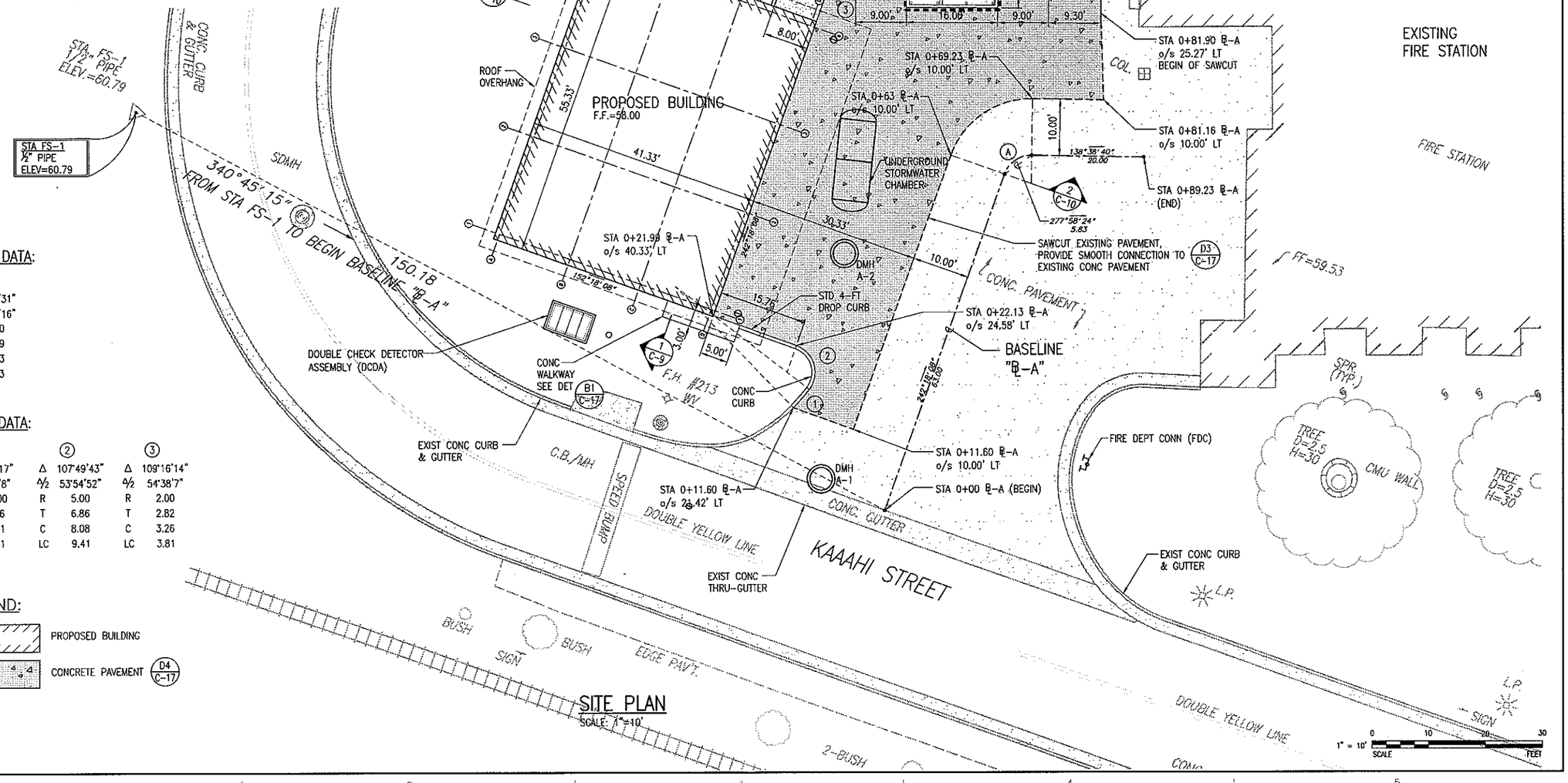
of Sheets

NAME: ah2234.dwg DATE: NOV 10, 2003



PLAN – ADDITIVE ALTERNATE
SCALE: 1"=10'



SITE PLAN
SCALE: 1"=10'

"℄-A" DATA:

	A
Δ	71°20'31"
½	35°40'16"
R	5.00
T	3.59
C	5.83
LC	6.23

CURB DATA:

	①	②	③
Δ	8°14'17"	107°49'43"	109°16'14"
½	4°07'8"	53°54'52"	54°38'7"
R	30.00	5.00	2.00
T	2.16	6.86	2.82
C	4.31	8.08	3.26
LC	4.31	9.41	3.81

LEGEND:

PROPOSED BUILDING

CONCRETE PAVEMENT (D4 / C-17)

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1830 HONOAPIILANI HWY
LAHAINA, MAUI, HAWAII

SITE PLAN

DIANE Y. KODAMA
LICENSED PROFESSIONAL ENGINEER
No. 8688-C
HAWAII, U.S.A.

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of Sheets

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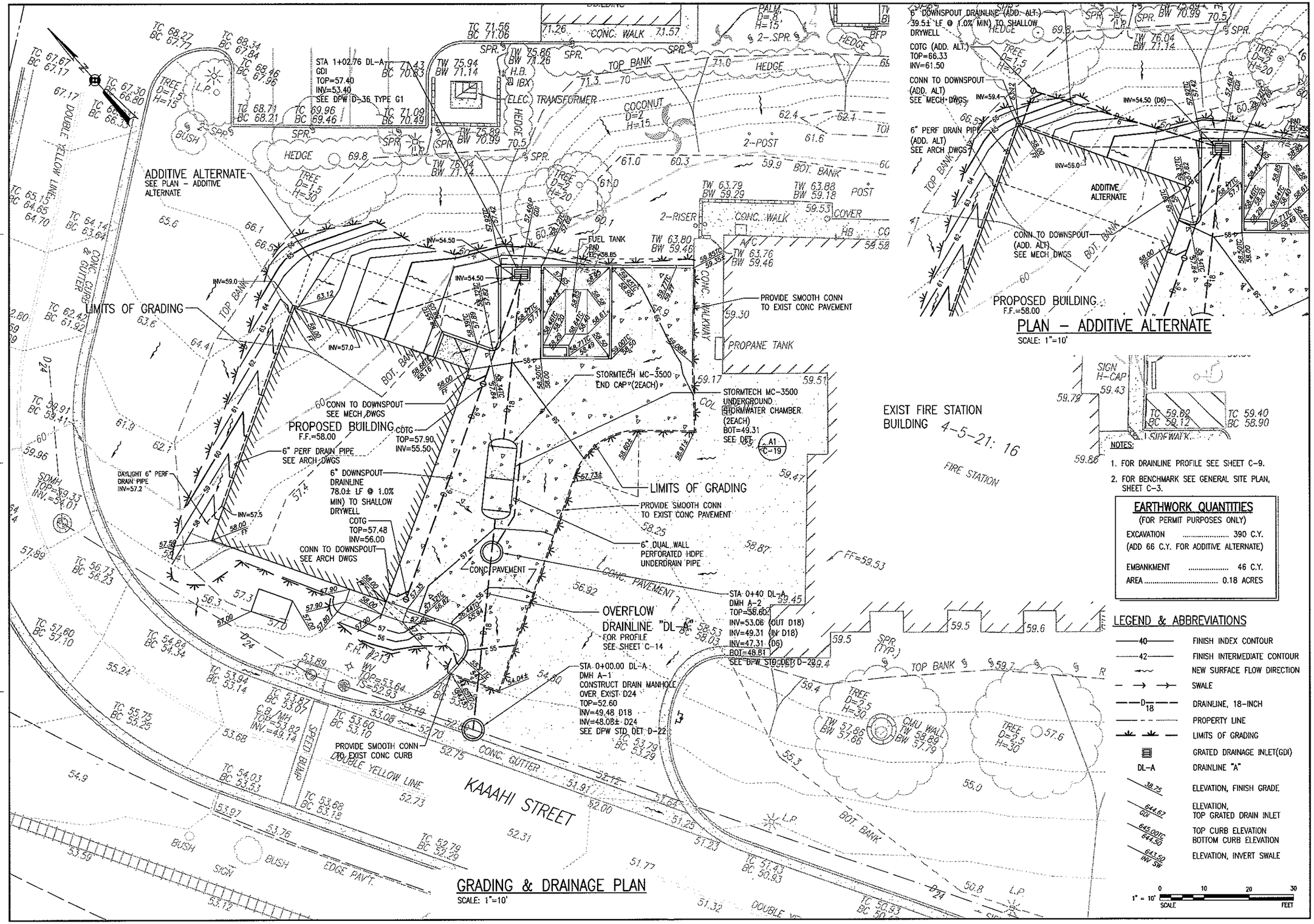

GRADING & DRAINAGE PLAN
SCALE: 1"=10'

PLAN - ADDITIVE ALTERNATE
SCALE: 1"=10'

NOTES:

1. FOR DRAINLINE PROFILE SEE SHEET C-9.
2. FOR BENCHMARK SEE GENERAL SITE PLAN, SHEET C-3.

EARTHWORK QUANTITIES
(FOR PERMIT PURPOSES ONLY)

EXCAVATION	390 C.Y.
(ADD 66 C.Y. FOR ADDITIVE ALTERNATE)	
EMBANKMENT	46 C.Y.
AREA	0.18 ACRES

LEGEND & ABBREVIATIONS

40	FINISH INDEX CONTOUR
42	FINISH INTERMEDIATE CONTOUR
	NEW SURFACE FLOW DIRECTION
	SWALE
D 18	DRAINLINE, 18-INCH
	PROPERTY LINE
	LIMITS OF GRADING
	GRATED DRAINAGE INLET(GDI)
DL-A	DRAINLINE "A"
38.75	ELEVATION, FINISH GRADE
644.67 / GDI	ELEVATION, TOP GRATED DRAIN INLET
645.00TC / 644.50	TOP CURB ELEVATION / BOTTOM CURB ELEVATION
643.50 INV. SW	ELEVATION, INVERT SWALE

1" = 10' SCALE 0 10 20 30 FEET

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GRADING & DRAINAGE PLAN

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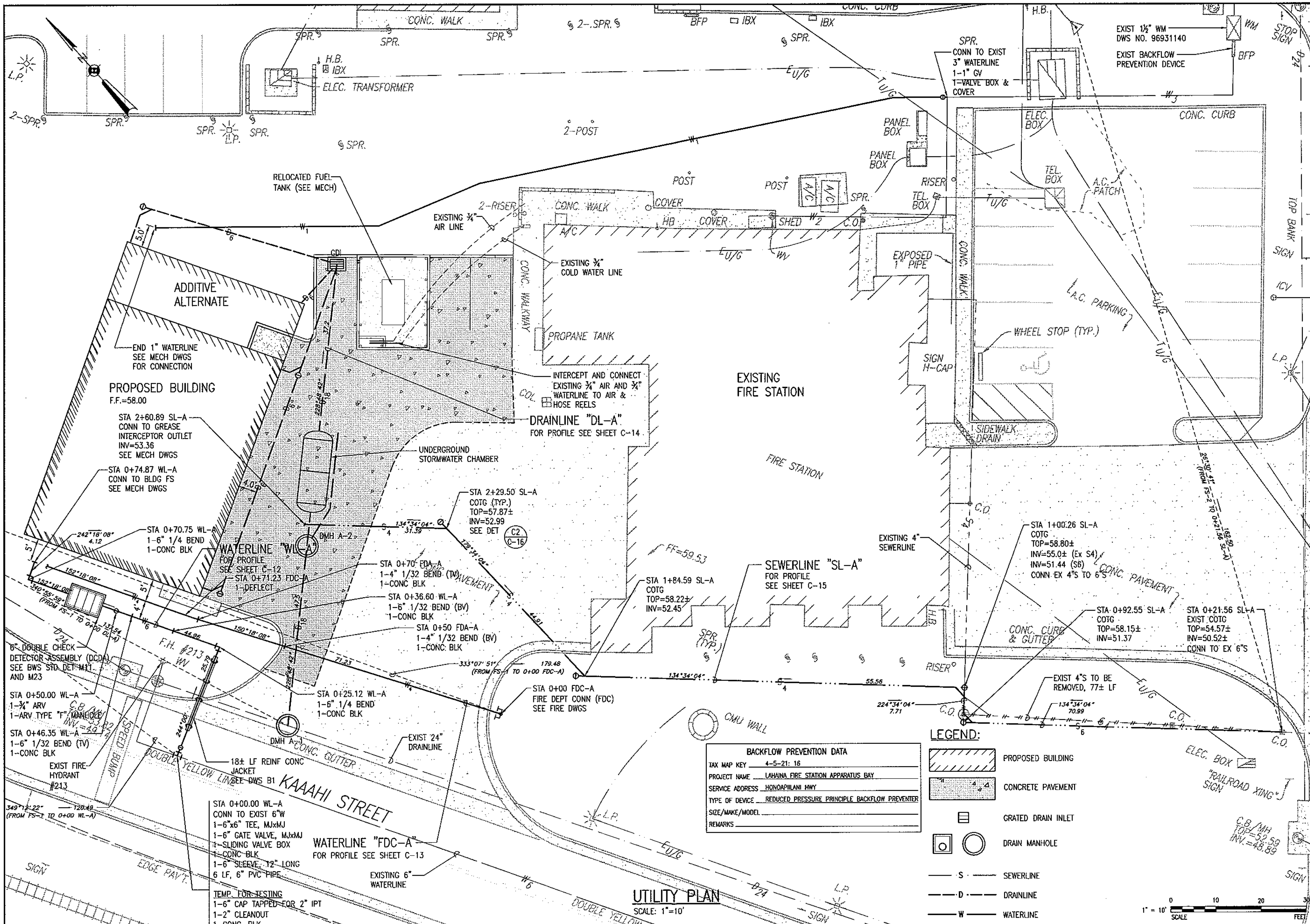

ADDITIVE ALTERNATE
PROPOSED BUILDING
F.F.=58.00
EXISTING FIRE STATION
FIRE STATION
KAAAHI STREET
RELOCATED FUEL TANK (SEE MECH)
ELEC. TRANSFORMER
CONC. WALK
CONC. WALKWAY
PROPANE TANK
EXISTING ¾" AIR LINE
EXISTING ¾" COLD WATER LINE
END 1" WATERLINE SEE MECH DWGS FOR CONNECTION
INTERCEPT AND CONNECT EXISTING ¾" AIR AND ¾" WATERLINE TO AIR & HOSE REELS
DRAINLINE "DL-A" FOR PROFILE SEE SHEET C-14
UNDERGROUND STORMWATER CHAMBER
STA 2+60.89 SL-A CONN TO GREASE INTERCEPTOR OUTLET INV=53.36 SEE MECH DWGS
STA 0+74.87 WL-A CONN TO BLDG FS SEE MECH DWGS
STA 2+29.50 SL-A COTG (TYP.) TOP=57.87± INV=52.99 SEE DET C2 C-16
STA 0+70.75 WL-A 1-6" 1/4 BEND 1-CONC BLK
WATERLINE "WL-A" FOR PROFILE SEE SHEET C-12
STA 0+71.23 FDC-A 1-DEFLECT
STA 0+70 FDA-A 1-4" 1/32 BEND (TV) 1-CONC BLK
STA 0+36.60 WL-A 1-6" 1/32 BEND (BV) 1-CONC BLK
STA 0+50 FDA-A 1-4" 1/32 BEND (BV) 1-CONC BLK
STA 0+25.12 WL-A 1-6" 1/4 BEND 1-CONC BLK
STA 0+00 FDC-A FIRE DEPT CONN (FDC) SEE FIRE DWGS
STA 1+84.59 SL-A COTG TOP=58.22± INV=52.45
SEWERLINE "SL-A" FOR PROFILE SEE SHEET C-15
EXISTING 4" SEWERLINE
STA 1+00.26 SL-A COTG TOP=58.80± INV=55.0± (Ex S4) INV=51.44 (S6) CONN EX 4"S TO 6"S
STA 0+92.55 SL-A COTG TOP=58.15± INV=51.37
STA 0+21.56 SL-A EXIST COTG TOP=54.57± INV=50.52± CONN TO EX 6"S
EXIST 4"S TO BE REMOVED, 77± LF
6" DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) SEE BWS STD DET M11 AND M23
STA 0+50.00 WL-A 1-¾" ARV 1-ARV TYPE "F" MANHOLE
STA 0+46.35 WL-A 1-6" 1/32 BEND (TV) 1-CONC BLK
EXIST FIRE HYDRANT #213
18± LF REINF CONC JACKET SEE DWS B1
EXIST 24" DRAINLINE
STA 0+00.00 WL-A CONN TO EXIST 6"W 1-6"x6" TEE, MJxMJ 1-6" GATE VALVE, MJxMJ 1-SLIDING VALVE BOX 1-CONC BLK 1-6" SLEEVE, 12" LONG 6 LF, 6" PVC PIPE
TEMP. FOR TESTING 1-6" CAP TAPPED FOR 2" IPT 1-2" CLEANOUT 1-CONC. BLK.
WATERLINE "FDC-A" FOR PROFILE SEE SHEET C-13
EXISTING 6" WATERLINE
SPR. CONN TO EXIST 3" WATERLINE 1-1" GV 1-VALVE BOX & COVER
EXIST 1½" WM DWS NO. 96931140
EXIST BACKFLOW PREVENTION DEVICE
CONC. CURB
A.C. PARKING
WHEEL STOP (TYP.)
A.C. PATCH
SIDEWALK DRAIN
CONC. CURB & GUTTER
CONC. PAVEMENT
CMU WALL
ELEC. BOX
"RAILROAD XING" SIGN
C.B./MH TOP=52.59 INV.=48.89
DOUBLE YELLOW LINE
EDGE PAV'T.
SPEED BUMP
TOP BANK

BACKFLOW PREVENTION DATA	
TAX MAP KEY	4-5-21: 16
PROJECT NAME	LAHAINA FIRE STATION APPARATUS BAY
SERVICE ADDRESS	HONOAPIILANI HWY
TYPE OF DEVICE	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
SIZE/MAKE/MODEL	
REMARKS	

LEGEND:

- PROPOSED BUILDING
- CONCRETE PAVEMENT
- GRATED DRAIN INLET
- DRAIN MANHOLE
- — S — SEWERLINE
- — D — DRAINLINE
- — W — WATERLINE

UTILITY PLAN

SCALE: 1"=10'

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LAHAINA, MAUI, HAWAII

UTILITY PLAN

DIANE Y. KODAMA LICENSED PROFESSIONAL ENGINEER No. 8688-C HAWAII, U.S.A.

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signature 04/30/12 expiration date of the license

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APPENDIX B.

Preliminary Engineering Report

Lahaina Fire Station
Apparatus Bay Addition

Lahaina, Maui, Hawai'i
TMK: (2nd Div) 4-5-021:016

Preliminary Engineering Report

February 2011

Prepared for:

Architects Hawaii, Ltd.
1001 Bishop Street
ASB Tower, Suite 200
Honolulu, Hawaii 96813

Prepared by:

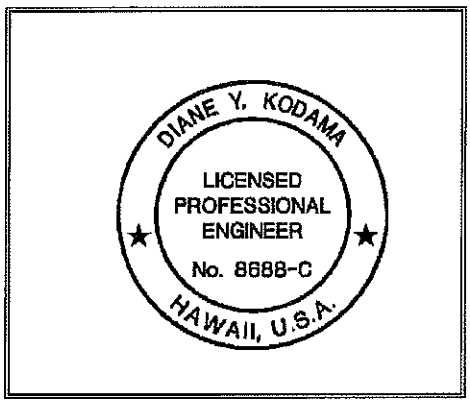
AECOM
1001 Bishop Street
ASB Tower, Suite 1600
Honolulu, Hawaii 96813

Lahaina Fire Station
Apparatus Bay Addition

Preliminary Engineering Report

TMK: (2nd Div) 4-5-021:016 (por.)

February 2011



(Expires April 30, 2012)

This work was prepared by me or under my direct supervision.

Signature (***Diane Y. Kodama***) 2/9/11
AECOM Date

TABLE OF CONTENTS

SECTION 1

INTRODUCTION

1.1 PURPOSE

The objective of this Preliminary Engineering Report (PER) is to provide a brief description and evaluation of the physical characteristics of the proposed Lahaina Fire Station, Apparatus Bay Addition project.

1.2 GENERAL INFORMATION

The project is located in the Lahaina district of Maui (see attached Figure 1, Vicinity and Location Maps and Figure 2, Site Plan). The Lahaina Fire Station, Apparatus Bay Addition is being developed by the County of Maui, Department of Fire & Public Safety. The proposed improvements include demolition of the storage shed and relocation of a fuel storage tank to provide a space for an Apparatus Bay Addition. The fire station Apparatus Bay Addition will accommodate a fire truck, utility vehicle, and boat/trailer combination. The project will include an additive bid item for living quarters. The 0.22 acre project area is located within the 16.78 acre development area.

B. Owner: County of Maui

Contact: Lee Mainaga, Fire Services Officer
Department of Fire and Public Safety
200 Dairy Road
Kahului, Maui, Hawai'i 96733
Phone: (808) 270-5542
Email: lee.mainaga@co.maui.hi.us

C. Vicinity & Location Map (See Figure 1, Vicinity and Location Maps)

SECTION 2

PHYSICAL ENVIRONMENT

2.1 LOCATION

The Lahaina Fire Station, Apparatus Bay Addition project site is located in Lahaina, Maui, Hawaii 96761, at 1830 Honoapiilani Highway. Refer to Figure 1 for a location map of the project. The Tax Map Key (TMK) for the project lot is (2)4-5-021:016 (por.).

2.2 TOPOGRAPHY

The project site generally slopes from an elevation of approximately 71.5 feet above sea level at its highest point to approximately 48.1 feet at its lowest. The drainage generally flows in a south-westerly direction.

