MICHAEL P. VICTORINO
Mayor

MICHELE CHOUTEAU MCLEAN, AICP
Director

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Deputy Director

FILE COPY

DEPARTMENT OF PLANNING
COUNTY OF MAUI
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAII 96793

APR 23 2021

April 9, 2021

Mrs. Kathleen S.Y. Ho, Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mrs. Ho,

SUBJECT: PROPOSED IMPROVEMENTS TO UPGRADE THE WASTEWATER TREATMENT FACILITY (WWTF) AT HOTEL MOLOKA'I LOCATED AT KAMEHAMEHA V HIGHWAY, KAMILILOA, HAWAII; TMK: (2) 5-4-002:001

With this letter, the County of Maui, Department of Planning hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-FONSI) for the proposed improvements to upgrade the WWTF situated at TMK (2) 5-4-002:001 in Kamililoa, Island of Molokai for publication in the next available edition of The Environmental Notice. Attached is an Adobe PDF file of the DEA-FONSI and a zip file that contains the shapefile of the project's location.

If additional clarification is required, please contact Jared Chang of SSFM International by email at jchang@ssfm.com or by phone at (808) 531-1308 or Sybil Lopez of the County of Maui by email at sybil.lopez@mauicounty.gov or by phone at (808) 553-4190.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for MICHELE MCLEAN, AICP
Planning Director

xc: Sybil K. Lopez, Staff Planner, County of Maui Planning Department
Jared Chang, Consultant, SSFM International

MCM:CIY:SKL:lp
K:\WP_DOCS\PLANNING\EA\2020\0006_HotelMolokaiWastewaterFacility\OEQC_Coverletter.doc

21-144

From: webmaster@hawaii.gov
To: HI Office of Environmental Quality Control
Subject: New online submission for The Environmental Notice
Date: Thursday, April 15, 2021 11:27:31 AM

Action Name

Hotel Moloka'i Wastewater Treatment Facility

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (3) Propose any use within a shoreline area

Judicial district

Molokaʻi, Maui

Tax Map Key(s) (TMK(s))

(2) 5-4-002:001

Action type

Applicant

Other required permits and approvals

HRS 6E (Historic Preservation), SM1 Permit, Flood Development Permit, Shoreline Setback Assessment, Community Noise Permit, Grading Permit

Discretionary consent required

SM1 Permit

Approving agency

County of Maui Planning Department

Agency contact name

Sybil Lopez

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Sybil.Lopez@co.maui.hi.us

Email address or URL for receiving comments

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United States

Map It

Applicant

Association of Apartment Owners of Hotel Moloka'i (AOAO)

Applicant contact name

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Applicant contact phone

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Applicant address

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Kaunakakai, Hawaii 96748
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

SSFM International

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Consultant address

501 Sumner Street, Suite 620
Honolulu, Hawaii 96817
United States
Map It

Action summary

The Association of Apartment Owners of Hotel Molokaʻi (AOAO) is proposing improvements to upgrade and construct a new wastewater treatment facility at Hotel Molokaʻi to ensure that the property's effluent is in continual compliance with permit requirements to meet the State of Hawai'i Department of Health (DOH) current regulatory effluent discharge standards.

Reasons supporting determination

Refer to DEA Chapter 5. Findings and Conclusion

Attached documents (signed agency letter & EA/EIS)

- 210409-OEQC_Coverletter.pdf

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

- Project-Location.zip

Authorized individual

Matthew Fernandez (SSFM International, consultant planner)

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

Hotel Molokai Wastewater Treatment Facility

Draft Environmental Assessment

April 2021

Prepared for: Association of Apartment Owners of Hotel Molokai
Prepared by: SSFM International

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Project Summary

Project Name	Hotel Molokaʻi Wastewater Treatment Facility
Location	Kaunakakai, Island of Molokaʻi
District	Kona
Project Site Tax Map Key	(2) 5-4-002:001
Landowner	Association of Apartment Owners of Hotel Molokaʻi (AOAO)
Project Site Existing Uses	Hotel Molokaʻi is the island's oldest and longest continuously running hotel. This 2.45-acre waterfront property consists of 13 separate buildings and accommodation units with 59 hotel rooms plus a full bar and restaurant. The majority of the site is currently used for guest accommodations, hotel parking, and lūʻau facilities.
State Land Uses	Urban
County of Maui Zoning	H-1 Hotel District
Proposed Action	The Association of Apartment Owners of Hotel Molokaʻi (AOAO) is proposing improvements to upgrade the WWTF at Hotel Molokaʻi to comply with Department of Health (DOH) effluent discharge standards.
Anticipated Impacts	No long-term impacts to any resource, as discussed in **Chapter 3: Environmental Setting, Potential Impacts, and Minimization and Mitigation Measures**, are anticipated with implementation of the Proposed Action. Any impacts would be during the construction phase and would be short-term and temporary. The Proposed Action would have beneficial impacts associated with bringing the wastewater treatment facility (WWTF) up to compliance with DOH effluent discharge standards due to the positive impacts for public health and safety of the community and the surrounding environment.
Applicant	The AOAO of Hotel Molokaʻi 672 Old Mill Road, PMB #311 Millersville, MD 21108 Contact: Matthew A. Tucker
Approving Agency	County of Maui Planning Department
Anticipated Determination	Finding of No Significant Impact (FONSI)
Project Site Permits/ Approvals Required	• Hawaiʻi Revised Statutes (HRS) Chapter 6E, Historic Preservation • Special Management Area Use (SM1) Permit • Flood Development Permit • Shoreline Setback Variance

	• Community Noise Permit/Community Noise Variance • Grading Permit
EA Preparer	SSFM International, Inc. 99 Aupuni Street, Suite 202 Hilo, Hawai'i 96720 Contact: Jennifer Scheffel (808) 356-1273
Individuals, Community Groups, and Agencies Consulted	See **Chapter 6: Agencies and Organizations Consulted**

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Appendix D Preliminary Engineering and Design Plans

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Acronyms

°F	degrees Fahrenheit
%	percent
AAQS	Ambient Air Quality Standards
ALR	Archaeological Literature Review
AOAO	Association of Apartment Owners of Hotel Moloka'i
BOD_5	Biochemical Oxygen Demand
BMPs	Best Management Practices
CO	carbon monoxide
CO_2	carbon dioxide
COM	County of Maui
dB	decibel
DHHL	State of Hawai'i Department of Hawaiian Home Lands
DLNR	State of Hawai'i Department of Land and Natural Resources
DOH	State of Hawai'i Department of Health
DOH-WWB	State of Hawai'i Department of Health, Wastewater Branch
DWS	County of Maui Department of Water Supply
EA	Environmental Assessment
EMS	emergency medical services
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GHG	greenhouse gases
HAR	Hawai'i Administrative Rules
HRS	Hawai'i Revised Statutes
IPaC	Information for Planning and Conservation
KMW	Kealia silt loam
MECO	Maui Electric Company

µg/m³	micrograms per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
OEQC	Office of Environmental Quality Control
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
SHPD	DLNR State Historic Preservation Division
SIHP	State Inventory of Historic Places
SMA	Special Management Area
SO_2	sulfur dioxide
TSS	Total Suspended Solids
UH-Mānoa	University of Hawai'i at Mānoa
USDA-SCS	U.S. Department of Agriculture – Soil Conservation Service
USFWS	U.S. Fish and Wildlife Service
WWTF	Wastewater Treatment Facility
TMK	Tax Map Key

Glossary

Ahupuaʻa – Land division usually extending from the uplands to the sea

Critical Habitat - term used in the Endangered Species Act to define those areas of habitat that are known to be essential for an endangered or threatened species to recover and that require special management or protection.

Leeward – Drier side or the side facing away or sheltered from the prevailing winds by hills or mountains

Makai – Ocean

Mauka – Inland

Moku – traditional Native Hawaiian district of an island

Windward – Wetter side or the side facing prevailing winds

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1. Project Description

1.1. Introduction

Hotel Molokaʻi is located on the *makai* side of Kamehameha V Highway in Kaunakakai on the south shore of Molokaʻi. The town of Kaunakakai is the principal commercial, civic, and population center of the island compared to most of the island which is characterized by smaller towns surrounded by vast agricultural lands and rural homestead settlements.

Molokaʻi's visitor industry began in the late 1960s with the opening of Hotel Molokaʻi and the Pau Hana Inn in Kaunakakai, and on the west end of the island with the Kaluakoʻi Hotel opening in 1977. Economic events in the early-2000s has since forced the closure of the Pau Hana Inn and the Kaluakoʻi Hotel, thus leaving Hotel Molokaʻi as significantly the island's oldest and longest continuously running hotel. Since the passage of the County of Maui's Bill 22 in 2020 which has banned all short-term rental facilities on the island, Hotel Molokaʻi now serves as one of the very few visitor accommodations and the only hotel on the island. The developed hotel complex includes 13 separate buildings and accommodation units with 59 hotel rooms plus a full bar and restaurant and contains landscaped grasses and trees. The hotel is also home to one of only two bars on the island. Majority of the site is currently used for guest accommodations, hotel parking, and lūʻau facilities. The Association of Apartment Owners (AOAO) of Hotel Molokaʻi is responsible for running and maintaining the hotel complex. The AOAO is made up several condo owners including Blue Island Property Holdings LLC, who owns and operates 51 of the 59 units on the property, and other private condo owners who own the other 8 hotel units.

The Molokaʻi Island Community Plan (2018), which sets desired community land uses within the community plan regions of the County, has designated the project property to be for Hotel use which was envisioned by the community as "transient accommodations and commercial uses predominantly to serve guests" (see **Section 4.2**). In accordance with the community plan, the County has also zoned the property as a H-1 Hotel District (Maui County Code, Title 19) (see **Section 4.2**). The 2.45-acre waterfront property is within the State Urban designated zone with Kamehameha V Highway bordering the property to the north, the Kamiloloa beach and ocean to the south, and by single-family residential properties adjacent to the property on the east and west and to the north of the highway (see **Section 4.1**). Other adjacent land uses include agricultural designated lands for the Department of Hawaiian Home Lands (DHHL) owned Kamiloloa-Makakupaʻia Homestead community located further north of Kamehameha V Highway and the Kalokoʻeli native Hawaiian fishpond designated as Conservation land located four parcels to the west of Hotel Molokaʻi (see **Section 4.1**).

The County of Maui Department of Environmental Management, Wastewater Division, currently provides wastewater services in the town of Kaunakakai through its Wastewater Reclamation Facility. However, due to its remote location further from the town center of Kaunakakai, Hotel Molokaʻi maintains its own wastewater treatment facility (WWTF) to handle wastewater generated by its hotel and restaurant operations. The WWTF at Hotel Molokaʻi is one of a three private wastewater treatment facilities on the island. The remainder of the island is served by individual septic tanks and cesspools, including all schools, major visitor accommodations, the Hoʻolehua Airport, and all DHHL development on DHHL homesteads.

1.2. Project Background

In February 2017, the Department of Health (DOH) conducted an operation and maintenance inspection of the existing WWTF at Hotel Moloka'i. The WWTF was given an inspection rating of "Unacceptable" due to the facility not meeting DOH effluent discharge standards. The DOH-Wastewater Branch (DOH-WWB) has directed the Association of Apartment Owners (AOAO) Hotel Moloka'i to proceed with the design and construction of a replacement WWTF at Hotel Moloka'i in order to bring the facility up to compliance.

The existing WWTF is configured as nine separate underground cavitette type units, equipped with a small primary chamber and aeration units of approximately 1,400-gallon capacity connected to different buildings throughout the Hotel Moloka'i property. The existing cavitette treatment units, pump stations, and grease interceptor are located in lawn and landscaped areas between buildings. These cavitette treatment units then pump treated wastewater to six injection wells located under the asphalt parking lot located along the west side of the property's highway frontage. These injection wells serving the property were constructed in 1968 at the time the resort was built. Given the location and resort setting at below grade, a proposed fully buried WWTF was determined as the only viable alternative to replace the existing system.

The proposed WWTF would be a single central treatment unit located within the upper parking lot to provide as much separation from the hotel units as possible, minimize challenges associated with dewatering, and to provide greater economy of scale as it relates to treatment capacity and maintenance requirements. The centralized WWTF would require: (1) conveyance of the wastewater from the various sources to that central location; and (2) conveyance of electrical power from the existing main panel on the opposite side of the facility to the proposed WWTF site. The DOH-WWB mandated value of 15,543 gallons per day was used to assess tank capacity requirements. A total tank volume of 24,000 gallons was calculated as sufficient to treat wastewater generated by Hotel Moloka'i and to meet the DOH-WWB's tank capacity requirements for the property.

1.3. Purpose and Need for the Proposed Action

Purpose of the Proposed Action

The purpose of the Proposed Action is to construct a new WWTF to ensure that the property's effluent is in continual compliance with permit requirements to meet the DOH's current regulatory discharge standards.

Need for the Proposed Action

The DOH-WWB has directed AOAO Hotel Moloka'i to proceed with the design and installation of a replacement WWTF. This directive was issued in response to the existing WWTF producing effluent that failed to meet the permitted DOH-WWB discharge standards as evidenced by the results of mandatory laboratory testing. On occasion, effluent parameters for Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) have exceeded DOH-WWB effluent permit levels for the property.

Chapter 11-62, Hawaii Administrative Rules (HAR) requires that the BOD_5 and TSS in the effluent from treatment works shall not exceed 60 milligrams per liter (mg/L) based on a grab sample. The existing WWTF at Hotel Moloka'i has incurred several violations in which BOD_5 and TSS parameters have exceeded

the permitted levels indicated in HAR Chapter 11-62-26(b) and where influent flows have periodically exceeded the facility's approved design capacity.

These effluent violations indicated under HAR Chapter 11-62, require corrective actions to upgrade the facility by constructing a modern WWTF capable of meeting the effluent parameters stated in HAR 11-62-26(b) which include:

(1) Biochemical Oxygen Demand (BOD_5)

(E) The BOD_5 in the effluent from a treatment works shall not exceed 60 milligrams per liter based on a grab sample.

(2) Suspended Solids

(E) The suspended solids in the effluent from a treatment works shall not exceed 60 milligrams per liter based on a grab sample.

1.4. Project Schedule and Construction Costs

The total cost of the proposed project is approximately $1,362,600, and construction is anticipated to take approximately 9 months to complete. Hotel Moloka'i anticipates initiating construction of the project upon receipt of all necessary permits and approvals.

1.5. Permits and Approvals Required for the Proposed Action

In addition to the environmental disclosure requirements of Hawai'i Revised Statutes (HRS) Chapter 343, implementation of the Proposed Action would require coordination with state and county agencies for permits or approvals as presented in **Table 1-1**.

Table 1-1. Permits and Approvals Which May Be Required for the Proposed Action

Permit or Approval	Administrative Authority
HRS Chapter 6E, Historic Preservation	Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD)
Special Management Area Use (SM1) Permit	County of Maui Department of Planning
Shoreline Setback Variance (SSV)	County of Maui Department of Planning
Flood Development Permit	County of Maui Department of Planning – Zoning Administration and Enforcement Division
Community Noise Permit/Community Noise Variance	DOH, Indoor and Radiological Health Branch
Grading Permit	County of Maui Department of Public Works

1.6. Anticipated Findings and Determinations

The proposed wastewater facility is not anticipated to have a significant impact on the criteria set forth in HAR, Chapter 200, Title 11, Section 12. As Per HAR Section 11-200, the approving agency, the County of Maui Planning Department, would issue its determination of a Finding of No Significant Impact (FONSI) to the Office of Environmental Quality Control (OEQC) following the public comment period.

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2. Proposed Action and Alternatives

2.1. No Action Alternative

Under the "No Action" alternative, there would be no change from the current situation where the existing wastewater facility does not comply with the DOH's wastewater design standards. Given the age and condition of the existing WWTF, this is essentially a "run to failure" option. If no action is taken, the existing WWTF would further exceed its useful life and continue to produce effluent that fails to meet DOH-WWB discharge standards.

It is expected that a "No Action" alternative has a high risk to cause negative impacts to the nearshore coastal environment, the health and safety of Hotel Molokaʻi users and the surrounding Molokaʻi community, and for hotel and restaurant operations. Hotel Molokaʻi would also potentially face DOH penalties as stated in HAR Chapter 11-62 for violations committed if the WWTF continues to not undertake corrective actions.

2.2. Proposed Action

The AOAO is proposing improvements to upgrade the WWTF at Hotel Molokaʻi to comply with DOH-WWB effluent discharge standards. The proposed WWTF would be a single central treatment unit located within the upper parking lot, to provide as much separation from the hotel units as possible, minimize challenges associated with dewatering, and to provide greater economy of scale as it relates to treatment capacity and maintenance requirements. The centralized WWTF would require: (1) conveyance of the wastewater from the various sources to that central location; and (2) conveyance of electrical power from the existing main panel on the opposite side of the facility to the proposed WWTF site. A total tank volume of 24,000 gallons was calculated as sufficient to meet the DOH-Wastewater Branch's tank capacity requirements for the property.

Project Location and Site Characteristics

As shown in **Figure 2-1**, Hotel Molokaʻi (TMK (2) 5-4-002:001) is a 2.45-acre waterfront property situated on the south shores of Molokaʻi, along the coast at Kamiloloa beach, approximately 1.5 miles east of the town center of Kaunakakai. The project site is quite flat and gently slopes in the *mauka-makai* direction at less than 1% gradient. The property is within the Kamiloloa Ahupuaʻa (a traditional Hawaiian land division), which extends from the leeward coast of Molokaʻi to approximately 250 feet above mean sea level. The property is within the Urban designated zone with Kamehameha V Highway bordering the property to the north, the Kamiloloa beach and ocean to the south, and by single-family residential properties adjacent to the property on the east and west and to the north of the highway. Other adjacent land uses include agricultural designated lands for the Department of Hawaiian Home Lands (DHHL) owned Kamiloloa-Makakupaʻia Homestead community located further north of Kamehameha V Highway, and the Kalokoʻeli native Hawaiian fishpond designated as Conservation land located four parcels to the west of Hotel Molokaʻi. The developed hotel complex includes 13 separate buildings and accommodation units with 59 hotel rooms plus a full bar and restaurant and contains landscaped grasses and trees. Majority of the site is currently used for guest accommodations, hotel parking, and lūʻau facilities.

Site Plan

Location of Proposed WWTF

As shown in **Figure 2-2**, the main units of the proposed WWTF would be located underground within the upper concrete parking lot in order to locate the units as far as possible from the majority of the hotel rooms and place the units at the highest possible elevation on the property, which is clear of any natural features. Located in the parking lot would be two wastewater pretreatment tanks connected to two bioreactor tanks, two clarifier units, and one effluent pump station. Additionally, the WWTF includes the construction of three sewage pump stations and sewage and effluent force mains that connect all these proposed wastewater units on the property. All the proposed wastewater units would be located underground. Excavations to install the proposed WWTF would reach up to approximately 15 feet in depth. See **Appendix D** for the preliminary engineering and design Plans for proposed WWTF.

Figure 2-1. Project Location Map

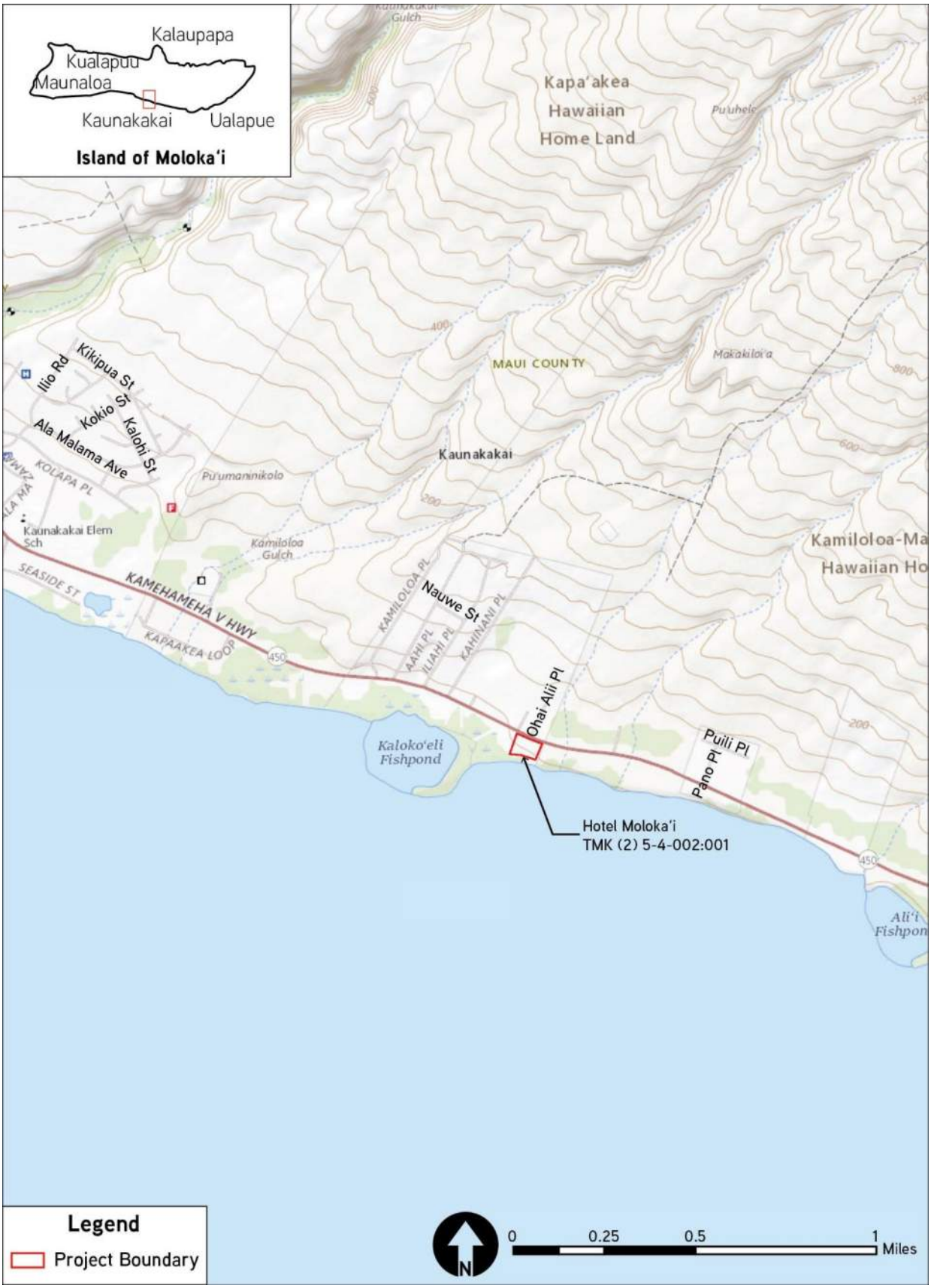
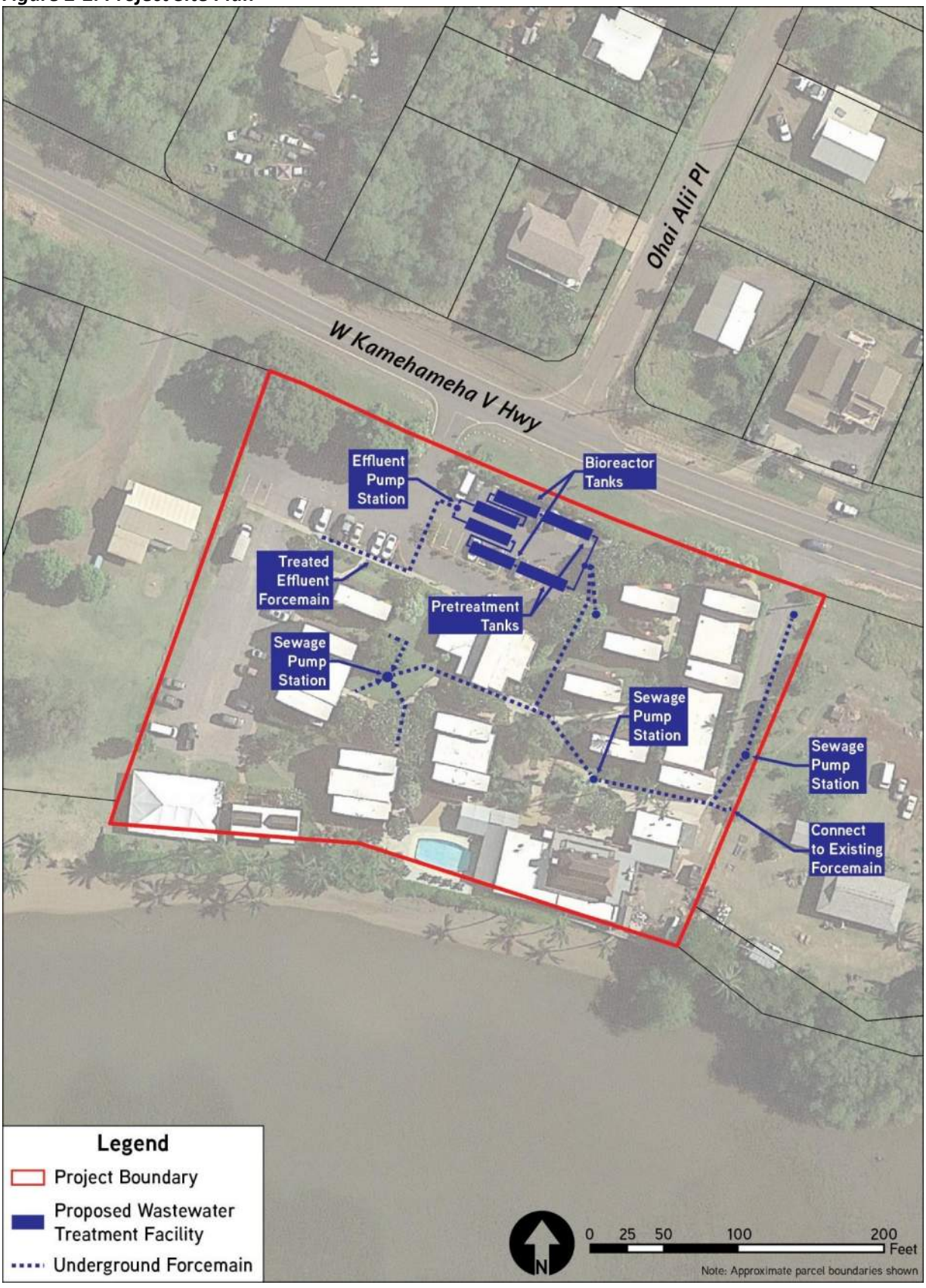