2.3 SOILS

According to the August 1972 publication *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (Ref 4) by the United States Department of Agriculture, Soil Conservation Service, the soil at the project site is Waihikuli stony silty clay, with slopes of 3 to 7 percent (soil classification WcB). This series consists of well-drained soils on smooth, low uplands on the island of Maui. Permeability is moderate. Runoff is slow, and the erosion hazard is slight.

2.4 DRAINAGE/FLOODING

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) of the project area (Map Number 150003 0353 E, Ref 1), the area is classified as Zone X – 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.

2.5 RAINFALL

According to the Hawaii State Climate Office (HSCO) the annual rainfall for the project area amounts to 15.05 inches. The measurement was taken from Station 361 through the years 1949 and 2000. Station 361 is located approximately 1.8 miles south of the project site at 20.88 N, 156.68 W, 42 feet above sea level.

SECTION 3

UTILITIES

3.1 WATER SYSTEM

The existing fire station's domestic water is serviced from a 1-1/2" water meter located along Kikowaena Street along the northeast side of the building. The existing Department of Water Supply water meter number is 16529990. The flow range for a 1-1/2" water meter is between 51 gpm and 100 gpm. The domestic water demand from the existing fire station is 26 gpm.

The proposed domestic water for the new building will connect to an existing waterline along the northeast side of the existing fire station building. The domestic water demand from the proposed Apparatus bay addition is 17 gpm and total demand of existing and proposed building is 35 gpm.

The domestic water demand from the existing 1-1/2" water meter is sufficiently sized to accommodate the added water demands of the Apparatus Bay Addition.

An existing fire hydrant is located just south of the project site along Kaaahi Street. The existing fire hydrant number is 213.

Water for the proposed building's fire sprinkler system will be connected to an existing 6" waterline main along Kaaahi Street. Fire flow (FF) requirement for the proposed Apparatus Bay Addition is 728 gpm.

3.2 SEWER SYSTEM

The existing fire station's sanitary sewer is connected to an 8" main along Kikowaena Street on the south side of the building. A portion of the existing fire station's 4" sewer lateral will be replaced to 6" sewer lateral and connected to existing 6" sewer lateral at the existing COTG before connecting to the sewer main. The proposed sewer system will be joined to this 6" sewer pipe replaced.

Calculation of Sewer-Quantity – Existing Condition

Criteria: a. 10 people per shift with a 2 company station with 5 people each (Per Fire Department)

b. Institution like hospital generates wastewater of 200 gpcd (Ref. 1)

Average Daily per Capita Flow = 200 Gallon per Capita per Day (GPCD)

Average Wastewater Flow = 200 GPCD × 10 People = 2000 GPD

Maximum Wastewater Flow = Average Wastewater Flow × Flow Factor

= 2000 GPD × 5 =10,000 GPD

Dry Weather I/I = 5 Gallon per capita per day × 10 people = 50 GPD

Wet Weather I/I = 1,250 Gallon per Acre per day × 0.5 Acre = 625 GPD

Design Average Flow = Average Wastewater Flow + Dry Weather I/I = 2000 + 50 = 2,050 GPD

Design Maximum Flow = Maximum Wastewater Flow + Dry Weather I/I

= 10,000 + 50 = 10,050 GPD

Design Peak Flow = Design Maximum Flow + Wet Weather I/I

= 10,050 + 625 = 10,675 **GPD**

Calculation of Sewer-Quantity – Proposed Condition

Criteria: a. 11 people per with a 2 company station with 5 people each. Proposed addition will add one more person (Per Fire Department)

b. Institution like hospital generates wastewater of 200 gpcd (Ref. 1)

Average Daily per Capita Flow = 200 Gallon per Capita per Day (GPCD)

Average Wastewater Flow = 200 GPCD × 11 People = 2200 GPD

Maximum Wastewater Flow = Average Wastewater Flow × Flow Factor

= 2200 GPD × 5 = 11,000 GPD

Dry Weather I/I = 5 Gallon per capita per day × 11 people = 55 GPD

Wet Weather I/I = 1,250 Gallon per Acre per day × 0.5 Acre = 625 GPD

Design Average Flow = Average Wastewater Flow + Dry Weather I/I = 2200 + 55 = 2255 GPD

Design Maximum Flow = Maximum Wastewater Flow + Dry Weather I/I

= 11,000 + 55 = 11,055 GPD

Design Peak Flow = Design Maximum Flow + Wet Weather I/I

= 11,055 + 625 = **11,680 GPD**

The calculated flows for the existing and proposed conditions are 10,675 and 11,680 gpd respectively. The increase in the design peak flow generated by this project is approximately 1,005 gallon per day (gpd).

3.3 DRAINAGE CONDITIONS

A topographic survey of the project area indicates the existing runoff from the site currently sheet flows along the ground surface to the south into an existing underground drainage system located along Kaaahi Street and Kikowaena Street. The existing flow rate from the site's drainage study area of 1.31 acres is approximately 4.39 cfs.

The proposed drainage system will consist of a drainage inlet, underground storm drainage chamber, drain manhole, and an overflow drainline which connects to the existing drainline along Kaaahi Street. The proposed flow rate within the same drainage study area, in the additive alternate bid condition which means the most intensive design scenario, is 4.57 cfs. The proposed project increases the existing flow rate within the drainage study area by 0.18 cfs. Flows from a portion of the drainage area will be discharged into an underground storm water chamber which is designed to store the difference between 50-year, 1hour storm at the proposed developed condition and the existing condition. Flows exceeding the 50-year capacity of the underground storm water chamber will be discharged into the existing drainage system along Kaaahi Street.

Directing a portion of the surface flow through grassed areas and installation of an embedment stone layer below the underground storm water chambers are permanent best management practices that will improve the quality of the runoff entering the existing drainage system.

For more information regarding drainage patterns and properties, refer to the Drainage Report that accompanies this PER under a separate cover.

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A. *Flood Insurance Rate Map, Maui County, Hawaii*, Panel 161 of 400, Community-Panel Number 150003 0161 C, National Flood Insurance Program, Federal Emergency Management Agency, August 3, 1998.

B. *Rainfall-Frequency Atlas of the Hawaiian Islands for Areas to 200 Square Miles, Durations to 24 Hours, and Return Periods from 1 to 100 Years*, Technical Paper No. 43, US Department of Commerce, Weather Bureau, 1962.

C. *Real Estate Handbook, Zones 1 Thru 6, State of Hawaii, Second Tax Division, Counties of Maui & Kalawao*, First American Real Estate Solutions, Realty Directory, Property Data, 33rd Edition, 1999.

D. *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, United States Department of Agriculture, Soil Conservation Service, August 1972.

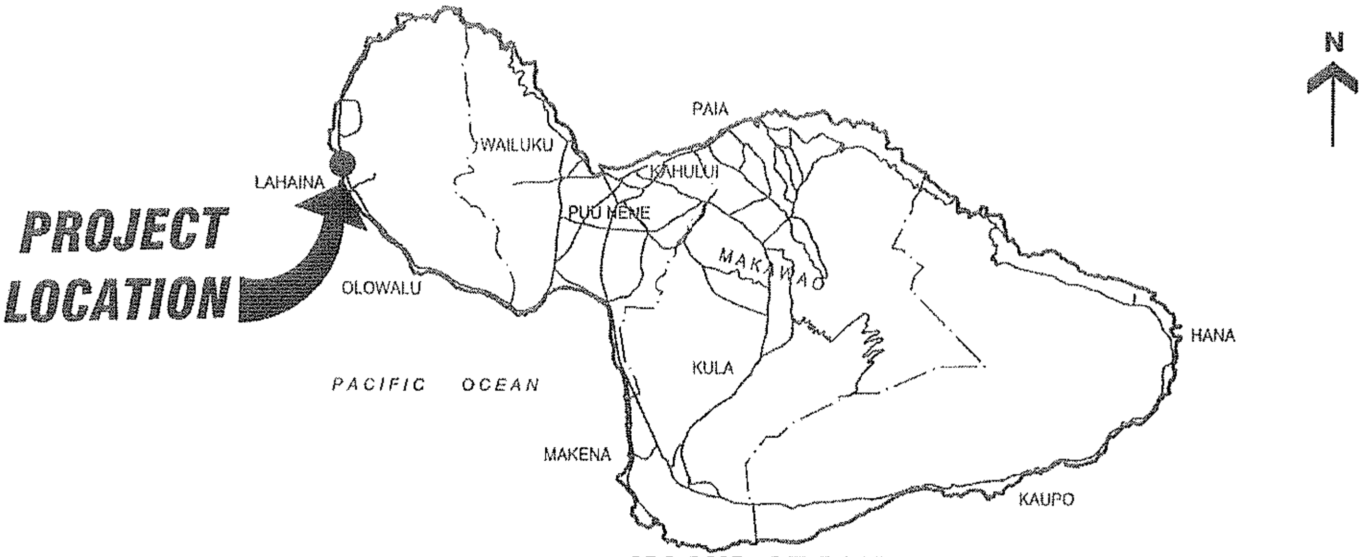
E. *Uniform Plumbing Code*, International Association of Plumbing and Mechanical Officials, 1997.

F. *Water System Standards*, Department of Water Supply, County of Hawai'i, Board of Water Supply, City and County of Honolulu, Department of Water, County of Kaua'i, and Department of Water Supply, County of Maui, State of Hawai'i, 2002.

G. *Title MC-15 Department of Public Works and Wate Management,* Subtitile 01 Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui effective November 12, 1995.

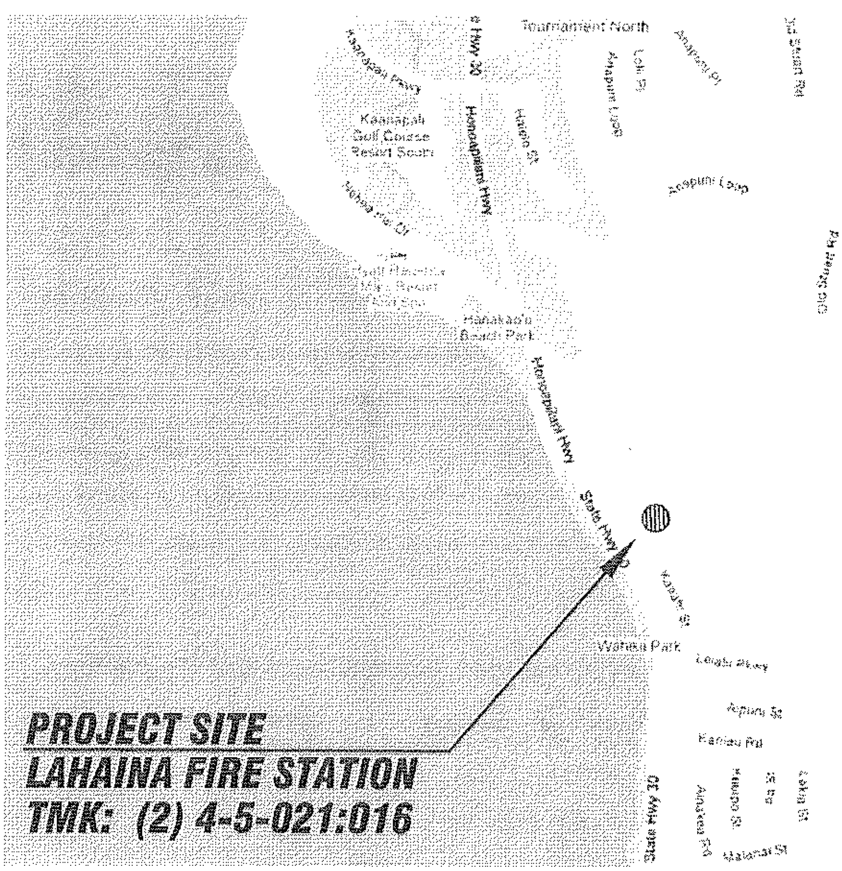
H. Hawaii State Climate Office, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, November 2010, http://www.soest.hawaii.edu/MET/Hsco.

I. Design Standard of the Department of Wastewater Management, Volume I, July 1993.



ISLAND OF MAUI VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

PRELIMINARY ENGINEERING REPORT

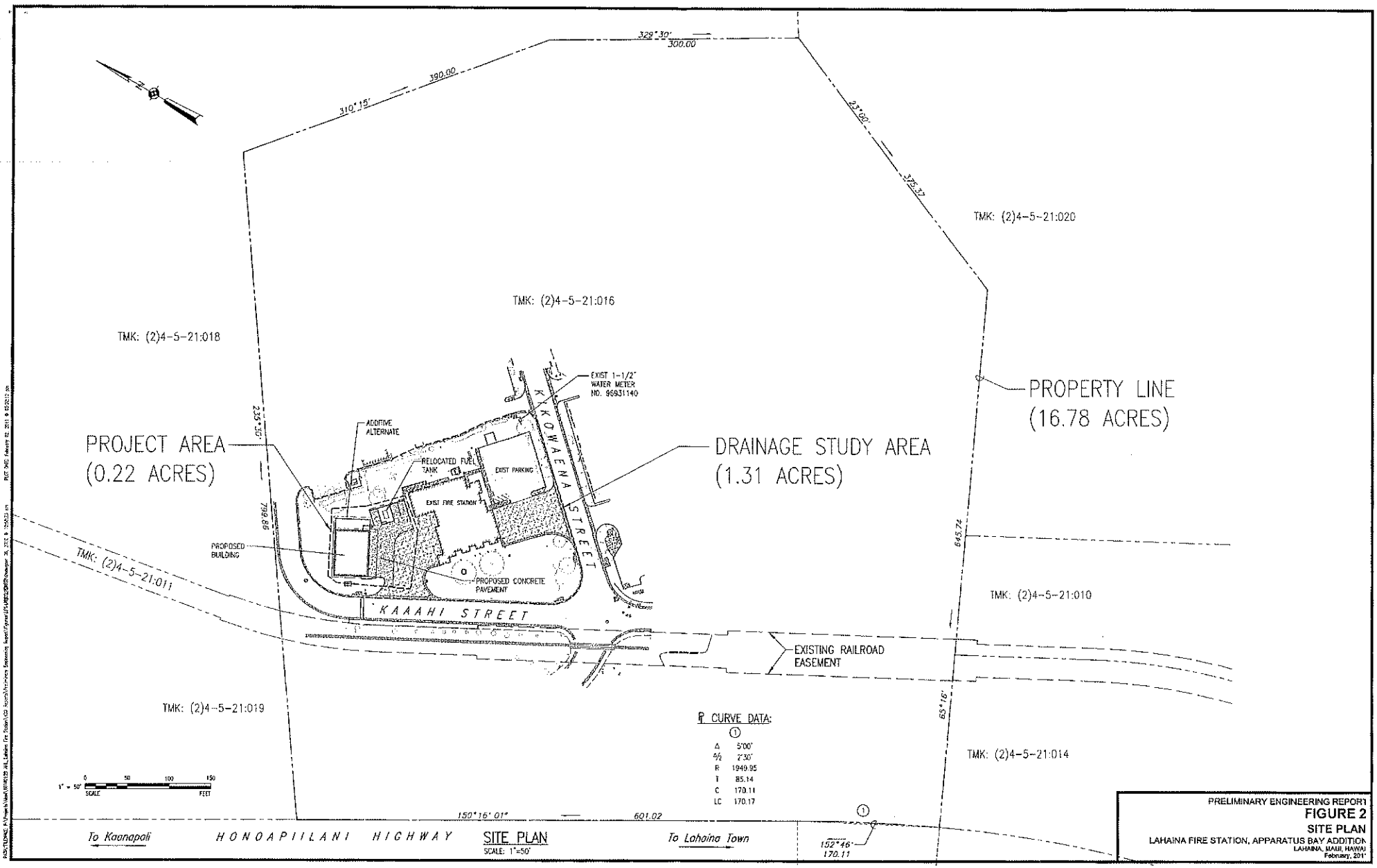
FIGURE 1

Vicinity and Location Maps

LAHAINA FIRE STATION, APPARATUS BAY ADDITION

LAHAINA, MAUI, HAWAII

July 2010

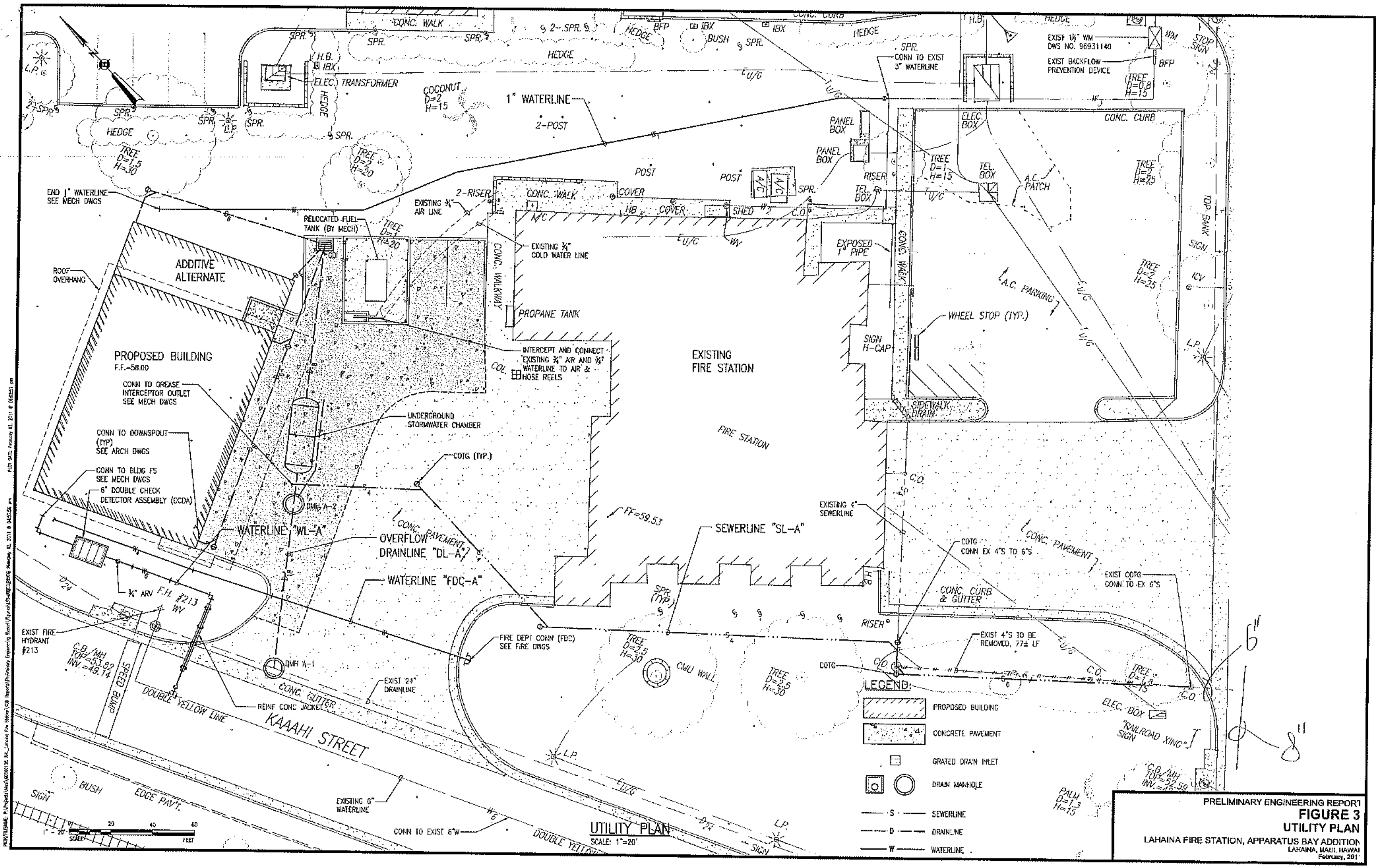


PRELIMINARY ENGINEERING REPORT

FIGURE 2

SITE PLAN

LAHAINA FIRE STATION, APPARATUS BAY ADDITION
LAHAINA, MAUI, HAWAII
February, 2011



PRELIMINARY ENGINEERING REPORT
FIGURE 3
UTILITY PLAN
LAHAINA FIRE STATION, APPARATUS BAY ADDITION
LAHAINA, MAUI, HAWAII
February, 201
UTILITY PLAN
SCALE: 1"=20'
LEGEND:
PROPOSED BUILDING
CONCRETE PAVEMENT
GRATED DRAIN INLET
DRAIN MANHOLE
SEWERLINE
DRAINLINE
WATERLINE
EXISTING FIRE STATION
PROPOSED BUILDING
F.F.=58.00
ADDITIVE ALTERNATE
KAAHI STREET
1" WATERLINE
WATERLINE "WL-A"
OVERFLOW DRAINLINE "DL-A"
WATERLINE "FDC-A"
SEWERLINE "SL-A"
UNDERGROUND STORMWATER CHAMBER
RELOCATED FUEL TANK (BY MECH)
PROPANE TANK
FIRE DEPT CONN (FDC) SEE FIRE DWGS
EXIST FIRE HYDRANT #213

APPENDIX C.

Archaeological Field Inspection

XAMANEK RESEARCHES, LLC
P.O. BOX 880131
PUKALANI, MAUI, HI 96788
Phone/Fax: 572-8900
Phone/Fax: 572-6118
E-mail: xamanekresearchesllc@gmail.com

State Historic Preservation Division Maui Office
Department of Land and Natural Resources Annex
Wailuku, Maui
Fax: 243-5838

Attn.: Morgan Davis, SHPD Maui Office **13 February 2011**

Subject: Letter report on a field inspection of the proposed Lahaina Fire Station Apparatus Bay Building project area, and mitigation recommendations, Wahikuli *Ahupua`a*, Lahaina District, Maui (TMK: [2] 4-5-021: Portion of 016)

Aloha Morgan,

I am writing you about scheduled improvements for the Lahaina Fire Station, Lahaina, Maui. The proposed project area consists of a 0.22 acre portion of the overall Lahaina Civic Center complex 16.782 acre parcel (TMK: [2] 4-5-021: Portion of 016). This project involves the construction of an annex, identified as the Lahaina Fire Station Apparatus Bay Addition (Figures 1-3). This 2,838 square foot structure will serve as an additional use space for the existing Fire Station. Munekiyo & Hiranga, Inc, project planner, is currently preparing an Environmental Assessment (EA) and a Special Management Area (SMA) application for the proposed project. Given that the current project area is located near the ocean in a previously disturbed portion of the Lahaina Civic Center complex, Xamanek Researches LLC carried out a field inspection, in order to evaluate the scope of work and the project area (see Figures 1-3).