Figure 2-2. Project Site Plan



3. Affected Environmental and Potential Impacts

3.1. Climate and Air Quality

Existing Conditions

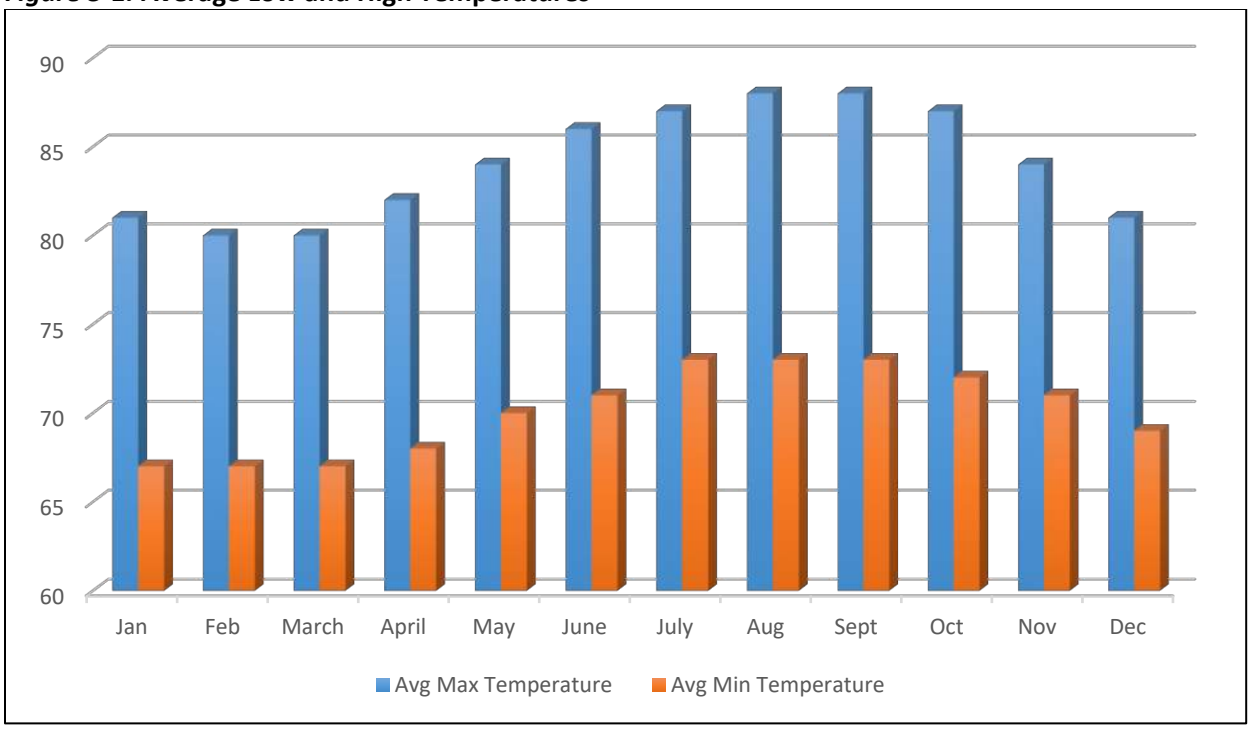
Climate

Hawai'i's tropical location results in uniform weather conditions throughout the year. Climatic conditions on Moloka'i are characterized by mild and consistent year-round temperatures, moderate humidity, and steady northeasterly tradewinds. Variations in Moloka'i's weather are attributed to regional topographic and climatic conditions.

The proposed project is located in Kaunakakai, on the southern slopes of the island of Moloka'i. The topography in the area of Hotel Moloka'i is relatively low and flat. The Kaunakakai area has an average high temperature of 84 degrees Fahrenheit (°F) and an average low temperature of 70.1°F (NOAA, 2019a). As shown in **Figure 3-1,** the warmest months are August and September with average high temperatures of about 88°F. The coolest months are February and March with an average high temperature of 80°F. The Hotel Moloka'i property has an average annual temperature of 74.84°F (UH-Mānoa, 2014).

Kaunakakai is located on the south shore of Moloka'i island and receives approximately 13.77 inches of rain annually. The mean annual rainfall at the Hotel Moloka'i property is approximately 12.05 inches (UH-Mānoa, 2011).

Figure 3-1. **Average Low and High Temperatures**



Source: NOAA

Air Quality

The Clean Air Act of 1972 and its 1990 Amendments and subsequent legislation regulate air emissions from area, stationary, and mobile sources. Both the U.S. Environmental Protection Agency and the State of Hawaiʻi have instituted Ambient Air Quality Standards (AAQS) to maintain air quality in the interest of public health and secondary public welfare.

At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. The Hawaiʻi AAQS are in some cases considerably more stringent than the comparable National Ambient Air Quality Standards (NAAQS). In particular, the Hawaiʻi 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit. **Table 3-1** illustrates the NAAQS and State AAQS and the units of measure (micrograms per cubic meter, $\mu g/m^3$ and parts per million, ppm). The State of Hawaiʻi has been in the attainment area for the last several decades.

Table 3-1. State of Hawaiʻi and National Ambient Air Quality Standards

Pollutant	Units	Averaging Time	Maximum Allowable Concentration		
			National Primary	National Secondary	State of Hawaiʻi
Particulate Matter <10 microns (PM_{10})	$\mu g/m^3$	Annual 24 Hours	- 150[a]	- 150[a]	50 150[b]
Particulate Matter <2.5 microns ($PM_{2.5}$)	$\mu g/m^3$	Annual 24 Hours	12[c] 35[d]	15[c] 35[d]	- -
Sulfur Dioxide (SO_2)	ppm	Annual 24 Hours 3 Hours 1 Hour	- - - 0.075[e]	- - 0.5[b] -	0.03 0.14[b] 0.5[b] -
Nitrogen Dioxide (NO_2)	ppm	Annual 1 Hour	0.053 0.100[f]	0.053 -	0.04 -
Carbon Monoxide (CO)	ppm	8 Hours 1 Hour	9[b] 35[b]	- -	4.4[b] 9[b]
Ozone (O_3)	ppm	8 Hours	0.070[g]	0.070[g]	0.08[g]
Lead	$\mu g/m^3$	3 Months Quarter	0.15[h] 1.5[i]	0.15[h] 1.5[i]	- 1.5[i]
Hydrogen Sulfide	ppb	1 Hour	-	-	25[b]

Notes:
[a]Not to be exceeded more than once per year on average over three years.
[b]Not to be exceeded more than once per year.
[c]Three-year average of the weighted annual arithmetic mean.
[d]98th percentile value averaged over three years.
[e]Three-year average of fourth-highest daily 1-hour maximum.
[f]98th percentile value of the daily 1-hour maximum averaged over three years.
[g]Three-year average of annual fourth-highest daily 8-hour maximum.
[h]Rolling 3-month average.
[i]Quarterly average.
Source: DOH, 2015.

The largest sources of air pollution in the immediate project area are most likely associated with agricultural operations and automobile traffic using the roadway network near the project area. Emissions from these sources consist primarily of particulate matter, carbon monoxide, sulfur dioxide, and nitrogen oxides.

In addition to the NAAQS and the State AAQS, the DOH regulates fugitive dust. HAR Section 11-60.1-33, Fugitive Dust, states that no person shall cause or permit visible fugitive dust to become airborne without taking reasonable precautions, and no person shall cause or permit the discharge of visible fugitive dust beyond the property lot line on which the fugitive dust originates (DOH, 2014). This rule applies to construction projects and would therefore be applicable to the Proposed Action.

Potential Impacts

Construction

Short-term construction-related impacts to air quality are anticipated with the implementation of the Proposed Action. During construction, potential emission sources that may affect air quality at Hotel Moloka'i include the following:

- Diesel and/or gasoline-powered construction equipment and motor vehicles would contribute to additional CO and CO_2 in the air.
- Fugitive dust emissions resulting from the excavation of the project site and the construction of the underground WWTF.

Because levels of criteria pollutants in Hawai'i are consistently below Federal and State AAQS, and because the prevailing trade winds rapidly carry pollutants offshore limiting the effect on receptors, increases in levels of criteria pollutants at the project site from construction activities are not expected to be significant. It is not anticipated that Federal or State AAQS would be exceeded during construction activities.

Under the No Action Alternative, no construction activities would occur, and no additional emission sources would be added; therefore, there would be no impact to the existing air quality in the area.

Operation

The proposed WWTF would ensure that the produced effluent would be at acceptable DOH effluent discharge levels during the operational lifetime of the proposed WWTF. The proposed WWTF would have no impacts to the climate of the project area; however, the WWTF would have a beneficial impact to air quality in the area. By treating effluent and keeping pollutants found in wastewater at acceptable minimal levels, wastewater discharged back into the environment would not release harmful fumes into the air.

Under the No Action Alternative, the existing WWTF would continue their existing operations for a very limited time period until the WWTF exceeds its useful service life and further fails to treat effluent at DOH discharge standards. This may lead to air quality in the project area to be negatively impacted due to the harmful fumes that may arise from the untreated effluent; therefore, affecting the health and safety of Hotel Moloka'i users and the surrounding community.

Minimization and Mitigation Measures

A dust control plan would be developed and implemented to minimize fugitive dust emissions during construction. The plan would include some or more of the following measures:

- Watering or applying dust suppressants at active work areas and project access roads, as needed
- Installing dust screens or wind barriers around construction site
- Cleaning nearby pavements and paved roads affected by construction
- Covering open trucks carrying construction materials
- Limiting areas to be disturbed at any given time
- Providing a buffer zone between the construction site and residential areas
- Requiring construction equipment to have emission control measures

3.2. Noise

Noise is defined as unwanted sound and is one of the most common environmental issues of concern to the public. A number of factors affect sound as it is perceived by the human ear. These include the actual level of the sound (i.e., noise), the frequencies involved, the period of exposure to the noise, and changes or fluctuations in the noise levels during exposure. The accepted unit of measure for noise levels is the decibel (dB).

The State of Hawaiʻi regulates noise exposure in the following statutes and rules:

- HRS, Section 342F – Noise Pollution
- HAR, Section 11-46 – Community Noise Control
- HAR, Section 12-200.1 – Occupational Noise Exposure

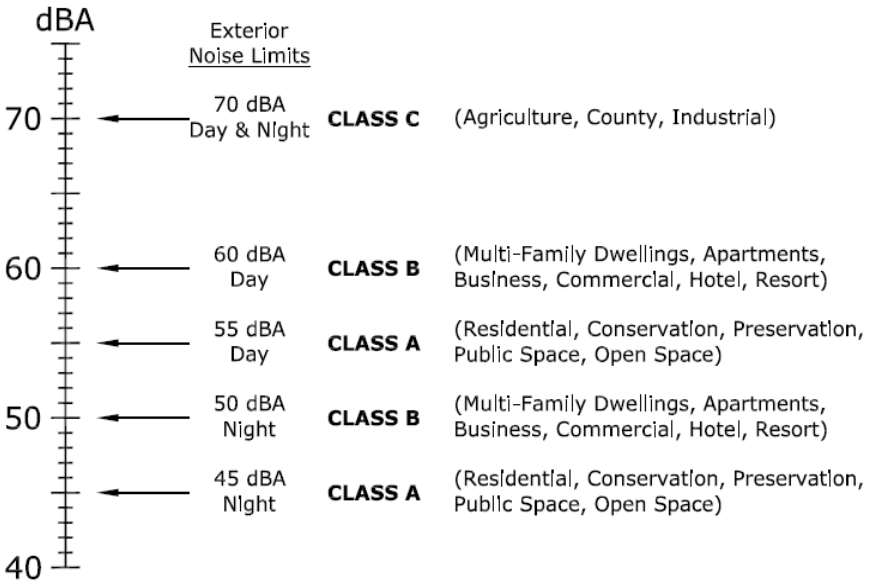
The State of Hawaiʻi Community Noise Control Rule (HAR Chapter 11-46) defines three classes of zoning districts and specifies corresponding maximum permissible sound levels due to stationary noise sources such as air-conditioning units, exhaust systems, generators, compressors, pumps, etc. The Community Noise Control Rule does not address most moving sources, such as vehicular traffic noise, air traffic noise, or rail traffic noise. However, the Community Noise Control Rule does regulate noise related to construction activities, which may not be stationary.

The maximum permissible noise levels are enforced by the DOH for any location at or beyond the property line and shall not be exceeded for more than 10% of the time during any 20-minute period. The specified noise limits which apply are a function of the zoning and time of day as shown in **Figure 3-2**. With respect to mixed zoning districts, the rule specifies that the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level. In determining the maximum permissible sound level, the background noise level is taken into account by the DOH.

The Proposed Action is located in zone H-1, Hotel District, which is in Class B Zoning District.

Figure 3-2. Hawai'i Maximum Permissible Sound Levels for Various Zoning Districts

Zoning District	Day Hours (7 AM to 10 PM)	Night Hours (10 PM to 7 AM)
CLASS A Residential, Conservation, Preservation, Public Space, Open Space	55 dBA (Exterior)	45 dBA (Exterior)
CLASS B Multi-Family Dwellings, Apartments, Business, Commercial, Hotel, Resort	60 dBA (Exterior)	50 dBA (Exterior)
CLASS C Agriculture, Country, Industrial	70 dBA (Exterior)	70 dBA (Exterior)



Existing Noise Environment

Hotel Moloka'i is located in a built environment along Moloka'i's southern shoreline. Existing noise in the area is consistent with that associated with a mixed-use environment, which consists of motorists on adjacent roads, human activities from the surrounding community and hotel guests, hotel and restaurant operations, and the sound of the trees and the ocean. Noise from the current WWTF operations is minimal and limited due to the units being located underground.

As explained in **Section 2.2**, there are several residential dwellings located on both the west and east side of the property and across the street to the north, the heavily traveled Kamehameha V Highway immediately to the north of the property, and the ocean to the south. The nearest commercial area lies about 1.5 miles to the west of Hotel Moloka'i.

Potential Impacts

Construction

Noise generated during construction of the Proposed Action would be short-term and limited to the areas of construction at Hotel Moloka'i. Noise would be generated by construction equipment used to implement the Proposed Action. Construction equipment would include excavators, trucks, and other heavy equipment. Earthmoving equipment (e.g., bulldozers and diesel-powered trucks) would probably be the loudest equipment used during construction. Typical noise emission levels for construction equipment are provided in **Table 3-2.**

Table 3-2. Typical Noise Emission Levels for Construction Equipment

Type of Equipment	Noise Level at 50 feet (dBA)
Air Compressor	81
Backhoe	80
Bulldozer	82
Chain Saw	85
Concrete/Grout Pumps	82
Crawler Service Crane (100-ton)	83
Dump Truck	88
Excavator	85
Front End Loader	80
Generator	81
Jackhammer (compressed air)	85
Lift Booms	85
Pick-Up Truck	55
Power-Actuated Hammer	88
Water Pump	76
Water Truck	55

Source: FHWA, 2015.

No normal-working-hour noise-sensitive uses (i.e., schools and hospitals) are present near the proposed project area. The contractor would ensure that the operation of loud construction equipment would be used during acceptable hours as to not impact the quality of noise for the surrounding neighbors. The contractor would coordinate with the State DOH to ensure that an approved Community Noise Permit is obtained, as may be applicable to the project.

Under the No Action Alternative, no construction activities would occur, and there would be no change to the existing noise environment.

Operation

No significant noise over existing noise levels is anticipated from the proposed WWTF as the facility and associated units would be located underground. The new WWTF equipment units may attenuate some of the existing noise as aging equipment and facilities are replaced. The proposed WWTF would adhere to the maximum permissible sound levels for a Class B Zoning District allowed by the DOH.

Under the No Action Alternative, the existing WWTF would continue its current operation for the remaining lifetime of the facility. Noise produced from the current WWTF would remain as-is.

Minimization and Mitigation Measures

A Community Noise Permit would be obtained from the DOH Indoor and Radiological Health Branch for noise generated during construction activities. Noise generated from construction activities and the use of machinery would be minimized by implementing the following measures:

- Requiring contractors to adhere to state and county noise regulations.
- Construction activities would be conducted on weekdays and in daytime hours.
- In the event that work occurs after normal working hours (i.e., at night or on weekends), or if permissible noise levels are exceeded, appropriate permitting and monitoring, as well as development of administrative and engineering controls, would be employed.

No minimization or mitigation measures are proposed for noise created during WWTF operations since it would be confined underground.

3.3. Geology and Soils

Existing Conditions

The island of Moloka'i was formed by the convergence of the lava flows from the West Moloka'i volcano (also known as Maunaloa), and the East Moloka'i volcano (also known as Wailau), forming the wide isthmus and the elongated island that is seen today (UH-Mānoa, 2013). Hotel Moloka'i in Kaunakakai is situated on the southern slopes of the East Moloka'i volcano. The topography of the proposed WWTF is relatively low and flat. As seen in **Figure 3-3**, geologic formations to the north of the project site consist of the East Moloka'i Volcanic series, while the proposed WWTF is located along a long stretch of alluvium deposits that characterize the south eastern shore of Moloka'i. The rocks erupted by the East Moloka'i Volcano are called the East Moloka'i volcanic series, which are very permeable. These older alluvium deposits in the area date back to the Pleistocene Age. The alluvial deposits are usually weakly consolidated, composed of ochre to coarse and poorly sorted red-brown conglomerates with low permeability (Stearns and Macdonald, 1947). Erosion and deposition of the East Moloka'i volcano led to the formation of these alluvium deposits along the lower slopes of Kaunakakai.

As shown in **Figure 3-4**, soils in the project area are made up of the Kealia silt loam (KMW), which are part of the Kealia Series. The Kealia silt loam is poorly drained and has a high content of salt. Ponding occurs in low areas after heavy rains. When the soil dries, salt crystals accumulate on the surface. The Kealia silt loam range in elevation from near sea level to 260 feet and have 0 to 1 percent slope (USDA-SCS, 1972). Permeability of Kealia silt loam is moderately rapid, runoff is slow to very slow, and the hazard of erosion is slight. The surface layer is dark reddish-brown silt loam about 3 inches thick and below are stratified layers of silt loam, loam, and fine sandy loam. The Kealia series was formed from its parent material, alluvium, over beach sand.

Figure 3-3. Geological Units

Figure 3-4. Soils

Potential Impacts

Construction

The main central treatment units of the proposed WWTF would be installed under the existing upper concrete parking lot, and all other associated wastewater conveyance units would be placed underground as well throughout the property. Effects on geology and soils from construction of the Proposed Action would be limited to ground disturbance activities and the potential for disturbed soils in the construction areas to be eroded and carried away by storm water runoff or wind, and the potential for contaminants to be transmitted to soils. Contaminants in the soil has the potential to be transported during storm water runoff to receiving waters such as the ocean or leak into the groundwater, posing a direct risk to people who come in contact with the contaminants.

Operation

Under the Proposed Action, the existing and aging WWTF would be replaced with a new modern wastewater system which would minimize the potential for leaks into the underlying soil. The proposed WWTF would eliminate the use of injection wells currently used by the existing WWTF and would be better able to treat wastewater at acceptable DOH effluent discharge standards. Therefore, the Proposed Action would minimize effluent leakage and would better preserve the soil quality at the project site.

Under the No Action Alternative, the existing WWTF would continue to produce effluent that fails to meet DOH effluent discharge standards and the potential for effluent leakage into the surrounding soil and transmission to receiving waters during storm water runoff events is increased. Given the age and condition of the existing WWTF, this is essentially a "run to failure" option, increasing the chance that effluent would contaminate the soil. The No Action Alternative would potentially have significant impacts to geology and soil.

Minimization and Mitigation Measures

A National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharge will not be required as construction activities would require less than one acre of disturbance and is not part of a larger common plan of development. A Grading Permit would be obtained from the County of Maui Department of Public Works for excavation of fill and for the temporary storage of soil, gravel, or rock from the project site. Best Management Practices (BMPs) would be described in construction plans to minimize the discharge of pollutants from stormwater before and after construction. The plan would include some of the following measures:

- Installation of Filter Sock Perimeter Controls adjacent and down slope from disturbed areas.
- Good housekeeping shall be utilized to ensure protection of roadways from mud, dirt, and debris.

BMPs would be installed prior to ground disturbing activities and be inspected and maintained throughout the construction period.

3.4. Natural Hazards

Natural Hazards that may occur and affect the proposed project area include floods, tsunami, hurricanes, and earthquakes.

Existing Conditions

Floods

Flood hazard areas identified on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) are identified as Special Flood Hazard Areas, which are areas that will be inundated by a flood event having a 1% chance of being equaled or exceeded in any given year. The 1% annual chance flood is also referred to as the base flood or 100-year flood. The FEMA FIRM flood zone designations include the following:

- *Zone A* – Areas of 1% chance of annual flooding, no base flood elevations determined.
- *Zone AE* – Areas of 1% chance of annual flooding, base flood elevations determined.
- *Zone AH* – Areas of 1% chance of annual shallow flooding, flood depths of 1 to 3 feet, base flood elevations determined.
- *Zone AO* – Areas of 1% chance of annual shallow flooding, flood depths of 1 to 3 feet, average depths determined.
- *Zone V* – Coastal flood zone with velocity hazard (wave action), no base flood elevations determined.
- *Zone VE* – Coastal areas with a 1% or greater chance of annual flooding with increased risk due to storm waves, base flood elevations determined.
- *Zone X* – Areas determined to be outside of the 500-year floodplain.

As shown in **Figure 3-5,** the project site is located between three flood hazard areas, Zones VE, AE, and X. However, the majority of the project components is located within Flood Zone AE. Flood Zone AE represents an area subject to flooding by a 1% annual chance flood (100-year flood). The Base Flood Elevation determined for the Flood Zone AE for the project site is seven feet. Flood Zone AE conditions are primarily due to stormwater runoff in an area with poorly drained soils in a low-lying area and flat terrain.