The field inspection was carried out on 18 January 2011. During the course of this inspection, it became evident that the general Lahaina Civic Center parcel has been previously disturbed by development of the existing facility (see Photos 1-6). However, given the proximity to the coastline (see Photo 1) and previously identified sites, it is recommended that precautionary monitoring be conducted during project construction. An archaeological monitoring plan will be prepared and submitted for SHPD review and comment.

Please feel free to contact me @ 572-8900 or via email should you have any questions or need additional information regarding this memo.

Sincerely,

Erik M. Fredericksen

Erik M. Fredericksen

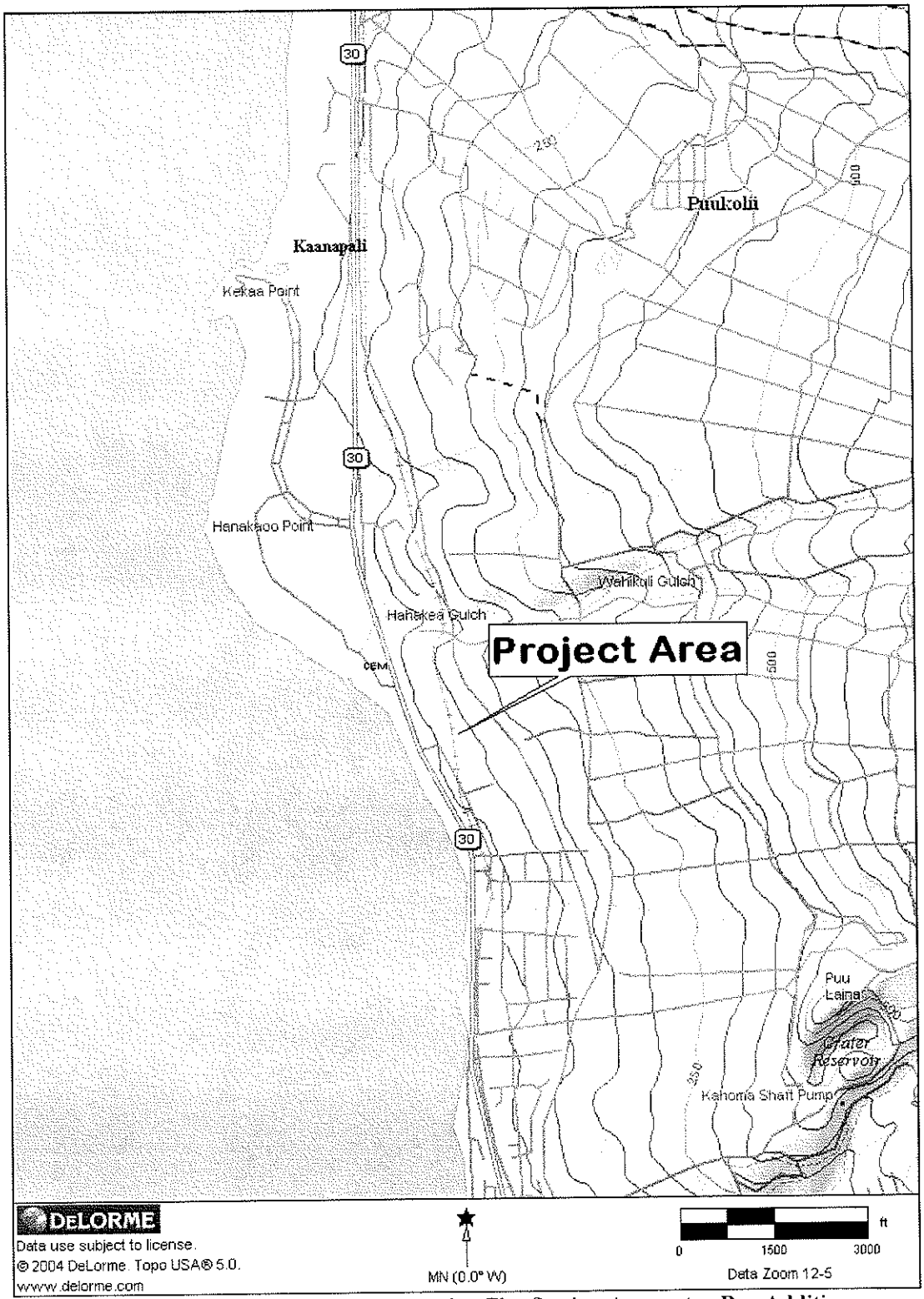


Figure 1: Location of the project area, Lahaina Fire Station Apparatus Bay Addition.

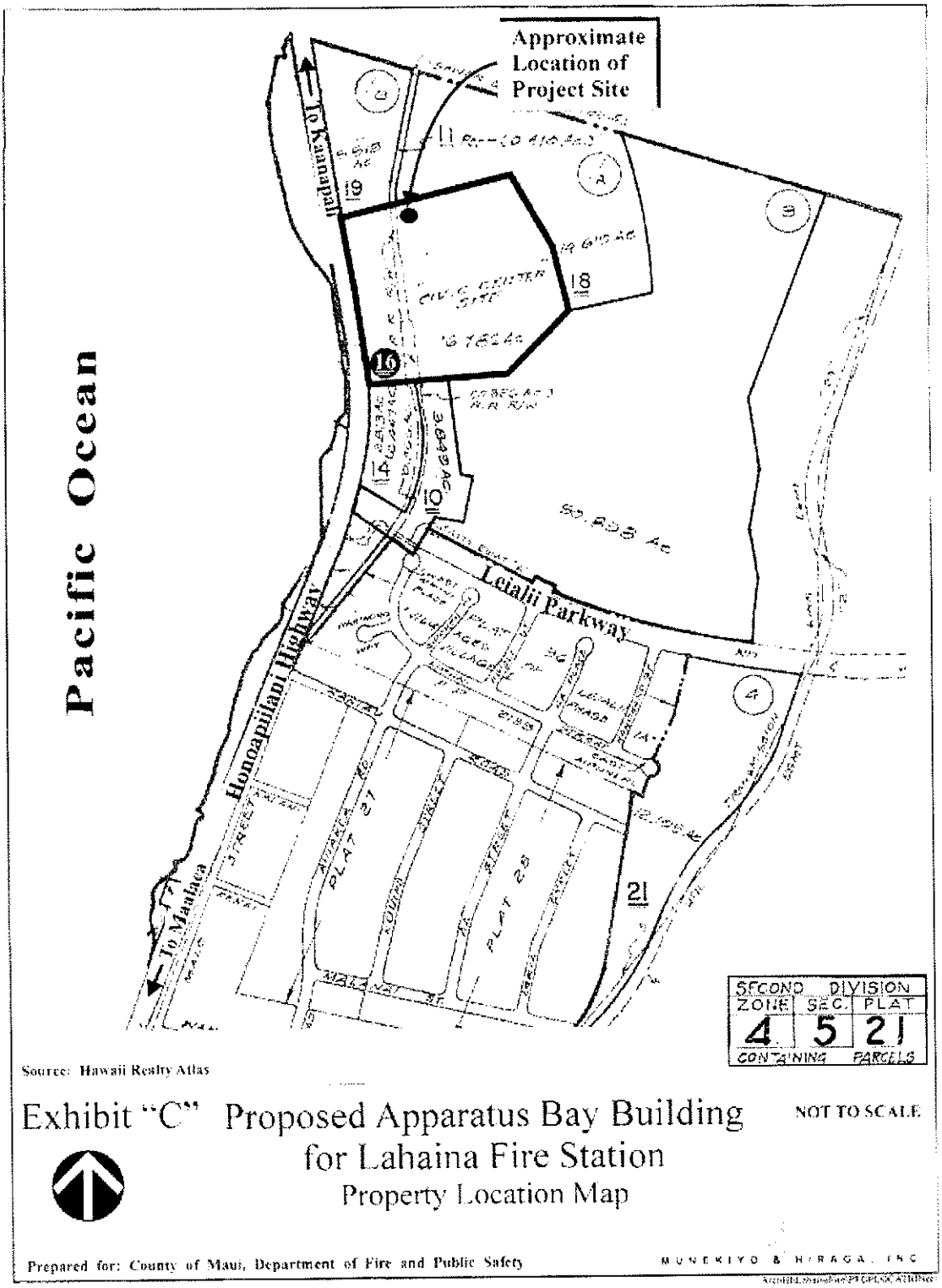


Figure 2: General location of the proposed Lahaina Fire Station Apparatus Building Bay Addition, Lahaina, Maui.

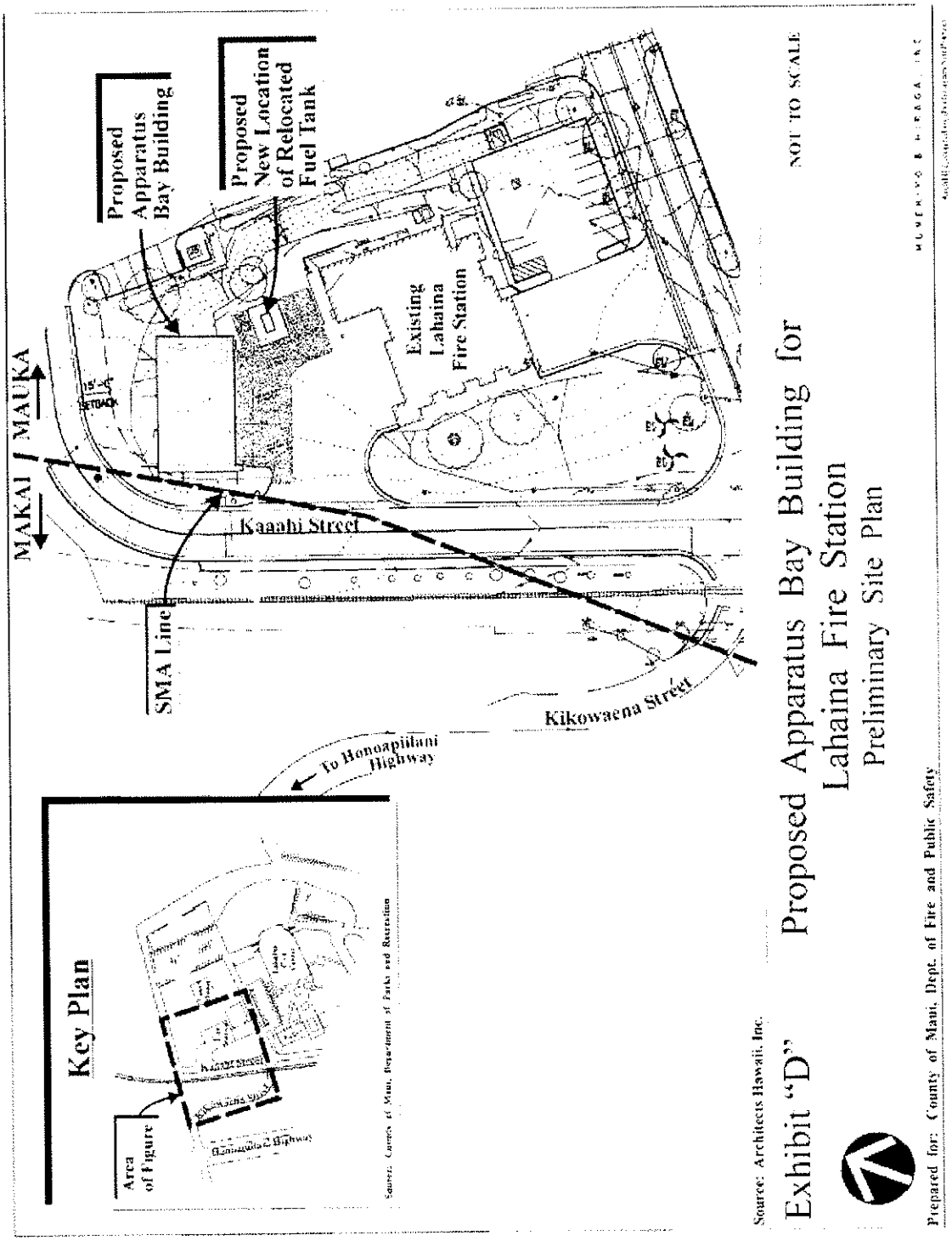


Figure 3: Plan view of the proposed Apparatus Bay Building location.

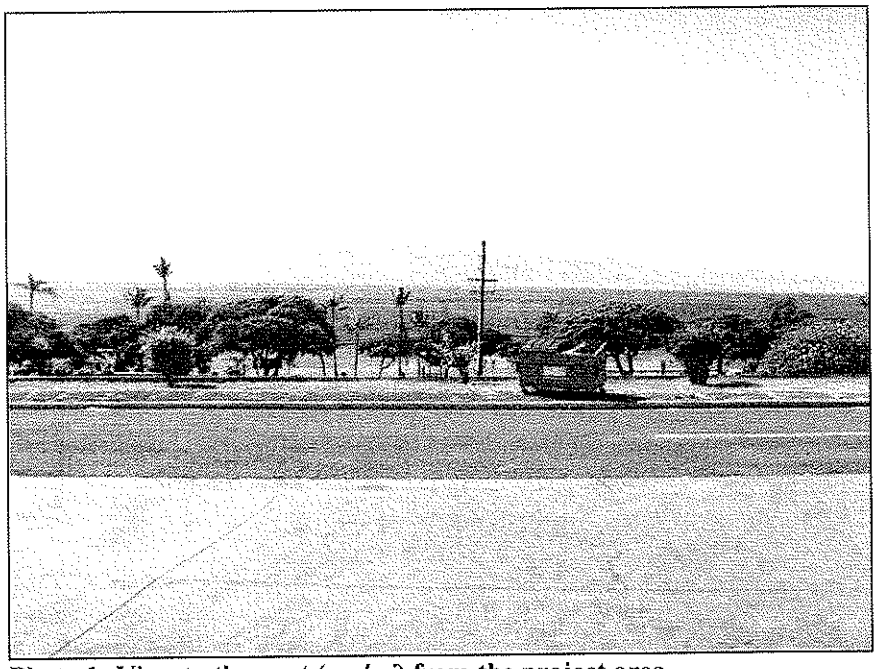


Photo 1: View to the west (*makai*) from the project area.

Photo 2: View to the east from the project area.

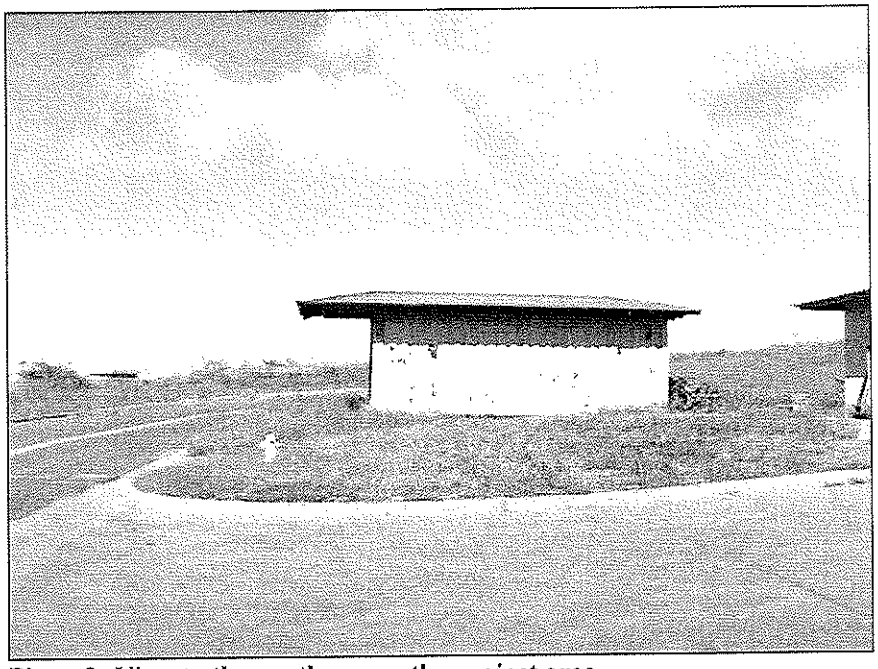


Photo 3: View to the north across the project area.

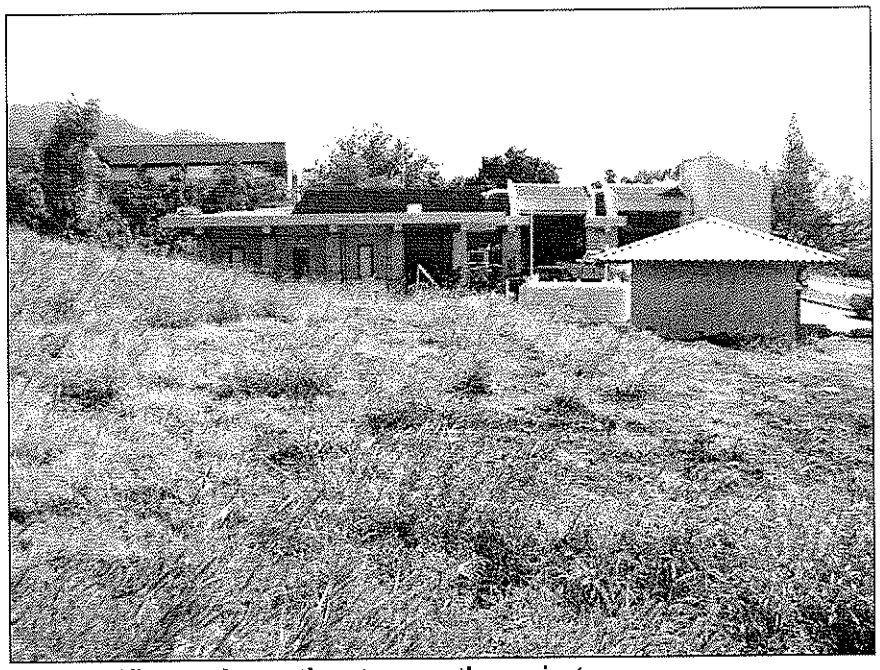


Photo 4: View to the southeast across the project area.

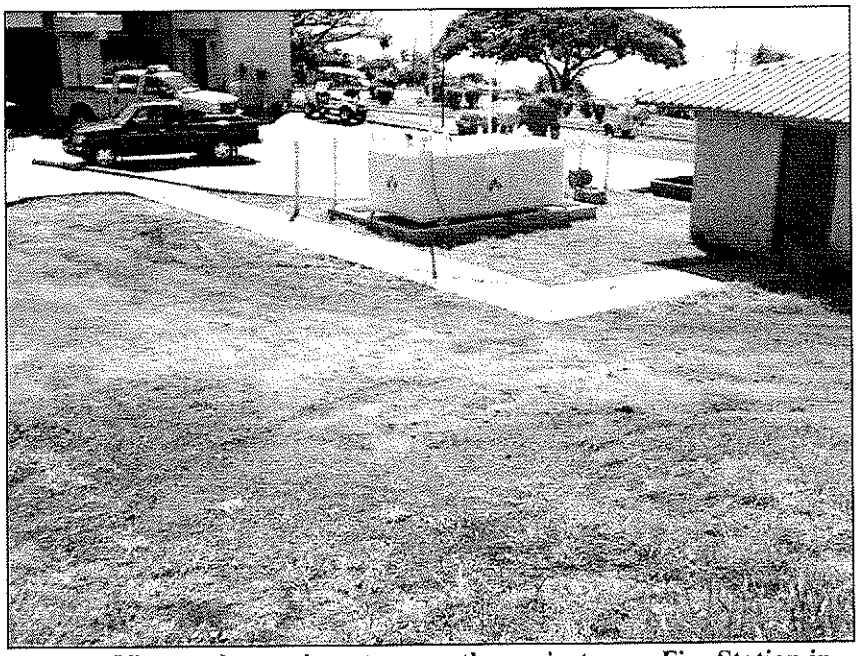


Photo 5: View to the southwest across the project area, Fire Station in background.

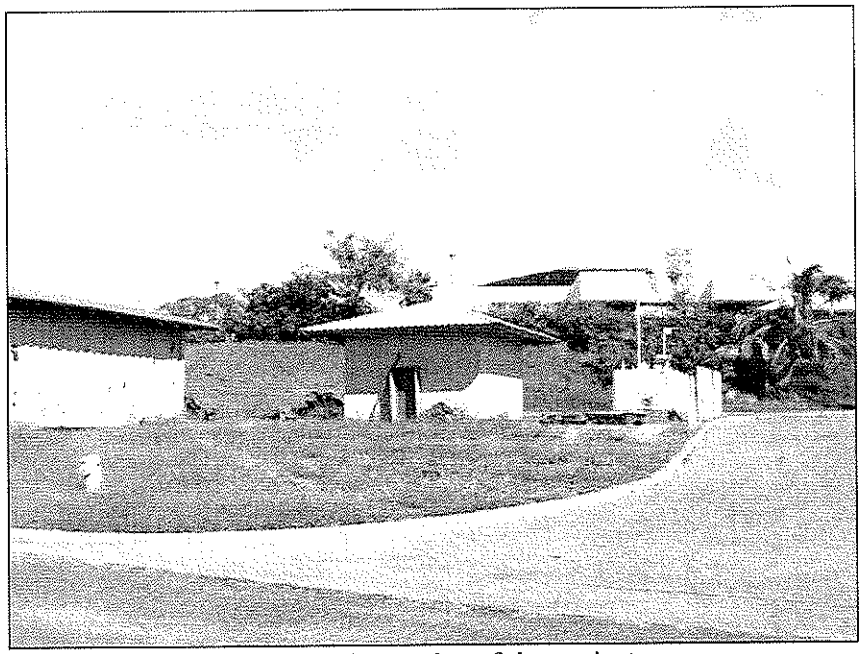


Photo 6: View to the NNW of a portion of the project area.