Tsunami

A tsunami is a series of ocean waves caused by a large, abrupt disturbance of the sea-surface. Tsunamis are most commonly generated by earthquakes in marine or coastal regions, undersea volcanic eruptions, or landslides (NOAA, 2019b). A tsunami can cause widespread destruction of coastal structures and communities. Predicting when and where a tsunami will strike is currently impossible. Therefore, the tsunami evacuation zone has been established throughout the State of Hawaiʻi as areas that should serve as a guideline and should be considered the minimum safe evacuation distance in the event of a tsunami (HIEMA, 2020). As shown in **Figure 3-6,** the project site is located within the tsunami evacuation zone.

Figure 3-5. FEMA Flood Hazard Zones

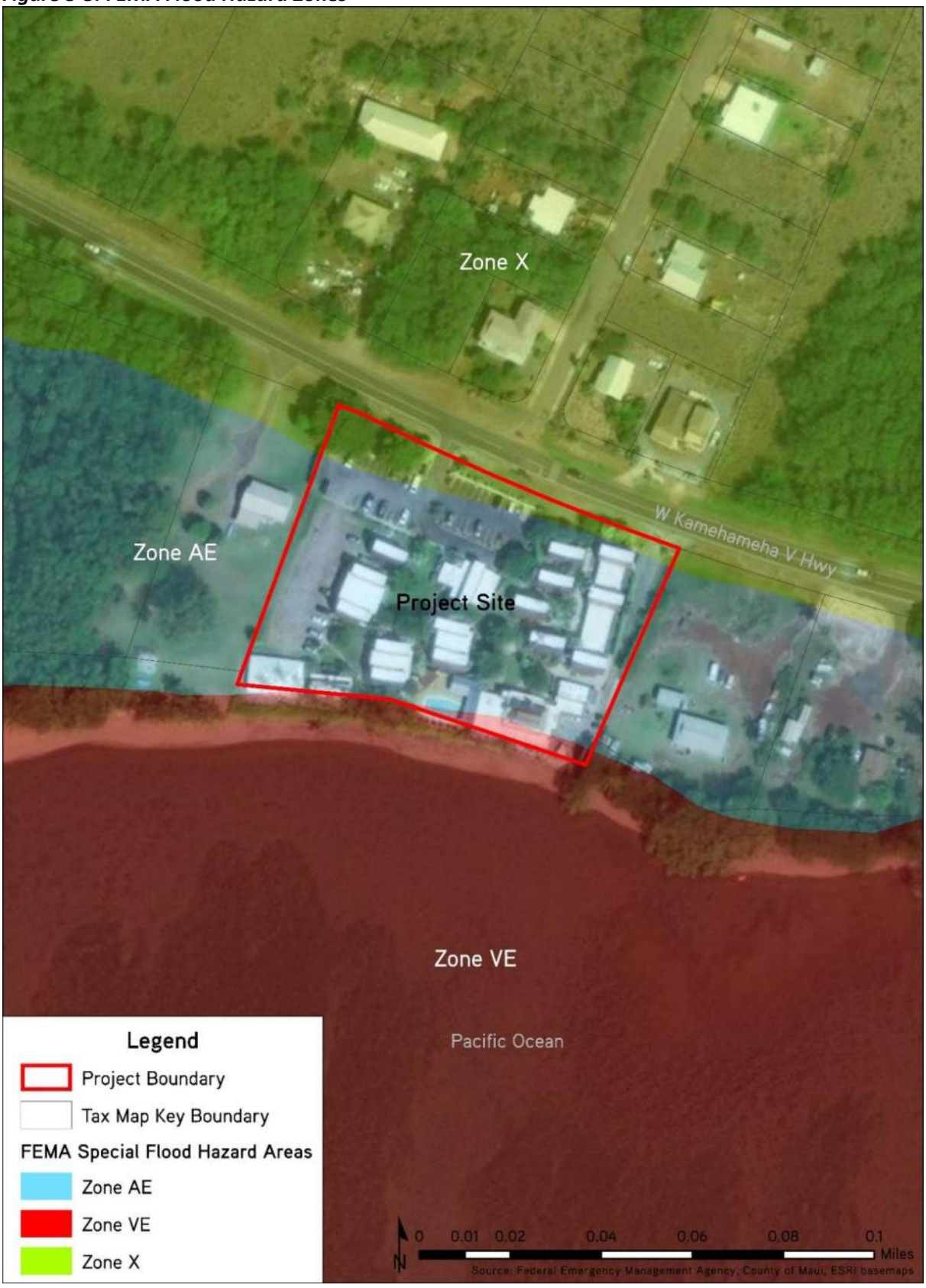


Figure 3-6. Tsunami Evacuation Zone

Hurricanes

A hurricane is a tropical cyclone that occurs over warm, tropical oceans and are one of the most destructive storms on Earth. Hurricanes are characterized by high winds, heavy rains, and storm surges that can destroy lightly built structures and coastal areas. The Hawaiian Islands are seasonally affected by hurricanes in the Pacific Ocean from June to November. Major hurricanes in the past to impact Hawai'i include Hurricane Hiki (1950), Nina (1957), Dot (1959), Iwa (1982), Iniki (1992), Lane (2018) and Olivia (2018) (HNN, 2020). During the 2019 hurricane season, five tropical cyclones in the Central Pacific were recorded, which is near the season average. It is expected that the frequency and intensity of tropical storms in the Pacific Ocean would increase in the future due to warming oceans from global climate change (HNN, 2019).

Earthquakes

Hawai'i is one of the most seismically active states in the United States. Thousands of earthquakes occur every year in the State of Hawai'i due to the eruptive processes with Hawai'i's active volcanoes and the weight of the islands on Earth's underlying crust (USGS, 2017). Most of the earthquakes in Hawai'i today occur on or near the Island of Hawai'i and are associated with active volcanic activity. However, only a few earthquakes are large enough to cause significant damage and impact residents across the State (USGS, 2017).

Volcanic Eruption

As described in **Section 3.3,** the project site is situated on the southern slopes of the East Moloka'i volcano. However, this volcano is considered extinct and its last recorded eruption occurred during the Pleistocene Age between 0.57 and 0.35 million years ago (Smithsonian Institution, 2013). Most of the active volcanic eruptions today occur on or to the south of the Big Island of Hawai'i.

Potential Impacts

Construction

Construction at the project site would not create conditions that would exacerbate natural hazards. The County of Maui's Emergency Management Agency directs and coordinates the County's emergency management operations in the event of a natural disaster to Maui County. Construction personnel would respond to any County of Maui emergency alerts, as appropriate, to ensure safety during construction.

Operation

The Proposed Action would not impact or exacerbate natural hazards. Additionally, the nature of the project would present no barriers or structures to impede tsunami and flood inundation action during the operation of the Proposed Action as the WWTF units would be located underground. The design of the proposed WWTF would be able to withstand any impacts due to flooding and earthquakes.

Minimization and Mitigation Measures

No minimization or mitigation measures are proposed or expected to be required to address tsunami, hurricane, earthquake, or volcanic activities. As mentioned above, the project site is located within Flood Zone AE, a Special Flood Hazard Area; therefore, a Special Flood Hazard Development Permit application would be submitted to the Department of Planning for processing, as applicable. The design and operation

of the proposed WWTF would be able to withstand impacts due to these natural hazards. Construction personnel would respond to any County of Maui emergency alerts, as appropriate, to ensure safety during the short-term construction period.

3.5. Climate Change and Sea Level Rise

Existing Conditions

Climate Change

Climate change is a long-term shift in patterns of temperature, precipitation, humidity, wind, and seasons. Scientific data show that earth's climate has been warming. This warming is mostly attributable to rising levels of carbon dioxide and other greenhouse gases (GHG) generated by human activity. These changes are already impacting Hawai'i through rising sea levels, increasing ocean acidity, changing rainfall patterns, decreasing stream flows, and changing wind and wave patterns.

While the earth's climate experiences natural change and variability over geologic time, the changes that have occurred over the last century due to human input of GHG into the atmosphere are unprecedented (HCCMAC, 2017).

Sea Level Rise Projections

Sea levels are rising at increasing rates due to global warming of the atmosphere and oceans and melting of glaciers and ice sheets (HCCMAC, 2017). These rising seas and the projection for more increased tropical storms in the Pacific Ocean would increase Hawai'i's vulnerability from coastal inundation and erosion. According to the Intergovernmental Panel on Climate Change, if global GHG were to continue at a "business as usual" scenario, it is expected that a 3.2 feet sea level rise could occur by the year 2100 and, to some projections, as early as the year 2060, and would continue to rise in the future. Therefore, the *Hawai'i Sea Level Rise Vulnerability and Adaptation Report (2017)* adopted by the State of Hawai'i suggests that planning for a 3.2 feet sea level rise should happen now (HCCMAC, 2017).

As such, the sea level rise exposure area (SLR-XA) has been developed for the State in order to model and determine the potential future exposure of each island to multiple coastal hazards as a result of sea level rise. The SLR-XA is the footprint of three coastal hazards: passive "bathtub" flooding, annual high wave flooding, and coastal erosion. However, limited historical information and data only allowed for passive "bathtub" flooding to represent the SLR-XA for the island of Moloka'i. As shown in **Figure 3-7,** passive "bathtub" flooding from a 3.2 feet sea level rise scenario is limited to the very lower portion of the project site.

Potential Impacts

Construction

Due to projections that suggest that a 3.2 feet sea level rise scenario will not occur until as early as the year 2060, construction of the Proposed Action is not expected to be impacted. Short-term construction of the proposed WWTF is expected to occur way before the year 2060. However, increased tropical cyclones in the Pacific due to climate change is occurring and may impact construction of the project if construction were to occur during hurricane season. Construction personnel would respond to any County of Maui emergency alerts, as appropriate, to ensure safety during construction.

Figure 3-7. Sea Level Rise Exposure Area (3.2 ft. Scenario)

Operation

According to the limited data currently available for Moloka'i, the Proposed Action is expected to be outside of the SLR-XA. The proposed WWTF is expected to have a project lifetime beyond the year 2060, the earliest year that a 3.2 feet sea level rise scenario could occur according to more recently published highest-end scenario data. However, it is commonly predicted that this sea level rise scenario will occur by the year 2100. The design of the proposed WWTF would be able to withstand coastal inundation during the prime lifetime of the facility.

Minimization and Mitigation Measures

Due to the uncertainty as to exactly when a 3.2 feet sea level rise will occur, either at the mid or latter half of this century, monitoring of sea level rise information would be used to determine mitigation actions needed to prevent sea level rise impacts during the latter lifetime of the facility. These mitigation measures may include elevation or further shoreline setbacks for the WWTF units. The Proposed Action requires immediate corrective actions to upgrade the existing WWTF to DOH effluent discharge standards to prevent near-term negative public health and environmental impacts. Construction personnel would respond to any County of Maui emergency alerts from climate-induced tropical storms that may occur, as appropriate, to ensure safety during the facility's construction.

3.6. Water Resources

Existing Conditions

Groundwater

Groundwater in Hawai'i occurs in volcanic rock aquifers. Groundwater occurs in these aquifers when freshwater from the surface moves downward through lava rocks towards sea level, forming a freshwater lens that floats on saltwater (Stearns and Macdonald, 1947). As shown in **Figure 3-8**, the entire project site is located within the island's southeast aquifer sector in the Kamiloloa Aquifer. The Kamiloloa Aquifer falls between Kaunakakai and Ōnini gulches with a total area of about 17 square miles (Mink and Lau, 1992). Freshwater retrieved from the Kamiloloa Aquifer is currently used for potable drinking water on Moloka'i. The Kamiloloa Aquifer has a sustainable yield of 3 million gallons per day established by the Commission on Water Resource Management. The Proposed Action is not located within a County of Maui Department of Water Supply (DWS) wellhead protection zone.

Surface Waters

The Proposed Action is located completely within the Kamiloloa Watershed (see **Figure 3-9)**. The Kamiloloa Watershed is 7,395 acres (HCRAMP, 2006).

Surface waters located in the Kamiloloa Watershed nearest to the project site include the Makakiloia and One Ali'i stream, and the nearshore coastal habitat of Kamiloloa Beach fronting Hotel Moloka'i (see **Figure 3-10**). Makakiloia Stream is located 0.1 miles to the west of the project site, while the One Ali'i Stream is located 0.28 mile west from the project site. Both streams are estimated to be about 3,500 to 4,000 meters long originating *mauka* along the slopes of the East Moloka'i Volcano. The Makakiloia and One Ali'i stream are both classified as non-perennial streams (i.e., streams that lack surface water flow for most of the year) that empty into the Pacific Ocean. The amount of direct rainfall runoff and base flow that contributes to the total streamflow is dependent on factors such as rainfall amount and intensity,

drainage-basin geology, morphology, size, soils, and land cover (USGS, 2003). Both streams receive minimal flow throughout the year due to the limited amount of direct rainfall runoff this area receives annually.

The 1.5-mile Kamiloloa Beach runs along the south shore of Molokaʻi fronting the Hotel Molokaʻi property. The nearshore ocean bottom is shallow and rocky. Most of the southeast shore of the island including the Kamiloloa region is where large of amounts of land-derived sediment is deposited and re-suspended during infrequent but intense rainfall events (HCRAMP, 2006). A major contributor that has led to this are historically improper land use practices such as deforestation due to plantation agriculture and introduced ungulates that have led to accelerated erosion and increased nutrient input into the coastal environment (HCRAMP, 2006). Due to the lack of geographical shoreline transport of sediment and nutrients along the south shore of Molokaʻi, sediment containing pollutants and contaminants are discharged into the nearshore environment creating the murky environment seen today. This sedimentation has led to many coastal issues particularly the debilitation of coral reefs and impact to subsistence fishing and gathering.

Wetlands

As shown in **Figure 3-10,** the wetlands surrounding the Kalokoʻeli native Hawaiian fishpond are the closest wetlands to the project site identified on the National Wetland Inventory maps (USFWS, 2020). Two types of wetlands are present here – Estuarine and Marine Wetland and Freshwater Forested and Shrub Wetland.

The combined 8.14-acre Freshwater Forested and Shrub Wetland habitat located above the Kalokoʻeli Fishpond is part of the Palustrine System of wetlands which are nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens and all tidal wetlands where salinity due to ocean-derived salts are below 0.5 parts per thousand (USFWS, 2020). This seasonally flooded wetland is characterized by forested woody vegetation that are at least 6-feet tall which are usually persistent for a year or more.

The 5.94-acre Estuarine and Marine Wetland habitat predominantly located along the east edge of the Kalokoʻeli Fishpond is part of the Estuarine System of wetlands (USFWS, 2020). The Estuarine System consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have partly or open access to the ocean, and in where ocean water is occasionally diluted by freshwater runoff from the land. This intertidal wetland is dominated by woody vegetation less than 6-feet tall such as red mangroves (*Rhizophora mangle*) and are regularly flooded due to ocean tides.

Figure 3-8. Freshwater Aquifers

Figure 3-9. Watersheds

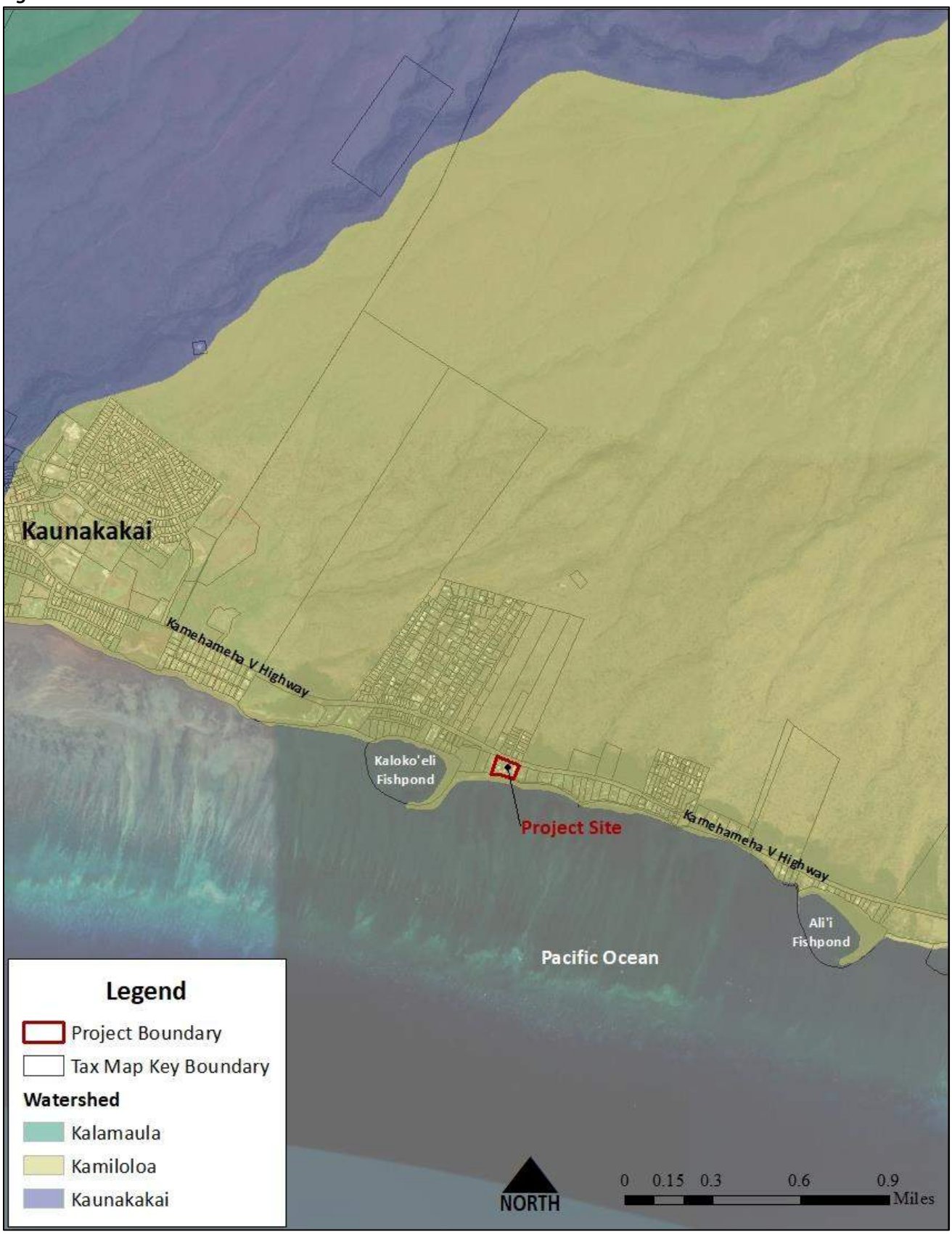
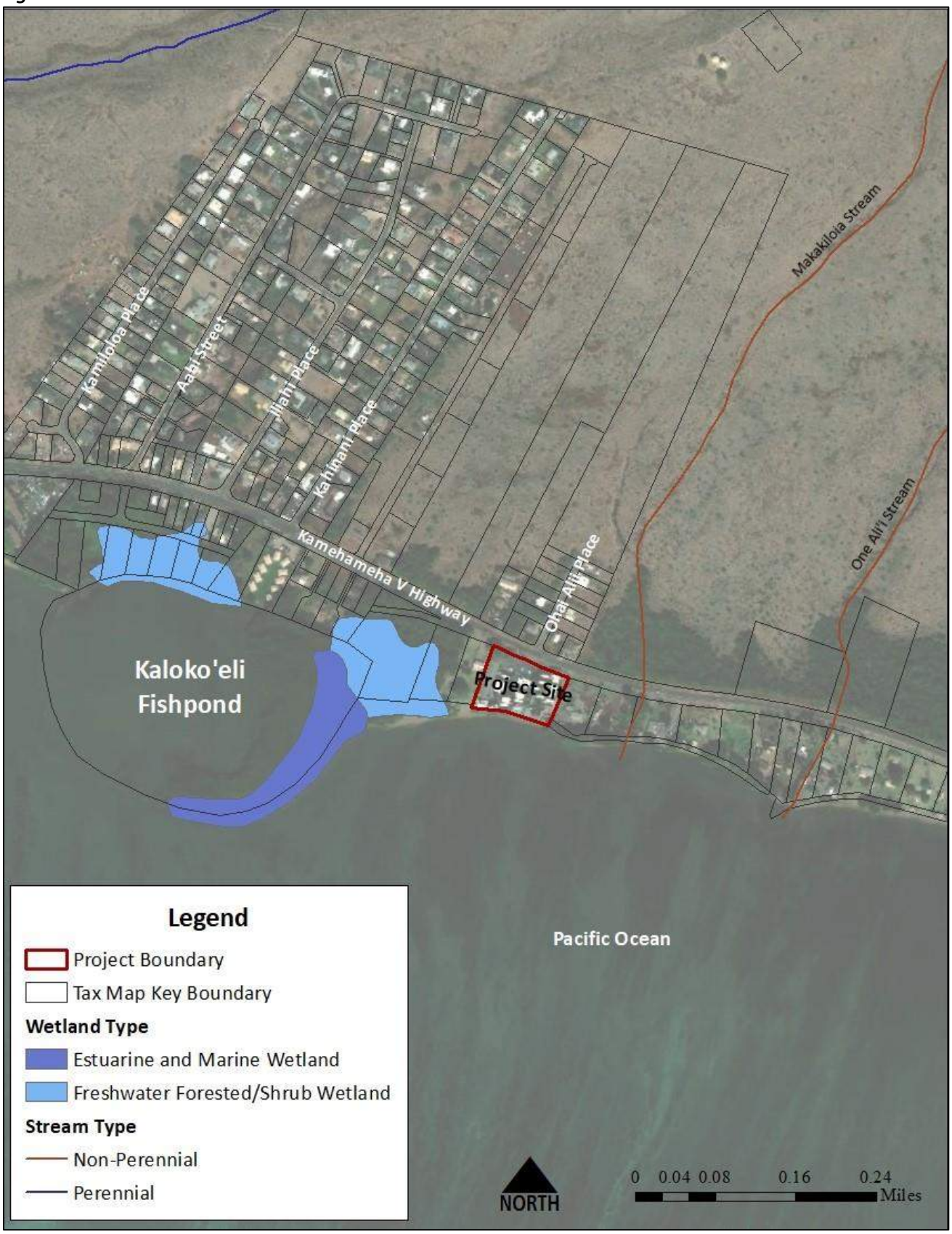


Figure 3-10. Streams and Wetlands



Potential Impacts

Construction

Construction activities and the staging of construction equipment would not take place within the adjacent wetlands, streams, or in the designated shoreline setback area. Construction plans and specifications would include BMPs to minimize erosion and sediment loading at the project site during and after construction activities, as well as measures to contain runoff and fugitive dust on site during construction. Temporary erosion control measures would be implemented during construction to prevent soil loss and to minimize surface runoff into adjacent areas and the nearshore coastal environment which were previously impacted due to sedimentation and runoff from other land uses in the area. Therefore, impacts to water resources during construction of the Proposed Action would be less than significant.

Under the No Action Alternative, no construction would take place; therefore, there would be no change or adverse impacts to adjacent water resources from construction activities.

Operation

The need for the Proposed Action is to take corrective actions to prevent wastewater leakages and contamination of water resources by designing and upgrading the WWTF to a modern facility capable of meeting DOH effluent standards. The Proposed Action would prevent adverse impacts to human and environmental health and safety, including the impact to water resources in the area if a No Action Alternative is taken.

The Proposed Action is not located within a DWS wellhead protection zone and is not anticipated to impact potable water supply. However, the operation of the Proposed Action would greatly improve groundwater quality and prevent contamination to groundwater and the nearshore environment.

Under the No Action Alternative, the existing WWTF would continue its wastewater operations at Hotel Moloka'i. Given the age and condition of the existing WWTF, this is essentially a "run to failure" option. If no action is taken, the existing WWTF would further exceed its useful life and may fail to prevent untreated effluent from leaking and impacting nearby water resources.