APPENDIX C-1.

Archaeological Monitoring Plan

An Archaeological Monitoring Plan for a c. 0.22-acre Portion of Land Located in Wahikuli *Ahupua'a*, Lahaina District, Island of Maui (TMK: [2] 4-5-021: Portion of 016)

Prepared at the direction of:

Ms. Karlynn Fukuda,
Munekiyo & Hiraga, Inc.
Wailuku, Maui

Prepared on behalf of:

County of Maui
Lahaina Fire Department

Prepared by:

Xamanek Researches, LLC
Pukalani, Maui

Erik M. Fredericksen

23 February 2011

INTRODUCTION

Xamanek Researches, LLC conducted an archaeological field inspection of a c. 0.22-acre portion of land in Wahikuli, Lahaina District, Maui, on 18 January 2011 (Figures 1, 2 and 3). The landowner is the County of Maui, and the proposed action would be undertaken on behalf of the County of Maui Lahaina Fire Department. The County proposes to construct an annex to the existing Fire Station. This structure is identified as the Lahaina Fire Station Apparatus Bay Building, and will comprise 2,838 square feet under roof. The proposed building site is located c. 200 m inland (east) from the shoreline and lies an estimated 35 ft. AMSL (Photo 1).

The field inspection report was prepared at the request of Ms. Karlynn Fukuda, Munekiyo & Hiraga, Inc., Wailuku, Maui (Fredericksen, 2011). Previously identified sites have been located on the adjacent Ka`anapali 2020 project area during a 2002 inventory survey that was carried out by Xamanek Researches. Given the presence of sites in the general area, an archaeological field inspection was chosen as an evaluation step, because this area has previously been impacted by sugarcane cultivation and, more recently, by development of the Lahaina Civic Center complex. The following plan has been prepared in order to address the SHPD concurrence that precautionary archaeological monitoring be conducted in this portion of land in Lahaina District.

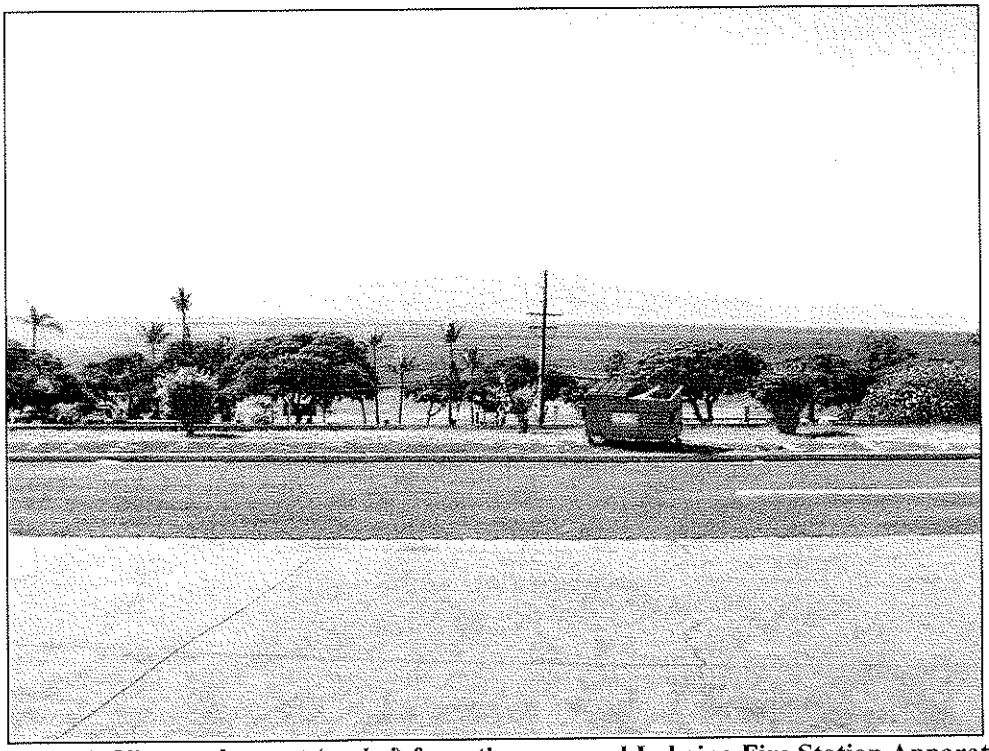


Photo 1: View to the west (*makai*) from the proposed Lahaina Fire Station Apparatus Bay Building project area.

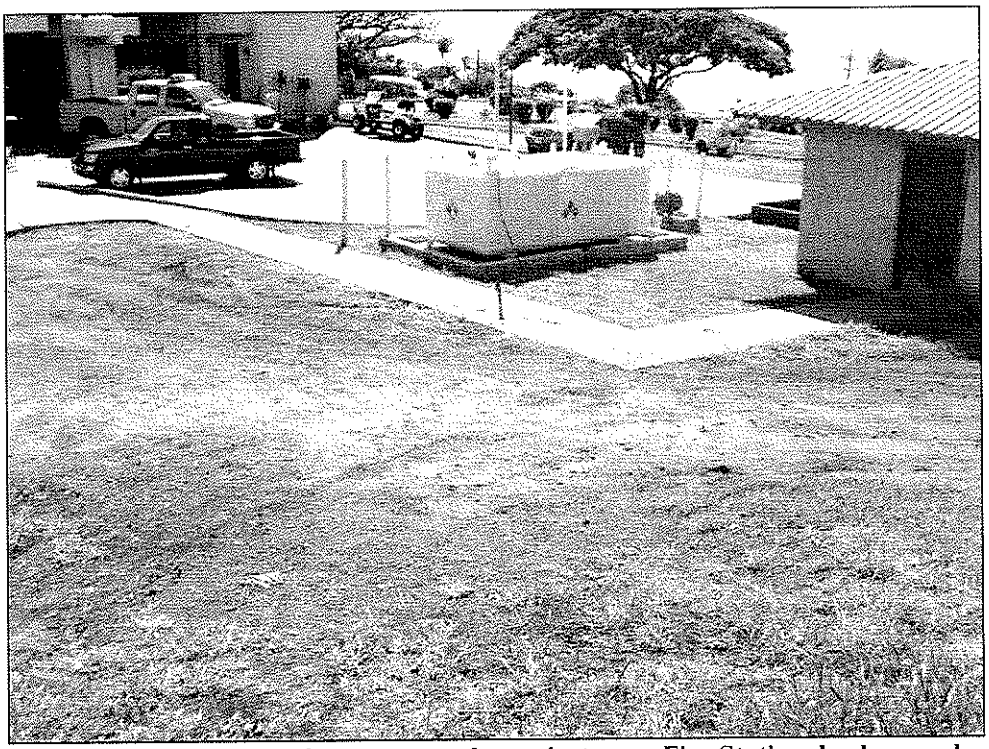


Photo 2: View to the southwest across the project area, Fire Station, background.

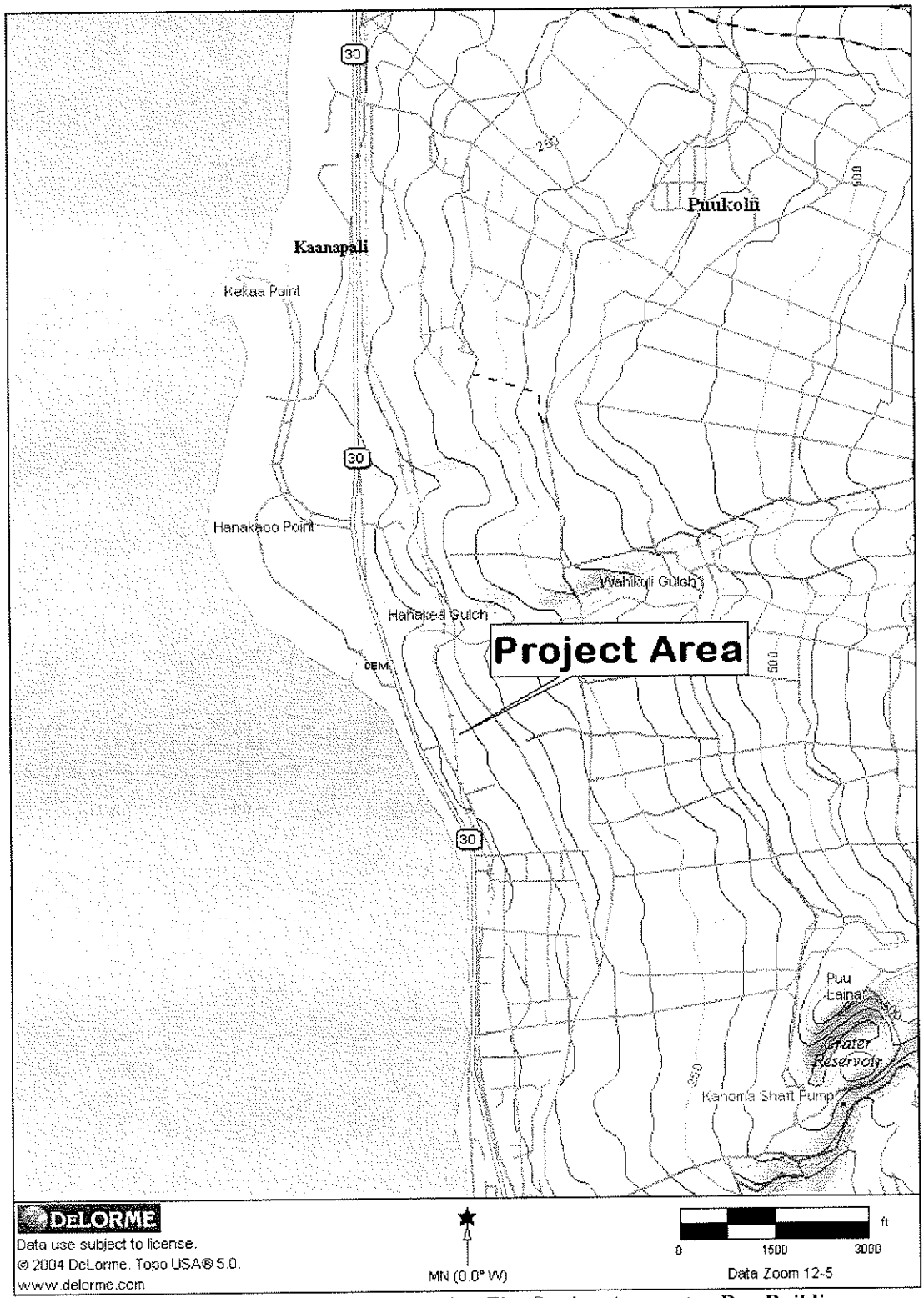


Figure 1: Location of the project area, Lahaina Fire Station Apparatus Bay Building project.

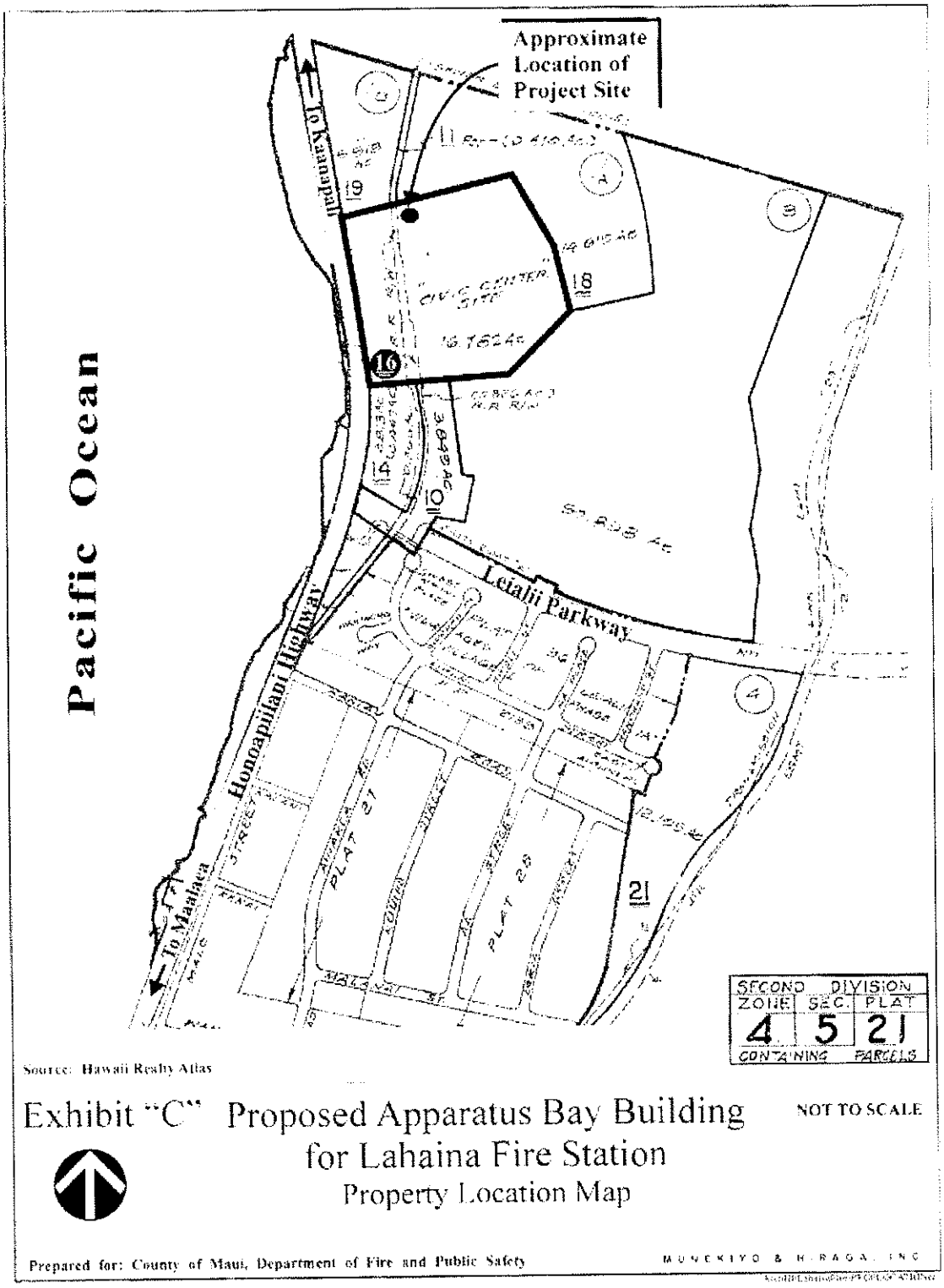


Figure 2: General location of the proposed Lahaina Fire Station Apparatus Building Bay Building, Lahaina, Maui.

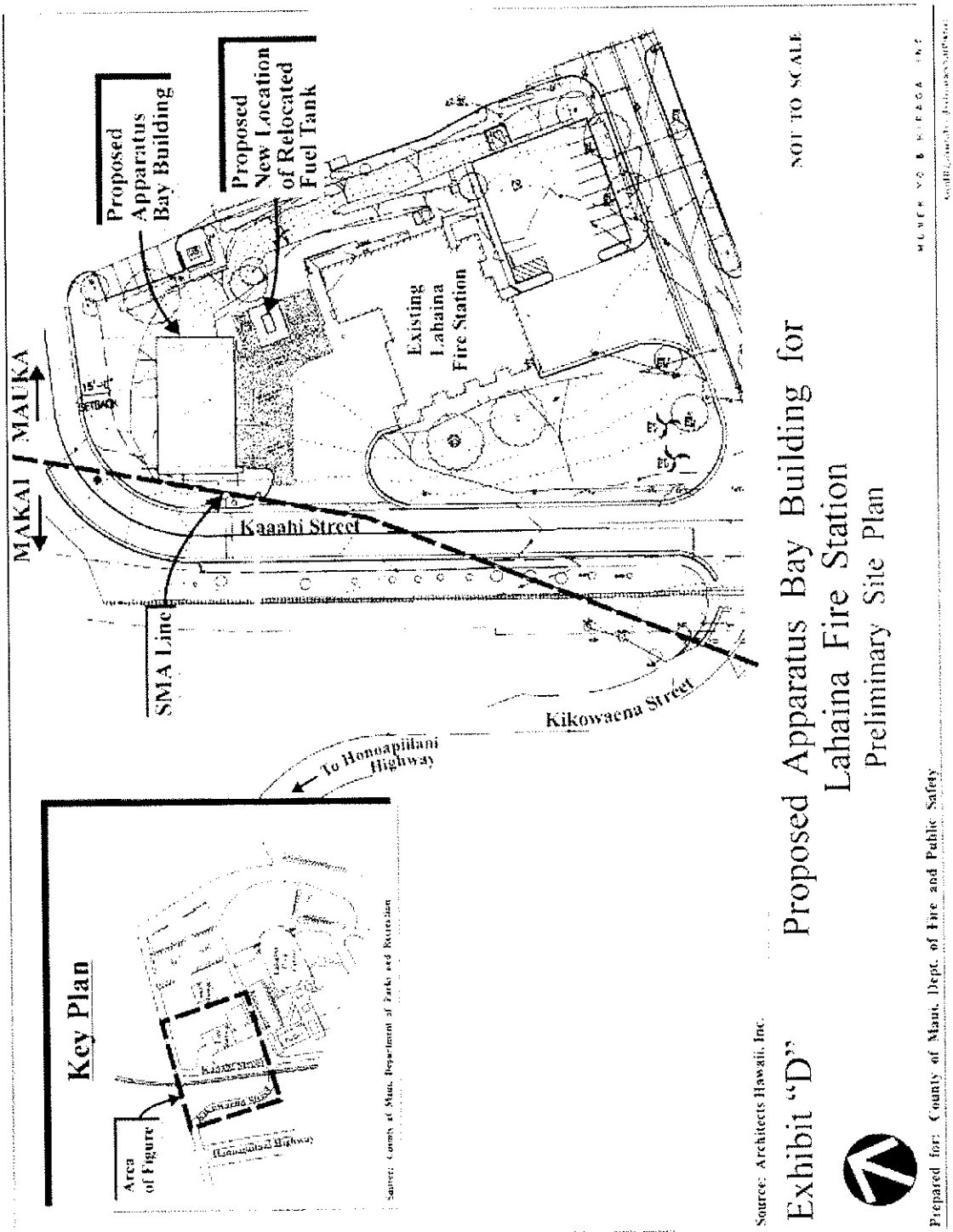


Figure 3: Plan view of the proposed Apparatus Bay Building location, Lahaina Fire Station.

BACKGROUND – KA`ANAPLI 2020 PROJECT AREA

Xamanek Researches previously carried out an inventory survey of lands abutting the County of Maui parcel. The results of this previous survey are summarized below and provided for background information. The current project area is bordered on the north by the larger planned development that is known as Ka`anapali 2020. The overall Ka`anapali 2020 development area consists of some 4,325 acres of land that is located in Hanakao`o and Honokowai *ahupua`a*, east (*mauka*) of the Ka`anapali area. The proposed development was initiated with the dual objectives of developing a plan with community-wide support and benefits, and providing the applicant with an economically viable land-planning program. A community-based effort had been initiated in 1999 to try to come up with a balanced planning process for this large tract of West Maui land. A subsequent conference entitled Ka`anapali 2020: Making It *Pono* had been arranged in late November 1999.[1] This community-based planning conference was the nexus of the Ka`anapali 2020 project, a large-scale balanced development in West Maui.

Of the total 4,325 acres of land in the overall Ka`anapali 2020 project, some 1,187 acres were proposed to be left in the Conservation District (currently managed by the Nature Conservancy-Hawai`i), while the remaining 3,138 acres were designated for various uses (Munekiyo & Hiraga, Inc., August 2001). The area known as Middle and Lower Honokowai consisted of c. 1,970 acres of land, which was slated for various levels of development with about 55% designated as open space.[2] The project area known as Honokowai *Mauka* (c. 775 acres) is proposed to consist primarily of open space (90%), with some housing, while Honokowai Gulch (c. 300 acres) will be left as open space. The Keka`a or North Beach area (c. 96 acres) was to contain resort development with c. 30% open space.[3]

Xamanek Researches[4] carried out an archaeological inventory survey of a c. 2,700 acre portion of the Ka`anapali 2020 project area, beginning in the mid-summer of 2001 and concluding in the late summer of 2002. As with many other large tracts in this part

[1] This 1999 conference was composed of 8 community stakeholder groups, including AMFAC, Business and Commerce, Community Organizations, Cultural Heritage, Environment, Government, Social Services and Unions (Munekiyo & Hiraga, Inc., August 2001).

[2] The Pioneer Farms subdivision lies in this portion of the Ka`anapali 2020 project area, and consists of the entire portion of land formerly known as Lot 4.

[3] North Beach/Keka`a, covered under earlier archaeological studies and agreements, is presently under construction. It was not included in our original scope of work for the overall Ka`anapali 2020 project. This area has since been developed.

[4] Xamanek Researches was converted to Xamanek Researches, LLC; a Hawai`i based Limited Liability Company in February of 2005.

of West Maui, much of the land outside of the drainage areas has been in commercial (i.e. sugarcane) agricultural production for several decades. More recently, coffee and seed corn cultivation have occurred.

Previously Recorded Sites within the Ka`anapali 2020 project area

A total of 81 previously unidentified sites were located during the archaeological inventory survey conducted by Xamanek Researches in 2001/2002 (Fredericksen and Fredericksen, 2003). These sites were assigned SIHP No. 50-50-03-5241 through 5321. In addition, a map was prepared for the Puukolii Cemetery (Site 2893), which had been issued a number during a previous survey, but not recorded. The site types identified during this inventory survey include single and multiple component dry land agricultural sites, and one large, wet valley agricultural site in Honokowai Gulch. Other identified site types included temporary and more permanent habitation areas, several petroglyph panel sites, possible ceremonial areas and shrines, possible burial features, and plantation era sites.