Minimization and Mitigation Measures

Mitigation measures are needed during construction of the Proposed Action for the protection of surface water resources adjacent to the project site. Construction plans and specifications would include BMPs to minimize erosion, pollutants, sediment loading, and fugitive dust pollution of water resources near the project site during and after construction activities. The plan would include some or more of the following measures:

- Watering or applying dust suppressants at active work areas and project access roads, as needed
- Installing dust screens or wind barriers around the construction site
- Installation of Filter Sock Perimeter Controls adjacent and down slope from disturbed areas
- Pre-construction vegetative ground cover shall not be disturbed more than 20 calendar days prior to site disturbance
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that would remain unfinished for more than five calendar days
- Permanent soil stabilization with perennial vegetation shall be applied as soon as practical after final grading

- Cleaning nearby pavements and paved roads after construction
- Covering open trucks carrying construction materials and debris
- Limiting areas to be disturbed at any given time

These BMPs would be installed prior to ground disturbing activities and would be inspected and maintained throughout the construction period and until ground cover is fully established

The Proposed Action would require ground disturbance and would be placed underground in a previously disturbed area of the existing upper concrete parking lot of the property. The placement of the proposed WWTF and associated units would not be placed in any environmentally sensitive surface water resources such as DWS well head protection zones, stream riparian buffers, or wetlands. The proposed WWTF would be designed to correct and prevent wastewater leakages to the surrounding environment during the operational lifetime of the Proposed Action.

3.7. Biological Resources

Existing Conditions

Molokaʻi is home to a variety of habitats which include montane wet forests and shrublands, coastal systems (including dunes and grasslands), perennial streams, lave tubes and caves, cliffs, bog communities, and nine offshore islets (DLNR, 2005). The project site is located within an urban zoned area on the east edge of Kaunakakai Town. The coastal plain of Kaunakakai is characterized by low, dry, and marshy land covered with grass and brush.

Flora

The project site contains no known threatened or endangered flora. Much of the State or Federally listed threatened or endangered flora exist at higher elevations along the higher slopes of the East Molokaʻi Volcano. Much of this native vegetation which are located at higher elevations and on the windward side of the East Molokaʻi Volcano are intact due to the relative inaccessibility to humans and animals (USFWS, 2003). A query of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) database also revealed that there are no-federally-listed threated or endangered flora species identified in the project area.

As shown in **Figure 3-11**, most of the southeastern coast of Molokaʻi contains little to no concentration of threatened or endangered flora. Digitized species maps from DLNR's Division of Forestry and Wildlife show that more abundant concentrations of threatened and endangered flora are located at much higher elevations of the East Molokaʻi Volcano where the habitat is greener and receives more rainfall. Additionally, critical habitats on the island established by the U.S. Fish and Wildlife Service (USFWS) are shown to be located at higher elevations as well. Critical Habitat is the term used in the Endangered Species Act to define those areas of habitat that are known to be essential for an endangered or threatened species to recover and that require special management or protection. As shown in **Figure 3-12**, the nearest critical habitat, located to the north of the project site, is a known critical habitat for the native yellow hibiscus (*hibiscus brackenridgei*) and native ʻOhai (*Sesbania tomentosa*).

Figure 3-11. Threatened and Endangered Flora Concentration

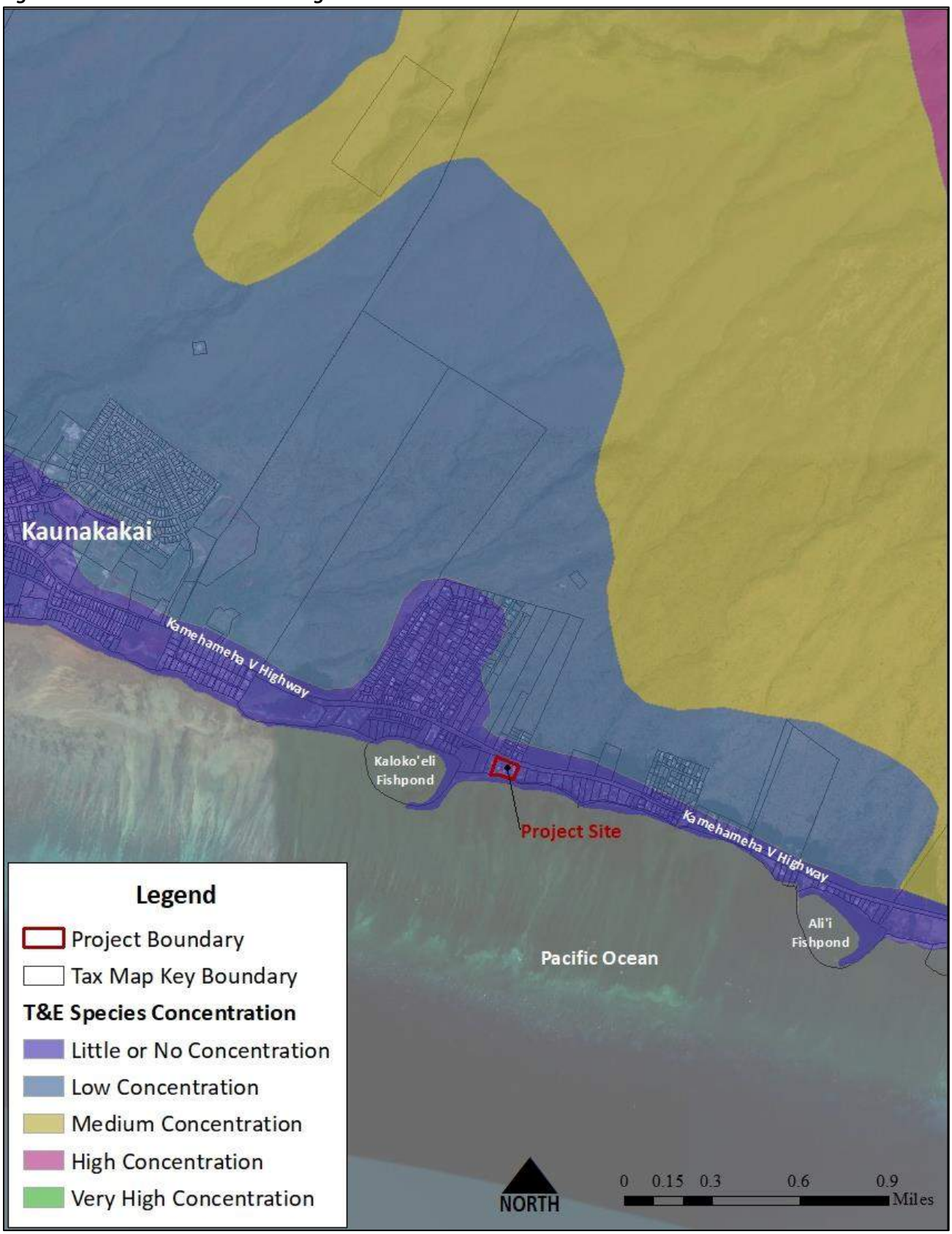
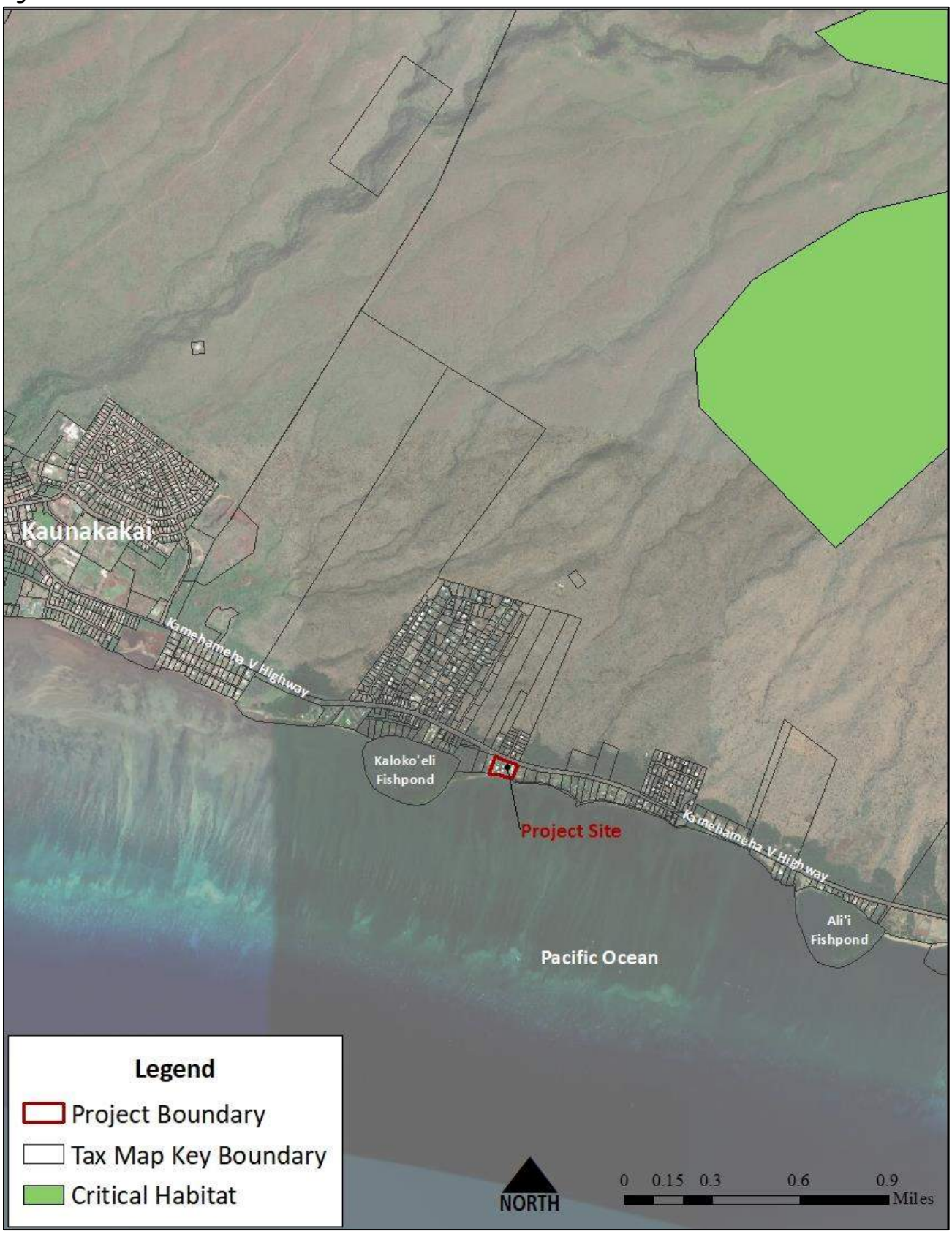


Figure 3-12. Critical Habitats



Most of the flora that exist at the project site is introduced ornamental and landscaped grasses, trees, and shrubs. These florae include palm trees, white plumeria trees (*Plumeria obstusa)*, breadfruit or ʻulu trees (*artocarpus altilis*), ti plants (*cordyline fruticosa*), garden crotons (*codiaeum variegatum*), and red hibiscus (*hibiscus rosa-sinensis*). The shoreline vegetation fronting the Hotel Molokaʻi property is made up of native *naupaka* bushes and coconut palm trees (*cocos nucifera*).

Fauna

A few terrestrial vertebrates listed as threatened or endangered may be present in the vicinity of the project site and may overfly, roost, or pass through the area. These include the endangered Hawaiian hoary bat (*aeorestes semotus*), Hawaiian Stilt (*himantopus mexicanus knudseni*), and Hawaiian Coot (*fulica alai*). Critical habitats and natural area reserves established by the USFWS and DLNR, which are known to provide habitat to most threatened and endangered fauna species on Molokaʻi, are located mostly towards the north of the island and at higher and wetter elevations.

Threatened and Endangered Species

Based on current distribution and habitat requirements, five federally and state-listed species could occur in the survey area. The *Hawai'i Comprehensive Wildlife Conservation Strategy (2005)* identified several threatened or endangered species that may occur in the project area. These species and their potential to occur within the project area are provided in **Table 3-3**.