A total of 49 sites (i.e. Sites 5242, 5245-5249, 5253-5259, 5261-5267, 5269-5271, 5273, 5274, 5276, 5282-5284, 5286, 5287, 5289, 5291-5293, 5295, 5296, 5300-5303, 5305, 5308-5310, 5313, and 5316-5318) were considered significant for their information content only under Criterion "d" of the Federal and State historic preservation guidelines. These sites include temporary habitation rock shelters, smaller dry land agricultural terraces and complexes, and plantation era sites. Four of these sites were tested and charcoal samples were submitted for radiometric analysis. One dry land agricultural Site 5246 yielded a radiometric date range that extends from late precontact through modern times. Three of the radiocarbon samples came from excavations at rock shelter overhangs—Sites 5255, 5295, and 5313. Mid to late precontact date ranges were returned for Site 5295, while Sites 5255 and 5313 yielded late precontact through post-contact ranges. Material culture remains from excavations at Site 5313 suggest that usage extended from late precontact through post-contact times.

All of the above sites are still considered significant for their information content (Criterion "d"), with the possible exception of the surface scatter of the former Puukolii Village (Site 5309). While some of the other sites could potentially be considered no longer significant in other situations, they represent a remnant of the cultural landscape that lies within the Ka`anapali 2020 project area and should be preserved.

Thirty-three sites remain significant under multiple significance criteria. Criteria "a" and "d" sites include Sites 5280, 5281, 5288, 5297, 5304, 5308 and 5311, all of which appear to have plantation era components. Eleven sites qualify for significance under Criterion "e" because of their traditional importance to the Native Hawaiian people. Sites that have at least 1 component that is thought to represent a possible shrine or have a ceremonial function include Sites 5241 (Feature C), 5250, 5275, 5277, 5278 and 5314. The Site 5277 platform represents the largest probable ceremonial feature that was identified in the project area. Sites thought to contain possible burial features include Sites 5243, 5275, 5278, 5294 (Feature B), 5320 and 5321. Additional

sites/features that qualify for significance under Criterion "e" include the petroglyph panels and images identified in the project area. These include Sites 5243, 5244, 5260 (Feature A), 5268 (Feature D), 5272, 5279 (Features A and B), 5285, 5298, 5306, 5307 and 5315 (Feature A). The bulk of these are composed of petroglyph panels at or near rock overhangs, while Sites 5307 and 5308 are located on boulders. Site 5319 consists of an inscription of the letters E and K, and is tentatively included in the Criterion "e" sites because of its location in Honokowai Gulch. Three sites consist of trail remnants (Sites 5251, 5252 and 5299) and a portion of Site 5312 (Feature A-69) in Honokowai Gulch contains a trail remnant—all of these are considered to be significant under Criterion "e". All of these are thought to represent remnants of Hawaiian access trails that were likely used in post-contact times as well.

Site 5312 in Honokowai Gulch represents an excellent example of a wet valley agricultural complex also qualifies for significance under Criterion "c" of Federal and State historic preservation guidelines. While portions of this extensive site have been impacted by post-contact activities, the site remains largely intact and is in generally good condition overall.

No further work beyond the inventory level was recommended for the bulk of the sites at the time, because they are scheduled for preservation. However, additional inventory level research will need to be undertaken in Honokowai Gulch, because much of this area has not been studied at the inventory survey level. Because of the large size of the project area, and the active agricultural use of substantial portions of the land at the time of our inventory survey, it was recommended that archaeological monitoring be considered for areas slated for future development.[5] Finally, in-place preservation was recommended for all sites within the overall Ka`anapali 2020 project area.

ARCHAEOLOGICAL MONITORING PLAN

Scope of monitoring

The scope of this monitoring plan includes having an archaeological monitor present during all subsurface earthmoving activities within the project area (Figures 1-3). Actual on-site time and specific actions to be followed in the event of inadvertent discoveries will be discussed and agreed upon by the general contractor for the project

[5] The State Historic Preservation Division will review proposed development actions and determine the scope of work that is necessary for a given project. Per previous discussions with Dr. Melissa Kirkendall, SHPD Maui staff archaeologist and Ms. Jenny Pickett, Maui assistant staff archaeologist, field inspections have been used as a "first step" in the evaluation process.

and the archaeological consultant during a pre-construction meeting/telephone conference held for this purpose. Additional meetings may be called, if either the monitoring archaeologist or contractor believes that other relevant information should be disseminated. The SHPD will be notified at the onset and at the conclusion of the monitoring program.

Monitoring methodology

Given the location of the project area, there is a possibility that significant material culture remains will be discovered during earthmoving activities in this part of Hanakao`o *ahupua`a*. Possible site types could include precontact and/or post-contact agricultural and/or habitation site remnants. In addition, human burials and/or human skeletal remains could possibly also be located in the general area. Numbers of sites have been located during earlier work associated with the adjacent Ka`anapali 2020 project area. In addition, other site remnants have been located in the general vicinity, including a probable precontact Native Hawaiian burial in the nearby Hanakao`o Beach Park parcel to the west.

Close cooperation between the monitoring archaeologist and construction personnel is important for a successful monitoring program. The monitoring program will follow the 12 conditions listed below:

1) The contractor shall be responsible for ensuring that the archaeological consultant is aware of all pertinent construction schedules and that the monitor is present for <u>all</u> subsurface excavation activities on this near coastal parcel.

2) Both the archaeological consultant and the contractor are responsible for ensuring that on-site work is halted in an area of significant findings and to protect any such find from any further damage (i.e., construction fencing, protective covering, etc.). The State Historic Preservation Division will recommend appropriate mitigation actions. The SHPD Burial Sites Program, the SHPD Maui office, and the Maui/Lana`i Islands Burial Council (MLIBC) will be consulted in the event that human remains are found. (Change work order)

3) In the event of the discovery of human remains, work shall cease in the immediate find area. *In situ* human remains will be left in place and any previously disturbed human remains will only be removed with written consent from SHPD. If at all possible, previsions for secure on-site storage will be made. The monitoring archaeologist will be responsible for notifying the SHPD Maui office and the Historic Preservation Division Burial Sites Program, which, in consultation with the Maui/Lana`i Islands Burial Council, will determine the appropriate mitigation measures. This notification will include accurate information regarding the context and composition of the find. (Change work order)

4) The project archaeological consultant will work in compliance with Hawai`i Revised Statutes Chapter 6E (procedures Relating to Inadvertent Discoveries).

5) The monitoring archaeologist will have the authority to closedown construction activities in areas where potentially significant discoveries have been made until they have been properly evaluated. Normally, construction activities may continue in unaffected portions of the project area. (Change work order)

6) Field procedures to be followed for documentation of discovered cultural features or human skeletal remains: a) standard field methods including recordation of profiles showing stratigraphy, cultural layers, etc.; b) mapping and photographing of finds other than human remains; c) and excavation of cultural materials and/or exposed features.

7) The SHPD Maui archaeologist shall be notified and consulted with regarding treatment of identified features such as cultural layers, artifact or midden concentrations, structural remains, etc., considered to be of significance under S13-279-2 (definitions).

8) The contractor should take into account the necessity for machine excavation at a speed slow enough to allow for reasonable visual inspection of the work. The monitoring archaeologist must make a "best effort" to search for significant material culture remains (i.e. artifacts, features, midden, skeletal remains, etc.). Machine excavation speed will need to be slowed in an area where significant material culture remains have been identified. (Change work order).

9) Significant archaeological discoveries, if they occur, shall be protected and identified by construction "caution" tape, fencing, or other reasonable means, until the SHPD Maui office and the archaeological consultant decide appropriate mitigation actions. All recovered material culture remains—with the possible exception of charcoal samples for radiometric analysis—will remain on Maui. Standard laboratory methods shall be utilized by Xamanek Researches, LLC in the event that cultural materials are recovered during monitoring and/or mitigation work. Cultural materials that are located during this project will be curated by the project archaeological consultant (change work order).

10) One monitor in most instances will carry out the necessary fieldwork. Tasks will include observation of grubbing and earth-moving activities. However, the SHPD and the MLIBC require that one archaeological monitor be assigned to each piece of major earth-moving equipment in sand dune areas or other culturally sensitive locations. (Change work order if more than one piece of machinery is to be utilized).

11) In the event of night work, the general contractor shall supply adequate lighting for the onsite monitor.

12) Chapter 6E-11 (a) specifies the following "It shall be unlawful for any person or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located on the private lands of any owner thereof without the owner's written permission being first obtained. It shall be unlawful for any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property located upon lands owned or controlled by the State or any of its political subdivisions, except as permitted by the department."

Field methods utilized in the monitoring program will include photographic recording (where appropriate), artifact excavation (recovery and recording), profile documentation of cultural layers and stratigraphy, excavation and recording of exposed features, and mapping of all pertinent features on an appropriate site map. A daily log (field notes) of activities and findings will also be kept. The gathered information will be utilized in the preparation of the monitoring report to be submitted to the SHPD. In the event that no significant resources are located, one or more representative profiles of project area stratigraphy will be included in the report.

Standard laboratory procedures will be followed in the event that significant material culture remains are recovered during the monitoring program. Analysis and recordation of cultural materials will be carried out on Maui. No material culture remains other than radiocarbon samples will be transported off-island. The archaeological consultant will curate any cultural materials until analysis is completed and then turned over to the appropriate parties. Long-term curation arrangements of such materials will be approved by the SHPD. Human remains recovered from the monitoring project will be reinterred per the direction of the MLIBC.

In the event human skeletal materials are inadvertently discovered, notification of SHPD, the SHPD Maui office and the Maui/Lana`i Islands Burial Council shall be made, and appropriate mitigation determined (Note: photographs of human skeletal remains will not be taken).

A supervisory archaeologist may visit the monitoring site periodically or as often as is necessitated by the nature of the construction activities and archaeological findings. If significant discoveries are made, appropriate mitigation measures will be discussed with the SHPD Maui office.

When fieldwork for this archaeological monitoring project is completed, a draft monitoring report shall be prepared. This draft report will be submitted to the State Historic Preservation Division within 180 days of the completion of fieldwork, for comment and approval. Approved changes and corrections will result in the final monitoring report for the Lahaina Fire Station Apparatus Bay Building project (TMK: [2] 4-5-021: Portion of 016).

APPENDIX D.

Cultural Impact Assessment Report

SCS Project Number 943-CIA-1

A CULTURAL IMPACT ASSESSMENT OF A PORTION OF THE LAHAINA CIVIC CENTER PARCEL, WAHIKULI AHUPUA`A, LAHAINA DISTRICT, MAUI ISLAND, HAWAI`I [TMK 4-5-021:010]

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May 2008

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INTRODUCTION

Scientific Consultant Services (SCS), Inc. has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment of a portion of the Lahaina Civic Center parcel, Wahikuli Ahupua`a, Lahaina District, Maui Island, Hawai`i [TMK: 4-5-021:010] (Figures 1, 2, and 3). According to exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposed plans for this lot portion includes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua`a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778" (2000). In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights...may extend beyond the *ahupua`a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

> ...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights...[H.B. No. 2895].

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, "to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other

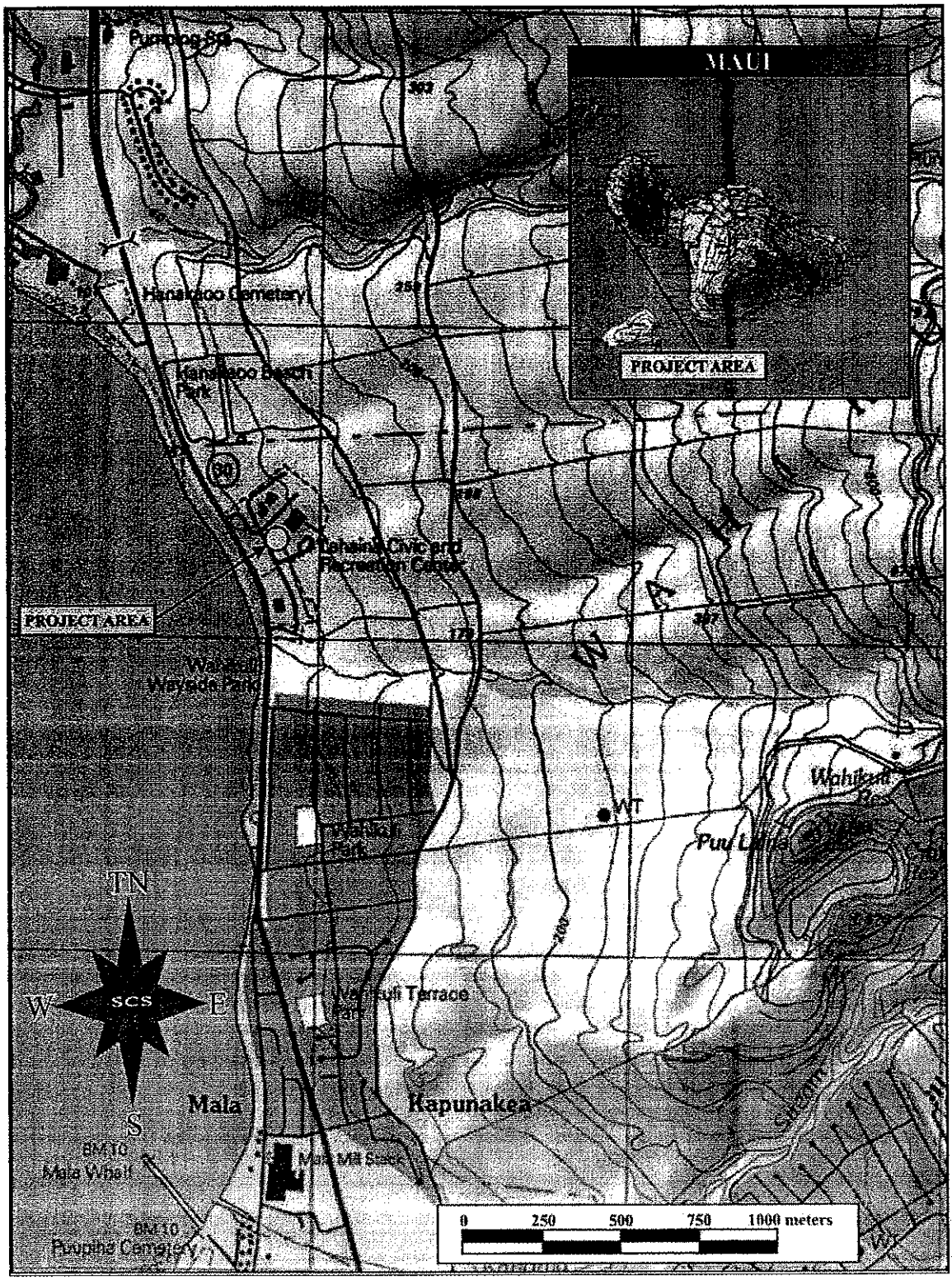

Figure 1: USGS Quadrangle Map Showing Project Area Location.

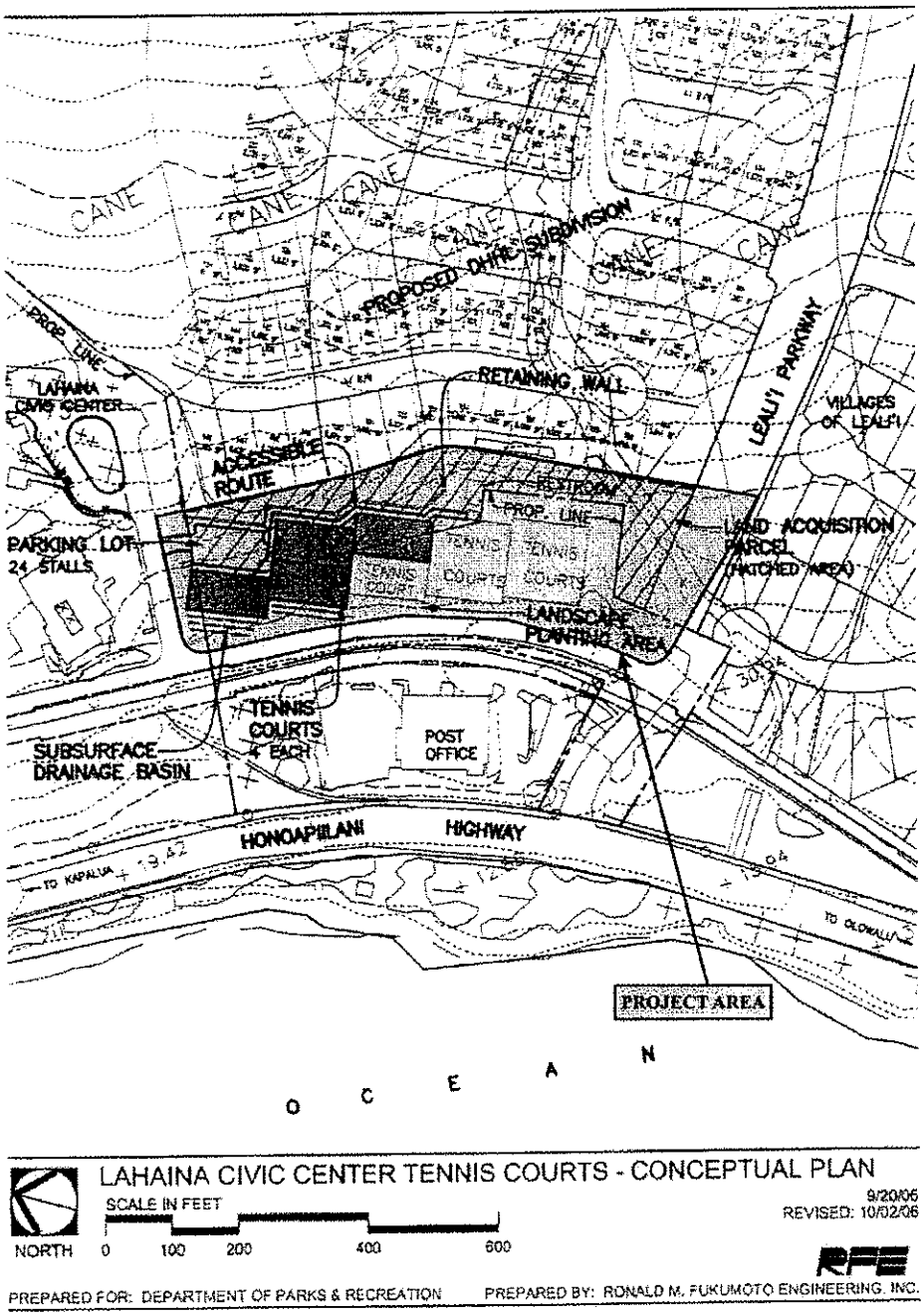

Figure 2: Plan View Map of Project Area (Courtesy of Ronald M. Fukumoto Engineering, Inc.)

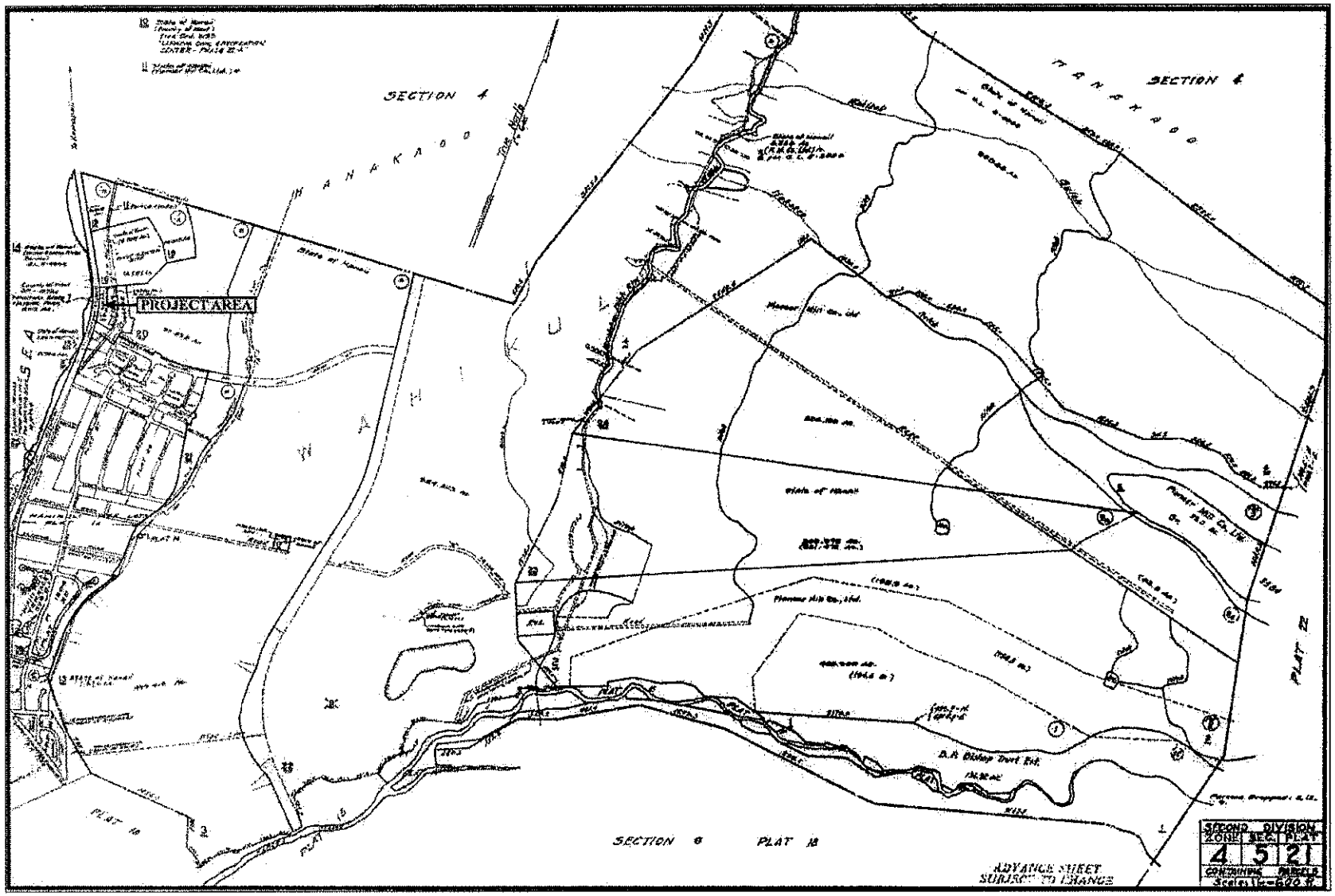

Figure 3: Tax Map Key [TMK] Showing Project Area.

ethnic groups, and it also amends the definition of 'significant effect' to be re-defined as "the sum of effects on the quality of the environment including actions that are...contrary to the State's environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000). Thus, not only are properties evaluated for impact to Native Hawaiians, but also for other ethnic groups as well.

Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua`a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural which support such cultural beliefs.

This Cultural Impact Assessment involves evaluating the probability of impacts on identified cultural resources, including values, rights, beliefs, objects, records, properties, and stories occurring within the project area and its vicinity (H.B. 2895, Act 50, 2000).

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the "Cultural Impact Assessment Methodology", the OEQC state:

> ...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories...[1997].

This report contains archival and documentary research, as well as communication with organizations having knowledge of, or believed to have knowledge of, the project area, its cultural resources, and its practices and beliefs. This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). The assessment concerning cultural impacts should address, but not be limited to, the following matters:

(1) a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints of limitations which might have affected the quality of the information obtained;

(2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;

(3) ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;

(4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;

(5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;

(6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;

(7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;

(8) an explanation of confidential information that has been withheld from public disclosure in the assessment;

(9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;

(10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place, and;

(11) the inclusion of bibliography of references, and attached records of interviews which were allowed to be disclosed.

Based on the inclusion of the above information, assessments of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws and guidelines. Individuals and/or groups who have knowledge of traditional practices and beliefs associated with a project area or who know of historical properties within a project area are sought for consultation. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs, historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the information available for this study. When telephone interviews occur, a summary of the information is often sent for correction and approval, or dictated by the informant and then incorporated into the document. Key topics discussed with the interviewees vary from project to

project, but usually include: personal association to the *ahupua`a*, land use in the project's vicinity; knowledge of traditional trails, gathering areas, water sources, religious sites; place names and their meanings; stories that were handed down concerning special places or events in the vicinity of the project area; evidence of previous cultural activities identified in the project area.

In this case, letters, briefly outlining the development plans along with maps of the project area, were sent to organizations whose jurisdiction includes knowledge of the area with an invitation for consultation. Consultation was sought from the Maui Office of Hawaiian Affairs, Community Resource Coordinator, Maui (Thelma Shimaoka); the Office of Hawaiian Affairs, O`ahu (Kai Markell); the Cultural Resources Commission of Planning Maui Planning Department; Nā Kupuna O Maui (Patty Nishiyama); Hinano Rodrigues, the Cultural Historian with the State Historic Preservation Division, Holuamoku Ralar of the Hawaiian Civic Club, Lahaina Chapter; Kamika Kepa`a, a member of the Native Hawaiian Historic Preservation Council; and Ke`eaumoku Kapu with Kuleana Ku`ikāhi. If cultural resources are identified based on the information received from these organizations and additional informants, an assessment of the potential effects on the identified cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

PROJECT AREA AND VICINITY

The project area is located on a portion of State-owned land which will be acquired by the County adjacent to the Lahaina Civic Center. The Maui Planning Department has determined that the project area is within the Special Management Area (see Figures 2 and 3).

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. Pu`u Kukui, forming the west end of the island (1,215m above mean sea level), is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The deep valleys of West Maui and their associated coastal regions have been witness to many battles in ancient times and were coveted productive landscapes.

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha`ōhia, during the time of the *ali`i* Kaka`alaneo (Beckwith 1940:383; Fornander places Kaka`alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919-20, Vol. 6:248]). Land was considered the property of the king or *ali`i `ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i `ai moku* ensured rights and responsibilities pertaining to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`ā ina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*) which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili `āina* or *`ili* were smaller land divisions next to importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (*ibid*:33; Lucas 1995:40). The *mo`o `āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa `āina* residing in a *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the *ahupua`a* of Hanakaō`ō, which translated means literally "the digging stick bay" and perhaps refers to the gardens known in the area (Pukui *et al.*:74).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinaruma*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui

was likely to have begun early in what is known as the Expansion Period (AD 1200-1400, Kirch 1985).

WAHI PANA (LEGENDARY PLACES)

Scattered amongst the agricultural and habitation sites were other places of cultural significance to the *kama`āina* of the district. At least eight *heiau* were recorded in the vicinity of the ancient village of Lāhainā (old pronunciation of Lahaina), fishing *ko`a* (shrine) were present along the beach and on the slopes above the bays, and petroglyphs were inscribed in many places whose meanings have yet to be fully understood (Thrum 1908, 1916, 1917; Walker 1930:103). Pearl shell was gathered from Makaiwa Beach for the eyes of the *ki`i* (image, picture) and battles were fought along the coast (Sterling 1998:45). A portion of the paved trail built by Kihapi`ilani, son of the great chief Pi`ilani, was identified along the Kā`anapali coast (Sterling 1998).

To the north was Pu`u Keka`a, made famous by being the birthplace of the sons of chiefs and long associated with ghosts, strange occurrences, and the skeletons of defeated invaders (Fornander 1918–19, Vol. 5:542). In Fornander, S. Kaha stated:

> Concerning the great amount of human bones at this place. On account of the great number of people at this place there are numerous skeletons [this was the vicinity of several bloody battles], as if thousands of people died there; it is there that the Lahainaluna students go to get skeletons for them when they are studying anatomy. The bones are plentiful there; they completely cover the sand.
>
> This is a ghostly place. Some time a number of people came from Kaanapali (from the other side) going to Lahaina in the dark. When they came to Kekaa stones rolled down from the top of the hill without any cause. Listening to it, it seemed as if the hill was tumbling down; the people going along were startled and they explained, Kekaa is ghostly! Kekaa is ghostly!" Certainly this is a strange thing for this hill to do [*Ibid*].

It was also believed that Pu`u Ka`a was a *leina a ka`uhane*, or soul's leap similar to O`ahu's Ka`ena Point. Naha says:

> It is said that when a person dies his spirit journeys to Kekaa; if he has a friend there who had previously died, that one would drive it away when the spirit is nearing Kekaa. Sometimes the spirit of a person would return and re-enter the body, and cause it to come to life again; that is what happened to those who are living again.

> Many souls came to this place Kekaa. It is called the Leina-a-ka-uhane, the leaping place of the soul...[*Ibid*].

According to legend, the lands surrounding Pu`u Keka`a were once areas of intense cultivation and the capital and home of the Maui chief, Kaka`alaneo, when he ruled West Maui. Kaka`alaneo lived on the *pu`u* with his wife, a chiefess from Moloka`i.

> Kekaa was the capitol of Maui when Kalaalaneo was reigning over West Maui...Many houses were constructed and people cultivated a great deal of potatoes, bananas, sugar cane, and things of a like nature. I have been told that the country from Kekaa to Hahakea and Wahikuli –that country now covered by cactus, in a northwesterly direction for Lahaina-was all cultivated. This chief [Kakaalaneo] also planted bread fruit and kukui trees down at Lahaina. Some of these trees southwest of the Lahaina fort, were called the bread fruit trees of Kauheana [Fornander 5:540–541].

Kaka`alaneo's possessions included fishponds in Hana and a famous breadfruit grove he planted outside of Lāhainā (Handy and Handy 1972). His son, Ka`ulula`au, became famous for traveling around Lāna`i fighting ghosts (Sterling 1998). Maui, the demi-god himself, was associated with the hill:

> At Kekaa lived Maui and Moemoe...The great desire of one [Moemoe] was to sleep. The other [Maui] desired to travel. When Moemoe slept, Maui was traveling, each according to his taste...[Moemoe] made up his mind...to search for his friend, Maui. A road on the northeast side of Kekaa was named after one of these men; it is called "Ke alanui kikeekee a Maui"-the zig zag pathway of Maui" [Fornander 1918-19, Vol. 5:540–544].

> It is recorded that Pu`ū Keka`a was the burial place for Kekaulike's oldest son, Kauhi`aimoku-a-kama who was defeated by his brother and Uncle at the Battle of Koko-o-na-moku further south at Makaiwa Beach (Sterling 1998). Kahekili succeeded his brother Kamehameha-Nui as ruler of Maui and to prove he was a true descendant of the gods, he leapt from the `Ū-ha-ne lele or Soul-Leaping Place of Maui. No ordinary man would dare to do this (*Ibid.*).

LĀHAINĀ DISTRICT SETTLEMENT PATTERNS

In Hawai`i, much of the coastal lands were preferred for chiefly residence. Easily accessible resources such as offshore and onshore fish ponds, the sea with its fishing and

surfing—known as the sports of kings, and some of the most extensive and fertile wet taro lands were located in the area (Kirch and Sahlins, 1992 Vol. 1:19). Inland resources necessary for subsistence, could easily be brought to the *ali`i* residences on the coast from nearby inland plantations. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch and Sahlins 1992, Vol. 2:59). Lāhainā had the added advantage of a calm roadstead and close proximity to Lāna`i, and Moloka`i (Handy and Handy 1972).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or "King's trail" built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, After the conquest of Maui by Kamehameha I, Lāhainā became the capitol of the Hawaiian Kingdom until it moved to Honolulu in 1855.

From early times, Lāhainā was favored by the *ali`i*. Kahekili, who became ruler of Maui in the 1700s, maintained his home and royal court here until his death in 1794. After laying waste to Lāhainā in the process of subjugating Maui, Kamehameha I proceeded to O`ahu, where he finally united all the islands (except Kaua`i) under his rule. He later returned and established residence and his seat of government in Lāhainā, constructing the first brick house in the town a short way north of the project area. During Kamehameha's time, Lāhainā thrived as a center for the lucrative sandalwood trade. His son, Liholiho, and his wife resided in Lāhainā until they sailed to England in 1823 never to return alive to their kingdom. Kamehameha III (Kauikeaouli) built a new royal residence, a complex of fine, thatched-roofed houses, for his entourage called Pākalā. In addition, he began to construct a palace of coral rock, two stories high, known as Hale Piula, close to the sea.

Whaling ships began coming to Hawai`i by the hundreds in the 1820s. The peak year of 1859 brought 549 whaling ships to the roadstead. Lāhainā became saturated with sailors, whalers, deserters, and other unsavory types as well as western businessmen. Soon missionaries followed to set straight, both sailor and Hawaiian, and to impose their foreign standards on the population, whether they wanted it or not. The golden age of whaling was between 1843 and 1860, when Lāhainā underwent a building frenzy initiated by those hoping to buy and sell and make their fortune. Kamehameha III built a private residential complex on the Moku`ula, a tiny island located in a freshwater fishpond near the project area. The death of his sister,

Nāhe`ena`ena, affected the king deeply. He had her body and that of their mother brought to Moku`ula where they were laid to rest in a specially constructed mausoleum and where he was to reside for the next eight years. In 1845, the court moved to O`ahu, as the port of Honolulu had become the commercial center oaf the kingdom.

Ethnographic and historic literature, often our only link to the past, reveals that the land around Lāhainā was rich in agricultural areas irrigated by aqueducts originating in well-watered valleys with permanent occupation predominately on the coast. Handy and Handy have stated the space cultivated by the natives of Lāhainā at about "...three leagues [9 miles] in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation" (1972:593). Crops cultivated included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and gourds.

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

> [We]...soon entered the verge of the woods where we observed the rugged bands of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer...[Menzies 1920:105].
>
> ...to see the village of Lahaina, which we could scattered along shore on a low tract of land that was nearly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regulated manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation [Menzies 1920:112].

Little had changed twenty-six years later when J. Arago visited Hawai`i with Captain Louis de Freycinet in 1819. He recorded:

> The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage...various sorts of vegetables and plants...amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and

> the paper-mulberry trees...[Arago cited in Handy and Handy 1972:493].

Rev. C.S. Stewart, a missionary in 1823 assigned to the Lāhainā station, also commented on the attractiveness of the environs:

> The settlement is far more beautiful than any place we have yet seen on the Islands. The entire district stretching nearly three miles along the seaside, is covered with luxuriant groves, not only of the cocoanut, the only tree we have before seen except on the tops of the mountains, but also of the breadfruit and the kou...while the banana plant, kappa and sugar-cane are abundant, and extend almost to the beach, on which a fine surf constantly rolls [Taylor 1928:42].

> ...The breadfruit trees stand as thickly as those of a regularly planted orchard, and beneath them are kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kappa trees, groves of banana, rows of the sugar cane, and bunches of the potato and melon...It scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting streams, which rush from the mountains, by artificial courses, on every plantation. Each farmer has a right, established by custom, to the water every fifth day [Taylor 1928:43].

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame'eleihiwa 1992:169-70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I:145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and

issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). There were no awarded LCAs in the vicinity of the project area (Waihona `Aina Data Base 2006). According to Puku`i *et al.* (1974:218), Wahikuli literally means "noisy place".

HISTORIC LAND USE

Lāhainā, long the port of choice and where commercial endeavors had succeeded the traditional economy, suffered with the demise of the whaling industry and the change in Capitol of the Hawaiian Kingdom to Honolulu. By the mid-1800s the Kā`anapali area was being converted from traditional agriculture to commercial sugar cane. As early as 1849, Judge A.W. Parsons operated a sugar mill in Lāhainā. Henry Dickenson began a sugar plantation in 1859 that was quickly followed by the Pioneer Mill Co. By 1883, Pioneer Mill Co. had assets in excess of $50,000,000 (Simpich 1974). Pioneer Mill's railroad extended from the center of Lāhainā Village to a point north of the town of Pu`ukoli`i in Hanaka`ō`ō and was as close as 350 feet above mean sea level at its northern end (Condé 1975). Pioneer Mill Co. reorganized in 1900 at which time its cane fields were located along the coast for 10 miles with some areas extending back as far as two and one half miles:

> The bulk of the crop is raised on lands that range from 10 feet to 700 feet elevation above sea level; the highest being cultivated at 1500 feet [Condé and Best 1973:254].

Sugar was processed and bagged at the mill in Lāhainā and then taken by train to the landing at Pu`u Keka`a (Black Rock). Other buildings had been constructed there to aid in the plantations activities, such as oil and molasses tanks, as well as a pavilion and some beach cottages on the beach for the use of Pioneer Mill Company's personnel (Clark 1980:61). To add to the enjoyment, a quarter-mile track had been constructed on the tidal flats (previously the site of the Battle of Koko-o-na-moku) behind Hanaka`ō`ō for horse racing on holidays. The Kā`anapali Landing was abandoned before World War II and by 1957 plans were in motion for a multi-million dollar resort to be built around Pu`u Keka`a. The shift to tourism in the 1950s sent the plantations into decline, however, the development of golf courses, hotels, condominiums, and shops have continued the popularity of Lahaina up to and including the present.

SUMMARY

The "level of effort undertaken" to identify potential effect by a project to cultural resources, places or beliefs (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people

who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a "good faith effort". However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity.

In the case of the present parcel, letters of inquiry were sent to organizations whose expertise would include the project area. Consultation was sought from the Maui Office of Hawaiian Affairs, Community Resource Coordinator, Maui (Thelma Shimaoka); the Office of Hawaiian Affairs, O`ahu (Kai Markell); the Cultural Resources Commission of Planning Maui Planning Department; Nā Kupuna O Maui (Patty Nishiyama); Hinano Rodrigues, the Cultural Historian with the State Historic Preservation Division, Holuamoku Ralar of the Hawaiian Civic Club, Lahaina Chapter; Kamika Kepa`a, a member of the Native Hawaiian Historic Preservation Council; and Ke`eaumoku Kapu with Kuleana Ku`ikāhi.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as I`i, Kamakau, Beckwith, Chinen, Kame`eleihiwa, Fornander, Kuykendall, Kelly, Handy and Handy, Puku`i and Elbert, Thrum, Sterling, and Cordy have contributed, and continue to contribute to our knowledge and understanding of Hawai`i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona `Aina 2005 Data base.

CULTURAL ASSESSMENT

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). To our knowledge, the project area has not been used for traditional cultural purposes within the recent past. Based on historical research and the lack of response at the time of this reports production (May 22, 2008), from the Maui Office of Hawaiian Affairs, Community Resource Coordinator, Maui (Thelma Shimaoka); the Office of Hawaiian Affairs, O`ahu (Kai Markell); the Cultural Resources Commission of

Planning Maui Planning Department; Nā Kupuna O Maui (Patty Nishiyama); Hinano Rodrigues, the Cultural Historian with the State Historic Preservation Division, Holuamoku Ralar of the Hawaiian Civic Club, Lahaina Chapter; Kamika Kepa`a, a member of the Native Hawaiian Historic Preservation Council; and Ke`eaumoku Kapu with Kuleana Ku`ikāhi, it is reasonable to conclude that, pursuant to Act 50, the exercise of Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities within the project parcel will not be affected and there will be no direct adverse effect upon cultural practices or beliefs.

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APPENDIX A: CONSULTATION REQUSTS

(No figures included)

SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

Holouamoku Ralar
Hawaiian Civic Club, Lahaina Chapter
P.O. Box 10965
Lahaina, Hawai'i 96761

Dear Holouamoku:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs…The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs…

We are asking you for any information that might contribute to the knowledge of traditional activities, or traditional rights that might be impacted by the project's proposed construction. The assessment results are dependent on the response and contributions made by individuals and organizations such as yours.

Enclosed are maps showing the proposed project area. Please contact me at our SCS Honolulu office at (808) 597-1182; my cell phone, 225-2355; or home, (808) 637-9539, with any information or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

Leann McGerty

Leann McGerty,
Senior Archaeologist
Enclosures (2)

Ph: 808-597-1182 SCS... SERVING ALL YOUR ARCHAEOLOGICAL NEEDS Fax: 808-597-1193
Neighbor Island Offices • Hawai'i Island • Maui • Kaua'i

SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

Patty Nishiyama
Nā Kupuna O Maui
320 Kaeo Place
Lahaina, Hawaii 96761

May 1, 2008

Dear Ms. Nishiyama:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Leann McGerty

Leann McGerty,
Senior Archaeologist
Enclosures (2)

SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

May 1, 2008

Kai Markell
Director of Native Rights
C/o Office of Hawaiian Affairs
711 Kapi'olani Blvd, Suite 500
Honolulu, HI 96813

Dear Mr. Markell:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Leann McGerty

Leann McGerty,
Senior Archaeologist
Enclosures (2)

Ph: 808-597-1182 SCS... SERVING ALL YOUR ARCHAEOLOGICAL NEEDS Fax: 808-597-1193
Neighbor Island Offices • Hawai'i Island • Maui • Kaua'i

SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

May 1, 2008

Thelma Shimaoka
c/o Office of Hawaiian Affairs
140 Hoohana St.
Suite 206
Kahului, HI 96732

Dear Ms. Shimaoka:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

County of Maui
Department of Planning
Cultural Resources Commission
250 S. High Street
Wailuku, HI 96793

May 1, 2008

Dear Sir or Madam:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty

Leann McGerty,
Senior Archaeologist
Enclosures (2)

SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

May 1, 2008

Hinano Rodrigues, Cultural Historian
DLNR Maui Office
130 Mahalani Street
Wailuku, HI 96791

Dear Hinano:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty

Leann McGerty,
Senior Archaeologist
Enclosures (2)

SCIENTIFIC CONSULTANT SERVICES, Inc.
711 Kapiolani Blvd., Suite 975 Honolulu, Hawai'i 96813

Ke'eaumoku and U'i Kapu
Kuleana Kuikahi, LLC.
P.O. Box 11524
Lahaina, Maui 96791

May 1, 2008

Dear Mr. and Mrs. Kapu:

Scientific Consultant Services, Inc. (SCS) has been contracted by Ronald M. Fukumoto Engineering, Inc., to conduct a Cultural Impact Assessment (CIA) on a portion of the Lahaina Civic Center site, Lahaina District, Maui (TMK: 4-5-021:010). Exhibits provided by Ronald M. Fukumoto Engineering, Inc., proposes the construction of four tennis courts, 24-stall parking lot, an accessible walkway, and landscaping plantings. As you know, this involves assessing the probability of impacting cultural values and rights within the project area. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty

Leann McGerty,
Senior Archaeologist
Enclosures (2)

APPENDIX E.

Preliminary Drainage Report

Lahaina Fire Station
Apparatus Bay Addition
Lahaina, Island of Maui, Hawaii

Drainage Report

February 2011

Prepared by:
AECOM
1001 Bishop Street, Suite 1600
Honolulu, Hawai'i 96813

Lahaina Fire Station
Apparatus Bay Addition

Drainage Report

TMK: (2nd Div) 4-5-021:016 (por.)

February 2011

DIANE Y. KODAMA
LICENSED PROFESSIONAL ENGINEER
No. 8668-C
HAWAII, U.S.A.

(Expires April 30, 2012)

This work was prepared by me or under my direct supervision.

Signature (*Diane Y. Kodama*) Date
AECOM

TABLE OF CONTENTS

FIGURES

APPENDICES

SECTION 1

INTRODUCTION

1.1 PURPOSE

The objective of this drainage report is to analyze and evaluate the effects of the proposed Lahaina Fire Station project on existing drainage patterns and to form a basis of design for a drainage system to manage flow within the site and convey water off-site in accordance with County of Maui drainage requirements for the area. A drainage report is required to obtain government approval for the proposed project. This report analyzes the conditions before and after the construction of the facility.

1.2 GENERAL INFORMATION

A. The project location is in the Lahaina district of Maui (see attached Figure 1, Vicinity and Location Maps). The Lahaina Fire Station Apparatus Bay Addition is being developed by the County of Maui, Department of Fire & Public Safety. The proposed improvements include the demolition of the storage shed and relocation of a fuel tank to provide a space for an Apparatus Bay Addition. The fire station Apparatus Bay Addition will accommodate a fire truck, utility vehicle, and boat/trailer combination. The project will include an additive bid item for living quarters. The 0.22 acre project area is located within the 16.78 acre development area.

B. Owner: County of Maui
Contact: Lee Mainaga, Fire Services Officer
Department of Fire and Public Safety
200 Dairy Road
Kahului, Maui, Hawai'i 96733
Phone: (808) 270-5542
Email: lee.mainaga@co.maui.hi.us

C. Vicinity & Location Maps (See Figure 1, Vicinity and Location Maps)

SECTION 2

PHYSICAL ENVIRONMENT

2.1 LOCATION

The Lahaina Fire Station project site is located in Lahaina, Maui, Hawaii 96761 at 1830 Honoapiilani Highway. The project area is approximately 0.22 acres. Refer to Figure 1 for a location map of the project. The Tax Map Key (TMK) for the project lot is (2)4-5-021:016 (por.).

2.2 TOPOGRAPHY

The project site generally slopes from an elevation of approximately 71.5 feet above sea level at its highest point to approximately 48.1 feet at its lowest. The drainage generally flows in a south-westerly direction.

2.3 SOILS

According to the August 1972 publication *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (Ref 4) by the United States Department of Agriculture, Soil Conservation Service, the soil at the project site is Waihikuli stony silty clay, with slopes of 3 to 7 percent (soil classification WcB). This series consists of well-drained soils on smooth, low uplands on the island of Maui. Permeability is moderate. Runoff is slow, and the erosion hazard is slight.

2.4 DRAINAGE/FLOODING

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) of the project area (Map Number 150003 0353 E. Ref 1), the area is classified as Zone X – 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.

2.5 RAINFALL

According to the Hawaii State Climate Office (HSCO) the annual rainfall for the project area amounts to 15.05 inches. The measurement was taken from Station 361 through the years 1949 and 2000. Station 361 is located approximately 1.8 miles south of the project site at 20.88 N, 156.68 W, 42 feet above sea level.

SECTION 3

DRAINAGE

3.1 METHODOLOGY

Drainage characteristics for the project site are analyzed through the use of the Rational Method. Drainage guideline standards for the County of Maui – *Rules for the Design of Storm Drainage Facilities in the County of Maui* (11/12/95, Ref 3) – states that the Rational Method shall be used for drainage areas of 100 acres or less.

3.2 HYDROLOGIC CRITERIA

The hydrologic criteria used to obtain peak discharges are summarized as follows:

Criteria	
Recurrence Interval:	Tm = 50 years (for sump conditions) Tm = 10 years (for non-sump conditions) (It is stated in the County of Maui - *Rules for the Design of Storm Drainage Facilities in the County of Maui* (11/12/95, Ref 3), that for drainage areas of 100 acres or less with sump, or tailwater effect and for the design of roadway culverts and bridges, Tm = 50 years)
Intensity and Rainfall Duration	Intensity of 1-hr Rainfall
Peak Discharges	Rational Method
Runoff Coefficient C	Determined from Table 1 or Table 2, (See Appendix A)

By County standards, drainage infrastructure (piping, catch basin, inlets, etc.) are to be sized using a 10-year storm. Retention ponds (underground chambers) are sized using a 50-year storm.

3.3 EXISTING DRAINAGE CONDITIONS

The project area is approximately 0.22 acres which is a small portion of the 16.78 acre lot size. The "Existing Drainage Map" (Figure 3) shows the existing site conditions. The existing fire

station encompasses an area of 1.31 acres. Within the limits of the fire station, there are three drainage areas. Drainage Area XDA-1, with an existing flow rate of 0.35 cfs, flows northwest onto Kaaahi Street and enters the existing catch basin CB-X1 located along Kaaahi Street. Drainage Area XDA-2, with an existing flow rate of 2.65 cfs, flows southwest onto Kaaahi Street and enters the catch basin CB-X2 located along Kaaahi Street near the corner of Kaaahi Street and Kikowaena Street. Drainage Area XDA-3, with an existing flow rate of 1.39 cfs, flows southwest onto Kikowaena Street and enters the existing catch basin CB-X3 located along Kikowaena Street near the corner of Kaaahi Street and Kikowaena Street. The total existing flow rate from the project's property is 4.39 cfs. Refer to Appendix B for existing drainage calculations.

3.4 PROPOSED DRAINAGE IMPROVEMENTS

The "Proposed Drainage Map" (Figure 4) shows the proposed site conditions. The proposed drainage system will include a drain inlet, underground stormwater chamber, drain manhole, and an overflow drain line connecting to the existing drainline along Kaaahi Street.

There are five drainage areas in the proposed condition. All five proposed drainage areas (NDA) are within the 1.31 acre drainage study area. The most intensive design scenario was applied to the drainage area five (NDA-5) which includes the additive bid area of the proposed building for living quarters.

The flow rate for Drainage Area NDA-1 and NDA-3 will remain at the same drainage condition of existing drainage area X1 and X3 respectively.

The flow rate for Drainage Area NDA-2 will be 1.66 cfs and continue to flow into existing catch basin CB-X2. Drainage Area NDA-4 is a new drainage area with a flow rate of 0.84 cfs. Surface runoff from NDA-4 will sheet flow though grass and into a grated drainage inlet. Storm water from the new building's roof (NDA-5) will be collected via downspouts and piped to the new drainage structures. An underground storm water chamber system (for retention) will be included

in the proposed drainage to control the storm water quantity of runoff entering the existing drainage system.

The total discharge in the drainage study area is anticipated to be 4.57 cfs in the proposed additive bid condition. Refer to Appendix C for proposed drainage calculations.

The underground detention chambers were sized to hold the increase in flow from the existing to the proposed conditions for a 50-year storm. The volume required for the underground stormwater chamber to manage the increase in runoff from this development is 451.65 cubic feet. The volume provided is 498.4 cubic feet. Refer to Appendix D for proposed underground stormwater chamber calculations. In the event that the underground stormwater chamber is overwhelmed from an intense storm event flows exceeding the capacity of the underground stormwater chamber, runoff will be conveyed downstream into the existing drainage system along Kaaahi Street via an 18" Dia. overflow pipe.

3.5 CONCLUSIONS

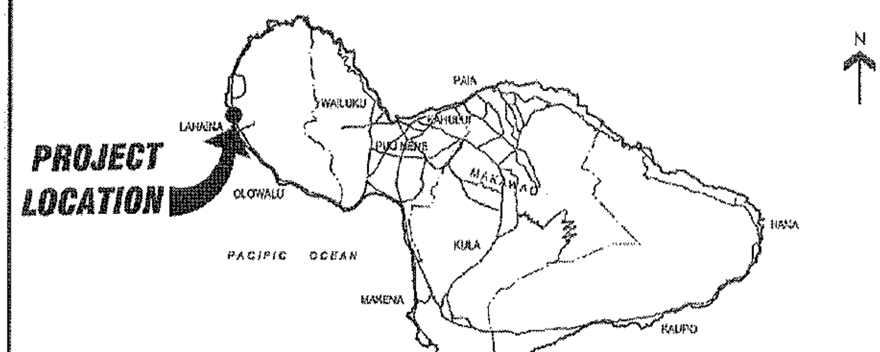
The existing flow for the site is 4.39 cfs and the proposed flow is 4.57 cfs which is a increase of 0.18 cfs. Although the amount of increase is negligible, we have provided a underground stromnwater chamber to provide quantity control for this project. The stormwater chambers will also act as a stormwater quality control BMP by allowing the pollutants in the low flows to be collected in the gravel under the chambers.

The proposed flow generating from this development will be reduced thus will not have an adverse impact to the existing drainage system downstream, neighboring properties, or roadways.

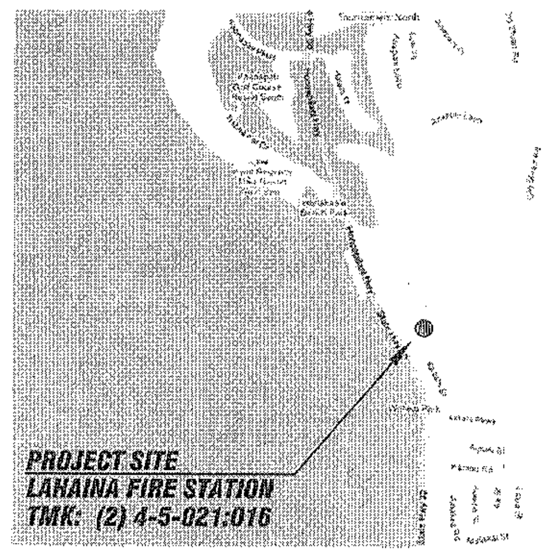
REFERENCES

1. *Flood Insurance Rate Map, Maui County, Hawaii*, Map Number 150003 0353E, Federal Emergency Management Agency, US Department of Homeland Security, September 25, 2009.
2. *Foundation Investigation, Lahaina Fire Station Expansion, Lahaina, Maui, Hawaii, W.O. 07-4536*, Hirata & Associates, Inc.., February 14, 2008.
3. *Rules for the Design of Storm Drainage Facilities in the County of Maui*, Department of Public Works, County of Maui, November 12, 1995.
4. United States Department of Agriculture, Soil Conservation Service, *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, August 1972.
5. Hawaii State Climate Office, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, November 2010, http://www.soest.hawaii.edu/MET/Hsco

FIGURES

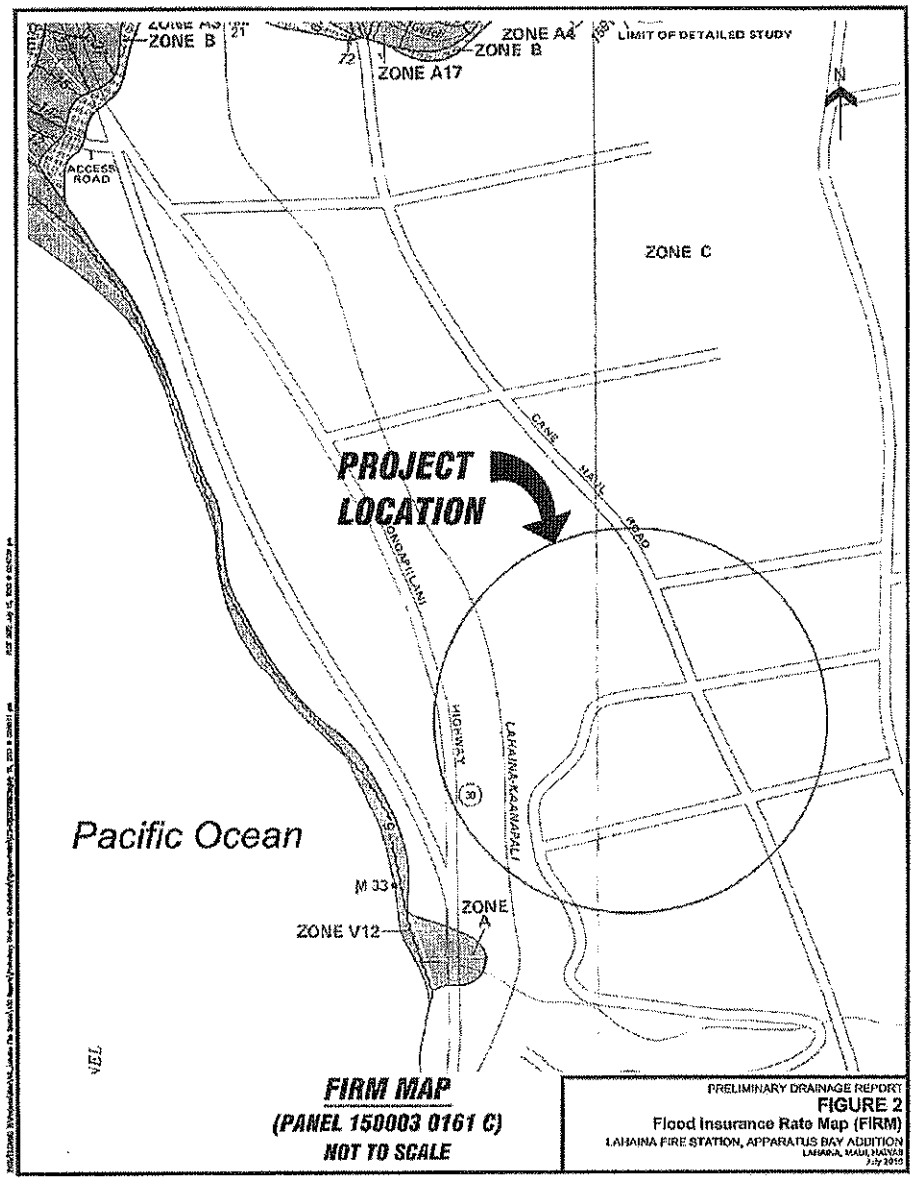


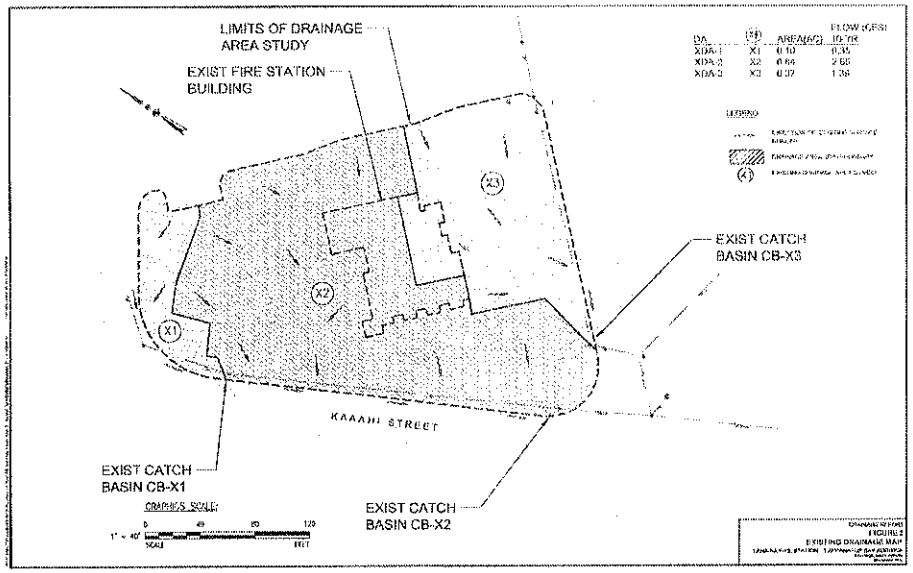
ISLAND OF MAUI
VICINITY MAP
NOT TO SCALE

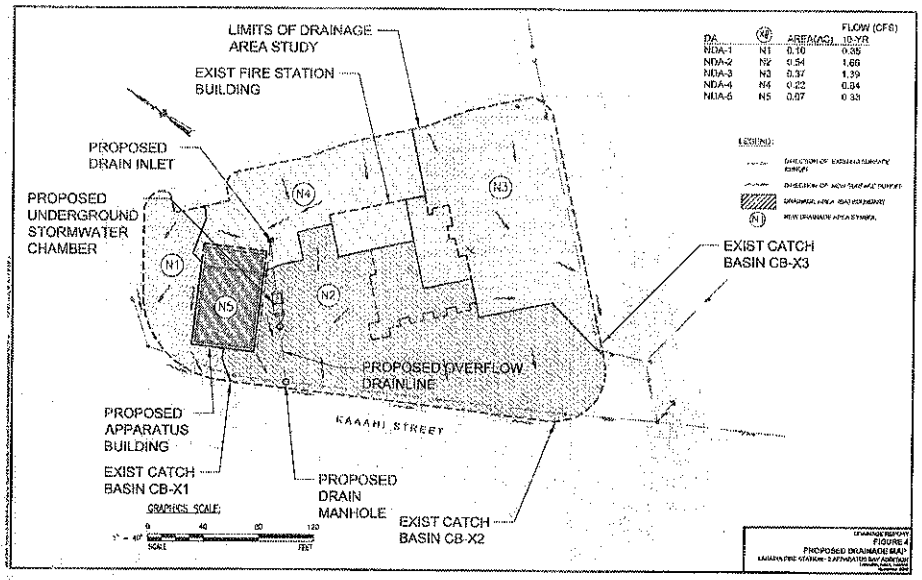


LOCATION MAP
NOT TO SCALE

PRELIMINARY DRAINAGE REPORT
FIGURE 1
Vicinity and Location Maps
LAHAINA FIRE STATION, APPARATUS BAY ADDITION
LAHAINA, MAUI, HAWAII
July 2010


ZONE B
ZONE A4
ZONE B
ZONE A17
LIMIT OF DETAILED STUDY
N
ACCESS ROAD
ZONE C
PROJECT LOCATION
CANE HAUL ROAD
HONOAPIILANI
HIGHWAY
30
LAHAINA-KAANAPALI
Pacific Ocean
M 33
ZONE V12
ZONE A
VE
FIRM MAP
(PANEL 150003 0161 C)
NOT TO SCALE
PRELIMINARY DRAINAGE REPORT
FIGURE 2
Flood Insurance Rate Map (FIRM)
LAHAINA FIRE STATION, APPARATUS BAY ADDITION
LAHAINA, MAUI, HAWAII
July 2019


LIMITS OF DRAINAGE AREA STUDY
EXIST FIRE STATION BUILDING
EXIST CATCH BASIN CB-X3
KAAAHI STREET
EXIST CATCH BASIN CB-X1
EXIST CATCH BASIN CB-X2
GRAPHICS SCALE
FIGURE 3
EXISTING DRAINAGE MAP



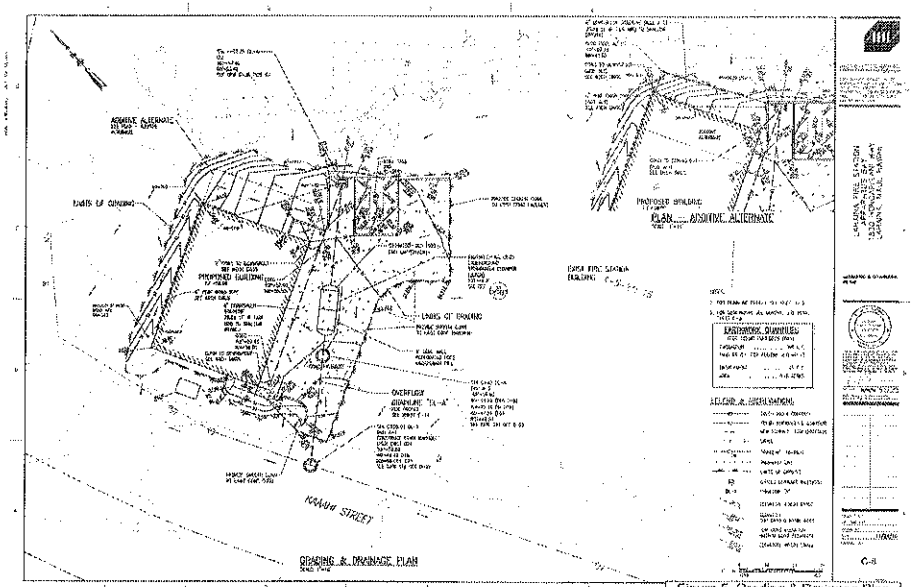


Figure 5. Grading & Drainage Plan

APPENDIX B

Drainage Design Calculations

EXISTING CONDITION

Drainage Design Calculations

Project Title:	Lahaina Fire Station	**Prepared By:** RA	**Date:** November 22, 2010
Location:	Lahaina, Island of Maui, HI	**Checked By:** DVK	**Date:**
Item:	DRAINAGE FLOW CALCULATIONS (EXISTING CONDITION)		

A. PURPOSE

Determine the quantity of surface runoff flow in cubic feet per second of the drainage area from the Lahaina Fire Station, Apparatus Bay Addition project area. The 10-year, 1-hour storm was used to estimate the design flow for non-sump conditions. No sump conditions were found for this project.

B. CRITERIA

Peak discharges shall be found using the Rational Method: $Q = C \times I \times A$.

C. CALCULATIONS

Surface runoff for the area of interest:

$$Q = C \cdot I \cdot A,$$

where, Q = flow rate in cubic feet per second (cfs);

C = runoff coefficient;

I = rainfall intensity in inches per hour (in./hr) for a duration equal to the time of concentration (T_c); and

A = drainage area in acres (Ac).

Runoff Coefficient

Table 1 – *Guide for the Determination of Runoff Coefficients for Built-Up Area* – the runoff coefficient is estimated as being:

$(C_{NDA-1}) = 0.68$

$(C_{NDA-2}) = 0.75$

$(C_{NDA-3}) = 0.75$

Rainfall Intensity

Drainage length (L_r)

(L_{XDA-1}) = 168', Slope (S) = (70.0' – 53.1') ÷ (168') × 100% = 10.0%

(L_{XDA-2}) = 516', Slope (S) = (68.7' – 48.1') ÷ (516') × 100% = 4.0%

(L_{XDA-3}) = 224', Slope (S) = (68.7' – 52.2') ÷ (224') × 100% = 7.4%

Plate 1 (Reference 1)—*Overland Flow Chart*—yields a time of concentration of:

T_{cXDA-1} = 5.5 minutes.

T_{cXDA-2} = 8.5 minutes.

T_{cXDA-3} = 5.9 minutes.

Plate 4 (Reference 1)—*Drainage Master Plan, 10 Year 1 Hour Rainfall*—suggests a 10year, 1-hour recurrent rainfall intensity of:

$$I_{10\text{-yr, 1-hr}} = 2.0 \text{ inches.}$$

For all existing drainage areas.

Plate 2 (reference 1)—*Intensity Duration 1 Hr Rainfall Curves*—indicates a converted, actual, working rainfall intensity for the project site to be used in the Rational Method as being:

I_{XDA-1} = 5.1 in./hr.

I_{XDA-2} = 4.2 in./hr.

I_{XDA-3} = 5.0 in./hr.

Area

As calculated through AutoCAD:

A_{XDA-1} = 0.10 Ac.

A_{XDA-2} = 0.84 Ac.

A_{XDA-3} = 0.37 Ac.

Surface Runoff

The product of the aforementioned, determined values yields the anticipated drainage flow that sheet flows into and from the project site:

$$Q = C \times I \times A$$

$Q_{XDA-1} = C \times I \times A = (0.68) \times (5.1 \text{ in./hr}) \times (0.10 \text{ Ac}) = \underline{0.35 \text{ cfs}}$.

$Q_{XDA-2} = C \times I \times A = (0.75) \times (4.2 \text{ in./hr}) \times (0.84 \text{ Ac}) = \underline{2.65 \text{ cfs}}$.

$Q_{XDA-3} = C \times I \times A = (0.75) \times (5.0 \text{ in./hr}) \times (0.37 \text{ Ac}) = \underline{1.39 \text{ cfs}}$.

Summary

Area	Area (acres)	Flow (cfs)	Description
XDA-1	0.10	0.35	*Flows to existing catch basin CB-X1*
XDA-2	0.84	2.65	*Flows to existing catch basin CB-X2*
XDA-3	0.37	1.39	*Flows to existing catch basin CB-X1*

Thus, the total amount of drainage in the study area is anticipated to be about 4.38 cfs in the existing condition (XDA-1 thru XDA-3).

REFERENCES

1. *Rules for the Design of Storm Drainage Facilities in the County of Maui*, County of Maui, November 12, 1995.

APPENDIX C

Drainage Design Calculations

PROPOSED CONDITION

Drainage Design Calculations

Project Title:	Lahaina Fire Station	**Prepared By:** RA	**Date:** January 17, 2010
Location:	Lahaina, Island of Maui, HI	**Checked By:** DYK	**Date:**
Item:	DRAINAGE FLOW CALCULATIONS (PROPOSED CONDITION)		

A. PURPOSE

Determine the quantity of surface runoff flow in cubic feet per second of the drainage area from the Lahaina Fire Station, Apparatus Bay Addition project area. The 10-year, 1-hour storm was used to estimate the design flow for non-sump conditions. No sump conditions were found for this project.

B. CRITERIA

Peak discharges shall be found using the Rational Method: $Q = C \times I \times A$.

C. CALCULATIONS

Surface runoff for the area of interest:

$$Q = C \cdot I \cdot A,$$

where, Q = flow rate in cubic feet per second (cfs);

C = runoff coefficient;

I = rainfall intensity in inches per hour (in./hr) for a duration equal to the time of concentration (T_c); and

A = drainage area in acres (Ac).

Runoff Coefficient

Table 1 – *Guide for the Determination of Runoff Coefficients for Built-Up Areas* (Reference 1) – the runoff coefficient is estimated as being:

(C_{NDA-1}) = 0.68
(C_{NDA-2}) = 0.75
(C_{NDA-3}) = 0.75
(C_{NDA-4}) = 0.75
(C_{NDA-5}) = 0.90

Rainfall Intensity

Drainage length (L)

(L_{NDA-1}) = 168', Slope (S) = (70.0' – 53.1') ÷ (168') × 100% = 10.0%.
(L_{NDA-2}) = 338', Slope (S) = (59.3' – 48.1') ÷ (338') × 100% = 3.3%.
(L_{NDA-3}) = 224', Slope (S) = (68.7' – 52.2') ÷ (224') × 100% = 7.4%.
(L_{NDA-4}) = 169', Slope (S) = (68.7' – 58.0') ÷ (169') × 100% = 6.3%.
(L_{NDA-5A}) = 45', Roof Pitch = 1:12 = 8.3%.

Plate 1 (Reference 1)—*Overland Flow Chart*—yields a time of concentration of:

$T_{c\,NDA-1}$ = 5.5 minutes.
$T_{c\,NDA-2}$ = 9.7 minutes.
$T_{c\,NDA-3}$ = 5.9 minutes.
$T_{c\,NDA-4}$ = 5.6 minutes.
$T_{c\,NDA-5}$ = <5.0 minutes.

Plate 4 (Reference 1)—*Drainage Master Plan, 10 Year 1 Hour Rainfall*—suggests a 10year, 1-hour recurrent rainfall intensity of:

$I_{10yr,\,1\text{-}hr}$ = 2.0 inches.

For all proposed drainage areas.

Plate 2 (reference 1)—*Intensity Duration 1 Hr Rainfall Curves*—indicates a converted, actual, working rainfall intensity for the project site to be used in the Rational Method as being:

I_{NDA-1} = 5.1 in./hr.
I_{NDA-2} = 4.1 in./hr.
I_{NDA-3} = 5.0 in./hr.
I_{NDA-4} = 5.1 in./hr.
I_{NDA-5} = 5.2 in./hr.

Area

As calculated through AutoCAD:

A_{NDA-1} = 0.10 Ac.
A_{NDA-2} = 0.54 Ac.
A_{NDA-3} = 0.37 Ac.

A_{NDA-4} = 0.22 Ac.

A_{NDA-5} = 0.07 Ac.

Surface Runoff

The product of the aforementioned, determined values yields the anticipated drainage flow that sheet flows into and from the project site:

$$Q = C \times I \times A$$

$Q_{NDA-1} = C \times I \times A = (0.68) \times (5.1\ in./hr) \times (0.10\ Ac) = \underline{0.35\ cfs}$.

$Q_{NDA-2} = C \times I \times A = (0.75) \times (4.1\ in./hr) \times (0.54\ Ac) = \underline{1.66\ cfs}$.

$Q_{NDA-3} = C \times I \times A = (0.75) \times (5.0\ in./hr) \times (0.37\ Ac) = \underline{1.39\ cfs}$.

$Q_{NDA-4} = C \times I \times A = (0.75) \times (5.1\ in./hr) \times (0.22\ Ac) = \underline{0.84\ cfs}$.

$Q_{NDA-5} = C \times I \times A = (0.90) \times (5.2\ in./hr) \times (0.07\ Ac) = \underline{0.33\ cfs}$.

Summary

Area	Area (acres)	Flow (cfs)	Description
NDA-1	0.10	0.35	*Flows to existing catch basin CB-X1*
NDA-2	0.54	1.66	*Flows to existing catch basin CB-X2*
NDA-3	0.37	1.39	*Flows to existing catch basin CB-X3*
NDA-4	0.22	0.84	*Flows to proposed Shallow Drywell*
NDA-5	0.06	0.33	*Piped to proposed Shallow Drywell*

Thus, the total amount of drainage in the study area is anticipated to be about **4.56 cfs** in the proposed Additive Bid condition.

REFERENCES

1. *Rules for the Design of Storm Drainage Facilities in the County of Maui*. County of Maui, November 12, 1995.

APPENDIX D

Drainage Design Calculations

UNDERGROUND STORMWATER CHAMBER CALCULATIONS

Drainage Design Calculations

Project Title: Lahaina Fire Station - Apparatus Bay Addition **Prepared By:** SF **Date:** 2/2/2011
Location: Lahaina, Maui, HI **Checked By:** DK **Date:** 2/2/2011
Item: DRAINAGE FLOW CALCULATIONS (EXISTING CONDITION) for Stormwater Chamber

A. PURPOSE

Determine the quantity of surface runoff flow in cubic feet per second of the drainage area from the Lahaina Fire Station Apparatus Bay Addition project area for the stormwater detention pond sizing. The 50-year, 1-hour storm was used to estimate the design flow.

B. CRITERIA

Peak discharges shall be found using the Rational Method: $Q = C \times I \times A$.

C. CALCULATIONS

Surface runoff for the area of interest:

$$Q = C \cdot I \cdot A,$$

where, Q = flow rate in cubic feet per second (cfs);

C = runoff coefficient;

I = rainfall intensity in inches per hour (in/hr) for a duration equal to the time of concentration (T_c); and

A = drainage area in acres (Ac).

Runoff Coefficient

Table 1 – *Guide for the Determination of Runoff Coefficients for Built-Up Area* – the runoff coefficient is estimated as being:

$(C_{XDA-1}) = 0.68$
$(C_{XDA-2}) = 0.75$
$(C_{XDA-3}) = 0.75$

Rainfall Intensity

Drainage length (L)

$(L_{XDA-1}) \approx 168'$, Slope (S) = (70.0' – 53.1') ÷ (168') × 100% ≈ 10.0%
$(L_{XDA-2}) \approx 516'$, Slope (S) = (68.7' – 48.1') ÷ (516') × 100% ≈ 4.0%.
$(L_{XDA-3}) \approx 224'$, Slope (S) = (68.7' –52.2') ÷ (292') × 100% ≈ 5.7%.

Plate 1 (Reference 1)—*Overland Flow Chart*—yields a time of concentration of:

$T_{c,XDA-1} = 5.5$ minutes.
$T_{c,XDA-2} = 8.5$ minutes.
$T_{c,XDA-3} = 5.9$ minutes.

Plate 4 (Reference 1)—*Drainage Master Plan, 50 Year 1 Hour Rainfall*—suggests a 50year, 1-hour recurrent rainfall intensity of:

$I_{50-yr,\ 1-hr} = 2.5$ inches.

For all existing drainage areas.

Plate 2 (reference 1)—*Intensity Duration 1 Hr Rainfall Curves*—indicates a converted, actual, working rainfall intensity for the project site to be used in the Rational Method as being:

$I_{XDA-1} = 6.1$ in./hr.
$I_{XDA-2} = 5.3$ in./hr.
$I_{XDA-3} = 6.0$ in./hr.

Area

As calculated through AutoCAD:

$A_{XDA-1} = 0.10$ Ac.
$A_{XDA-2} = 0.84$ Ac.
$A_{XDA-3} = 0.37$ Ac.

Surface Runoff

The product of the aforementioned, determined values yields the anticipated drainage flow that sheet flows into and from the project site:

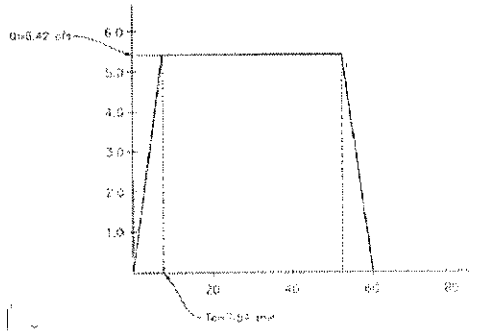
$$Q = C \times I \times A$$

$Q_{XDA-1} = C \times I \times A = (0.68) \times (6.1\ in./hr) \times (0.10\ Ac) = \underline{0.41\ cfs}.$
$Q_{XDA-2} = C \times I \times A = (0.75) \times (5.3\ in./hr) \times (0.84\ Ac) = \underline{3.34\ cfs}.$
$Q_{XDA-3} = C \times I \times A = (0.75) \times (6.0\ in./hr) \times (0.37\ Ac) = \underline{1.67\ cfs}.$
Total $Q_{EX} = \underline{5.42\ cfs}$

Calculate Existing Storm Water Volume (1 hour base hydrograph)

Q_{EX}=5.42 cfs

T_C= {(5.5×0.10)+(8.5×0.84)+(5.9×0.37)}/(0.10+0.84+0.37)= 7.54 minutes



$(Volume)_{EX}$=0.5×{(60-2×7.54)+60}×60×5.42=17057.31 CF

V_{EX}=17057.31 CF

Drainage Design Calculations

Project Title: Lahaina Fire Station – Apparatus Bay Addition **Prepared By: SJ** **Date: 2/2/2011**
Location: Lahaina, Maui, HI **Checked By:** DK **Date: 2/2/2011**
Item: DRAINAGE FLOW CALCULATIONS (PROPOSED CONDITION) for Stormwater Chamber

A. PURPOSE

Determine the quantity of surface runoff flow in cubic feet per second of the drainage area from the Lahaina Fire Station Apparatus Bay Addition project area for the stormwater detention pond sizing. The 50-year, 1-hour storm was used to estimate the design flow.

B. CRITERIA

Peak discharges shall be found using the Rational Method: $Q = C \times I \times A$.

C. CALCULATIONS

Surface runoff for the area of interest:

$$Q = C \cdot I \cdot A,$$

where, Q = flow rate in cubic feet per second (cfs);

C = runoff coefficient;

I = rainfall intensity in inches per hour (in./hr) for a duration equal to the time of concentration (T_c); and

A = drainage area in acres (Ac).

Runoff Coefficient

Table 1 – *Guide for the Determination of Runoff Coefficients for Built-Up Area* – the runoff coefficient is estimated as being:

$(C_{NDA-1}) = 0.68$
$(C_{NDA-2}) = 0.75$
$(C_{NDA-3}) = 0.75$
$(C_{NDA-4}) = 0.75$
$(C_{NDA-5}) = 0.90$

Rainfall Intensity

Drainage length (L)

$(L_{NDA-1}) = 168'$, Slope (S) = (70.0' – 53.1') ÷ (168') × 100% = 10.0%.
$(L_{NDA-2}) = 338'$, Slope (S) = (59.3' – 48.1') ÷ (338') × 100% = 3.3%.
$(L_{NDA-3}) = 224'$, Slope (S) = (68.7' – 52.2') ÷ (224') × 100% = 7.4%.
$(L_{NDA-4}) = 169'$, Slope (S) = (68.7' – 58.9') ÷ (169') × 100% = 6.3%.
$(L_{NDA-5A}) = 45'$, Roof Pitch = 1:12 = 8.3%.

Plate 1 (Reference 1)—*Overland Flow Chart*—yields a time of concentration of:

$T_{cNDA-1} = 5.5$ minutes.
$T_{cNDA-2} = 9.7$ minutes.
$T_{cNDA-3} = 5.9$ minutes.
$T_{cNDA-4} = 5.6$ minutes.
$T_{cNDA-5} = <5.0$ minutes.

Plate 4 (Reference 1)—*Drainage Master Plan, 50 Year 1 Hour Rainfall*—suggests a 50year, 1-hour recurrent rainfall intensity of:

$$I_{50\text{-}yr,\ 1\text{-}hr} = 2.5 \text{ inches.}$$

For all existing drainage areas.

Plate 2 (reference 1)—*Intensity Duration 1 Hr Rainfall Curves*—indicates a converted, actual, working rainfall intensity for the project site to be used in the Rational Method as being:

$I_{NDA-1} = 6.1$ in./hr.

I_{SDA-2} = 5.1 in./hr.
I_{SDA-3} = 6.0 in./hr.
I_{SDA-4} = 6.1 in./hr.
I_{SDA-5} = 6.2 in./hr.

Area

As calculated through AutoCAD:

A_{SDA-1} = 0.10 Ac.
A_{SDA-2} = 0.54 Ac.
A_{SDA-3} = 0.37 Ac.
A_{SDA-4} = 0.22 Ac.
A_{SDA-5} = 0.07 Ac.

Surface Runoff

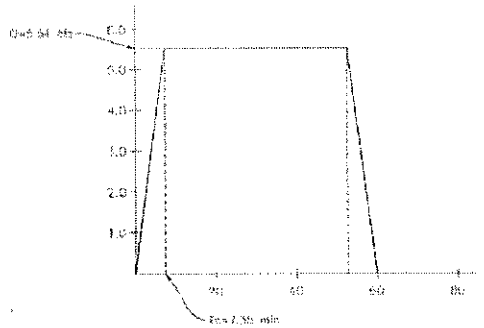
The product of the aforementioned, determined values yields the anticipated drainage flow that sheet flows into and from the project site:

$$Q = C \times I \times A$$

$Q_{SDA-1} = C \times I \times A = (0.68) \times (6.1\ in./hr) \times (0.10\ Ac) = \underline{0.41\ cfs}$.
$Q_{SDA-2} = C \times I \times A = (0.75) \times (5.1\ in./hr) \times (0.54\ Ac) = \underline{2.07\ cfs}$.
$Q_{SDA-3} = C \times I \times A = (0.75) \times (6.0\ in./hr) \times (0.37\ Ac) = \underline{1.67\ cfs}$.
$Q_{SDA-4} = C \times I \times A = (0.75) \times (6.1\ in./hr) \times (0.22\ Ac) = \underline{1.01\ cfs}$.
$Q_{SDA-5} = C \times I \times A = (0.90) \times (6.2\ in./hr) \times (0.07\ Ac) = \underline{0.39\ cfs}$.
Total Q = **5.54 cfs**

Calcualte Proposed Storm Water Volume (1 hour base hydrograph)

$Q_{proposed}$=5.54 cfs
T_c={(5.5×0.10)+(9.7×0.54)+(5.9×0.37)+(5.6×0.22)+(5.0×0.07)}/(0.54+0.22+0.07)=7.35 minutes



$(Volume)_{proposed}$=0.5×{(60-2×7.35)+60}×60×5.58=17,508.95 CF
V_P=17,508.95 CF

Drainage Design Calculations

Project Title: Lahaina Fire Station – Apparatus Bay Addition **Prepared By:** SI **Date:** 2/2/2011
Location: Lahaina, Maui, HI **Checked By:** DK **Date:** 2/2/2011
Item: Storm Water Containment Structure Required Storage Calculations

A. PURPOSE

Determine the required storage volume in cubic feet for the underground stormwater chamber system in the Lahaina fire station Apparatus Bay Addition project. In accordance with County of Maui drainage standards, the 50-year, 1 hour storm was used to estimate the design drainage flow.

B. CRITERIA

The modified rational method is utilized in estimating the size of the underground storm water chamber system. An estimate of the minimum required storage is measured as the difference between the area under the direct runoff hydrograph (DRH) for the 50-year, 1-hour storm at the proposed developed condition at the site and the existing condition at the site. Refer to the attached calculations for the development of the estimated existing and proposed hydrographs.

C. CALCULATIONS

The direct runoff hydrograph has a generally trapezoidal shape with a base of 60 minutes (1-hr Rainfall) and the time to peak flow of the time of concentration. The time from peak flow to the zero runoff is also the time of concentration.

EXISTING CONDITION

Q_{E50} = CIA = 5.42 cfs (Ref. Drainage Design Calculation for Existing Drainage in Appendix D)

Tc = 7.54 minutes

V_{E50} = (½*(bottom + top)*height)$_{Trapezoid}$ x 60 sec/min
= (½*(60+(60-2*7.54))*5.42)*60
= 17,057.31 ft^3

PROPOSED CONDITION

Q_{P50} = CIA = 5.54 cfs (Ref. Drainage Design Calculation for Proposed Drainage in Appendix D)

Tc = 7.35 minutes

V_{P50} = (½*(bottom + top)*height)$_{Trapezoid}$ x 60 sec/min
= (½*(60+(60-2*7.35)*5.54)*60
= 17,508.95 ft^3

Therefore, the theoretical minimum detention/retention storage volume needed is calculated as:

Minimum Required Storage = V_{P50} – V_{E50}
= 17508.95-17057.31
= **451.64 ft^3**

The next step was to route the proposed hydrograph through the proposed underground storm water retention chamber system to determine the peak overflow discharging from the chamber system. A 2-STORMTECH MC-3500 chamber system with an estimated 498.4 ft^3 storage capacity is selected.

D. SUMMARY

Thus, the minimum underground storage required to attenuate the 50-year, 1-hour flood is approximately **451.64 ft^3** and smaller than the proposed 2-chamber STORMTECH MC-3500 system with an estimated **498.4 ft^3** storage capacity.

APPENDIX F.

Letter from Department of Planning Regarding County Special Use Permit Requirement

CHARMAINE TAVARES
Mayor

KATHLEEN ROSS AOKI
Director

ANN T. CUA
Deputy Director

COUNTY OF MAUI

DEPARTMENT OF PLANNING

October 1, 2010

TO: Jeffrey A. Murray, Fire Chief
Department of Fire and Public Safety

FROM: Kathleen R. Aoki, Planning Director
Department of Planning

SUBJECT: Lahaina Fire Station Apparatus Bay, located at 1860 Honoapiilani Highway, Lahaina, Maui, Hawaii, TMK: (2) 4-5-021:016

Thank you for your letter dated September 21, 2010 which provided justification that the fire station is necessary for agricultural practices and therefore meets the intent of Section 19.30A.060 (E) of the Maui County Code (MCC).

Uses included in Section 19.30A.060 (E) MCC, require a County special use permit. You may find the application at http://www.co.maui.hi.us/index.asp?NID=1313

The parcel is located within the Special Management Area (SMA) and requires a SMA permit. A project valuation of over $125,000 requires an SMA major permit. The application can be found online at http://www.co.maui.hi.us/index.asp?NID=1245. Also, be advised that the use of County lands and/or funds requires compliance to Chapter 343, HRS, relating to Environmental Impact Statements.

If you require further clarification, please contact Francis Cerizo, Staff Planner, at extension 7253.

	Fire Admin	Fire 1	Fire 2	AC-Ops	AC-Admin	FSO	BC-1	BC-2	BC-3	BC-4	BC-5	BC-6	Trng	FPB	Health & Safety	HR	Fiscal	Mech	Warehouse	Rox	Other	Date:	By:
FYI																							
Handle																							
Comment																						Date:	
See Me																							
Direct Reply																							
File																							

xc: Francis Cerizo; Staff Planner
General File
KIVA related document

KRA:AHS:FAC:CEC:ckk
K:\WP_DOCS\PLANNING\LTR\2010\Lahaina Fire Station Use Determination\AgUse.doc

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CURRENT DIVISION (808) 270-8205; LONG RANGE DIVISION (808) 270-7214; ZONING DIVISION (808) 270-7253