Table 3-3. Federally and State Listed Threatened and Endangered Species That Could Occur in the Project Area

Species	Status	Potential for Occurrence in the Project Area
Hawaiian Stilt (Aeʻo)	FE, SE	Found in wetland habitats along the south shores of Molokaʻi.
Hawaiian Hoary Bat (ʻŌpeʻapeʻa)	FE, SE	Found from sea level to 2,288 meters elevation
Hawaiian Short-eared Owl (Pueo)	SE	Found from sea level to 2,450 meters elevation
Hawaiian Goose (Nēnē)	FE, SE	Found between sea level and 274 meters elevation at variety of habitats. 74 Nēnē birds are on Molokaʻi.
Hawaiian Coot (ʻAlae keʻokeʻo)	FE, SE	Found at coastal ponds and wetlands along the south shores of Molokaʻi.

FE = Federally Endangered; FT = Federally Threatened, SE = State Endangered, ST = State Threatened
Source: DLNR, 2005.

Potential Impacts

Construction

There are no Federal or State listed threatened or endangered species of plants located in the immediate vicinity of the project site. The construction and staging of construction equipment for the Proposed Action would be located in an already developed part of the property. The proposed WWTF and all associated units would be placed underground. Minimal flora on site are anticipated to be adversely impacted or removed during the excavation and construction of the Proposed Action.

There are no Federal or State listed threated or endangered species of wildlife that are anticipated to inhabit the project area as most of the project site is developed and contains no critical resources needed for the species. Federally or State threatened or endangered coastal wetland bird species that could occur in the vicinity of Project Area may be limited to the wetland habitat around the Kalokoʻeli Fishpond located

100 meters west of the Project area. Endangered moths or other native birds, not listed in **Table 3-3**, that are usually located at higher *mauka* elevations are not anticipated to be present or migrate to the project site as a result of construction. However, impacts to other wildlife, including migratory birds, in the area due to construction activities would be short-term and temporary. The noise and concentrated human activity in the normally disturbed area on the project site would temporarily disrupt wildlife, which is expected to retreat to other areas with less human activity and may return after the project is in operation.

Impacts to the endangered Hawaiian Hoary Bat (ʻōpeʻapeʻa) and the Hawaiian Short-eared Owl (Pueo) are not anticipated as construction of the Proposed Action would not remove trees or vegetation that could serve as habitats for these species.

Operation

The operation of the Proposed Action is not anticipated to impact any flora or wildlife, including threatened or endangered species in the surrounding areas. The Proposed Action is expected to be beneficial to all wildlife especially nearshore or wetland bird species that may frequent the area as the Proposed Action would improve the quality of the natural environment by reducing the potential for wastewater leakages that may impact the adjacent shoreline ecosystem.

Minimization and Mitigation Measures

No trees or vegetation that could serve as habitat for threatened or endangered fauna would be removed during the construction of the proposed WWTF. All construction activities would be conducted during the daytime hours as not to disrupt seabirds or bats passing through the area at night. Work after normal working hours (i.e., at night) that would require artificial illumination for the project would be avoided during the seabird fledging seasons (approximately September through December). Outdoor lights would be shielded and directed downwards to minimize impacts to seabirds, migratory birds, or bats.

In the event that threatened or endangered birds listed in **Table 3-3** were to pass through the immediate project site during construction, all work would immediately be paused and proper protocols would be taken to leave the species undisturbed until these birds are away from the project site.

3.8. Cultural and Historic Resources

Existing Conditions

Cultural Practices and Traditional Uses

A Cultural Impact Assessment (CIA) is being currently conducted by Pacific Consulting Services Inc. to identify cultural resources within the Project area, potential impacts to those resources as a result of the Proposed Action, and recommended measures to mitigate impacts. The findings of the CIA will be incorporated into this section of the Final EA following its completion, and the full CIA will be provided in the Appendix of the Final EA.

The project area is located near the town of Kaunakakai within the Kona moku of Molokaʻi. According to traditional accounts, Kaunakakai was generally referred to as a safe resting place and a preferred canoe landing area for interisland travelers to rest and restock provisions due to the favorable environmental conditions for landing (Folio and Hammatt, 2016). The Kona moku, bounded by the northern mountain ridge and the southern shoreline, encompasses the southeast portion of the island and contains 31 of the

island's 51 ahupuaʻas. The Kona moku translates to "Leeward Division" due to its dry and gently sloped landscape. The Project area is located in the Ahupuaʻa of Kamiloloa ("the tall milo tree") in the Kona Moku. The Native Hawaiian populations who resided within each ahupuaʻa such as in Kamiloloa held certain traditional and customary rights including access rights within and between ahupuaʻa, gathering rights for resources present within an ahupuaʻa for the purpose of practicing Native Hawaiian customs and traditions, burial rights, and religious rights and practices in the ahupuaʻa (MacKenzie, 1991).

During the pre-contact era, Molokaʻi's population base was primarily concentrated on the island's windward and northern coasts. Due to the vast abundance of ocean resources and deep fertile valleys with streams and natural resources, these resources supported the population's traditional lifestyle based on subsistence agriculture. The island was long inhabited by self-sufficient taro farmers and fishermen. In the Kona moku, the population relied on dryland agriculture and near-shore fishing and gathering and had established settlements and habitation sites near these areas. More than 60 traditional Native Hawaiian fishponds had been constructed along the south shore of Molokaʻi, two of which exist today near the Project Area – Kalokoʻeli ("the dug-up pond") and Aliʻi ("chiefs") Fishpond. These fishponds were a place for Native Hawaiian traditional fishing practices and these places became a reliable food source for the population of the surrounding ahupuaʻas due to the arid growing environment of the area (Folio and Hammatt, 2016). In the 18th century, political upheaval overcame Molokaʻi as chiefs and warriors from Oʻahu, Maui, and Hawaiʻi islands invaded the island interchangeably for decades to gain control over the island. It wasn't until 1795 when Kamehameha I invaded Molokaʻi and brought the island under his control as he continued on his quest to unify the Hawaiian Islands. In the 1830s, Christian missionaries and western influence arrived on Molokaʻi, which led to an increase in newly purchased private lands for predominantly plantation and cattle ranches on the leeward side of Molokaʻi. As a result, the increased dependence on a plantation and ranching-based economy coupled with the environmental impact to land resources and nearshore waters due to grazing and runoff led to the population's decreased reliance on traditional subsistence agriculture and the destruction of many traditional Native Hawaiian fishponds that once historically characterized the southern shore of Molokaʻi. As the population increased on the leeward side of Molokaʻi, the town of Kaunakakai grew to a major political and commercial center on the island in the 1930s. As the population grew, the purchase and development of private lands near Kaunakakai increased, leading to the development of lands once used as original habitation sites.

Archaeological and Historic Resources

The project site is located in an area that has been previously disturbed by the construction of the hotel facility. The main units of the proposed WWTF would be located underground beneath the existing upper concrete parking lot of the project site.

In accordance with HRS Chapter 6E and HAR Title 13, Chapter 275, an archaeological literature review that addresses historical, cultural, and archaeological background was conducted in order to evaluate any potential effect on historic properties in the project area, and to recommend any mitigation measures, if warranted. The *Archaeological Literature Review in Support of Hotel Molokaʻi Wastewater Treatment System Improvements* (ALR) (PCSI, 2020) was completed in May 2020 and identifies a few archaeological and historic resources near the project area (see **Appendix B**). An archaeological field investigation was not conducted as part of the ALR. The methodology for the ALR included examining maps, historical and archival documents, and previous archaeological studies in the vicinity of the project area. Relevant historical maps were georeferenced to determine where traditional Hawaiian or historic features may fall

within the project area. The information obtained from these sources was synthesized to present data findings and to evaluate the potential for archaeological and cultural resources in the project area.

The following archaeological and historic resources were identified in the vicinity of the project area:

- **Traditional and Post-Contact History and Land Use** – Background research indicates that coastal Kamiloloa was utilized for dryland agriculture and habitation in the pre-Contact and early post-Contact periods. After the Great Mahele, Kamiloloa Homesteads was established when land was sold fee simple as Land Grants. Kamiloloa Homesteads formerly included the current project area, which was Grant 6128 to Joseph N. Uahinui. Based on historic period newspaper articles, cattle grazing occurred in Kamiloloa, likely in the uplands. Modern development of the property occurred in 1966, when Frank Roberts designed and built Hotel Moloka'i.
- **Archaeological Findings** – Previous archaeological sites are limited, and to date, no human burials have been recorded within 500 meters from the project site. The nearest archaeological sites include the following:
    - *Kaloko'ele Fishpond* – Located 100 meters west of the project area, is the nearest known archaeological site to the project site, which is designated as State Inventory of Historic Places (SIHP) Site 50-60-03-000133. This is a *loko kuapā,* which is a fishpond with a *mākāhā* (sluice gate) that allows ocean water to circulate. In 1901, the traditional fishpond was recorded as covering 27.6 acres (Cobb 1902:429). Later the pond was described by Dunn (1957) as measuring 32 acres and that about 600 feet of the pond wall had been washed away and scattered on the shallow ocean floor by the action of wave and tide. Along the east wall of the pond and along the inshore line there is a growth of mangroves and 'ākulikuli [Dunn n.d. in Summers 1971:88].
    - *SIHP 50-60-03-00925* – Mapping and data recovery at the site determined this site contains a habilitation complex comprising 35 structures representative of both habitations and camps (Tuggle 1993:238). No human burials were recorded at the site.
    - *SIHP 50-60-03-00945* – The site was split due to varying preservation recommendations: 945A (a temple) and 945b (habitations and other structures). Recorded are four sets of habitation structures, a temple, and numerous special activity or special function structures. The site was determined to be a late occupation due to the rugged terrain making it not an ideal settlement location. The site was attributed to a possible "late period population expansion, with settlement moving up from the heavily populated coastal plain" or the establishment of communities for specialized purposes, such as support of the fishpond system (either initial construction or subsequent maintenance), increasing the local subsistence base in support of military action, or post-contact activities such as sandalwood collection" (Tuggle 1993:175).
    - *SIHP 50-60-03-00946* – This site is described as a cattle enclosure and is determined that the site is not significant.
    - *SIHP 50-60-03-00982* – This site consists of five structures covering dune and rocky slopes. Test excavations did not reveal an occupation layer and the function of the structures was undetermined (Tuggle 1993:189-191).

Based on background research and previous archaeological findings in the vicinity that were assessed in the ALR, there is a potential for traditional Hawaiian historic properties and human burials in the project area. Historic period subsurface cultural deposits are possible, which may yield evidence of nineteenth or early twentieth century land use (e.g., evidence of habitation or structures associated with Grant 6128).

Potential Impacts

Cultural Practices and Traditional Uses

A review of cultural-historical background material of the area shows that there is a historical and cultural significant use and value of the traditional Native Hawaiian fishponds along the south shore of Moloka‘i, including the Kaloko‘eli and Ali‘i Fishpond near the project area. The closest traditional fishpond, Kaloko‘eli Fishpond, is 100 meters west of the project site. There are no known cultural or traditional practices identified or being conducted on the Hotel Moloka‘i property.

The construction and operation of the proposed WWTF is not anticipated to adversely impact traditional fishing or gathering rights and practices at the Kaloko‘eli Fishpond or along the southern coast of Moloka‘i. Access to the ocean for fishing and gathering rights will be preserved during the construction and operation of the proposed WWTF. All construction activities and the staging of construction equipment would take place on the project site. The operation of the proposed WWTF would beneficially impact the nearshore water quality of the area and the Kaloko‘eli Fishpond as the modern facility would prevent wastewater leakages and contamination that would harm the coastal environment.

Under the No Action Alternative, no construction activities would occur; however, if a No Action Alternative is taken, potential leakages from the existing WWTF would have a significant impact on the access to traditional fishing and gathering sites as the coastal environment would be harmful to fishermen and their food sources.

Archaeological and Historic Resources

According to the ALR, it is currently unknown to what extent previous construction in the project area has disturbed subsurface soils, including to what depth fill deposits extend. However, there are no known SIHP sites or human burials in the project area. The nearest known archaeological and historic sites inventoried by the SIHP are located between 100 to 500 meters away from the project site, none of which contain human burial sites. The project site has been previously disturbed by the construction and development of the more than 50-year-old Hotel Moloka‘i property.

The construction and operation of the proposed WWTF is not anticipated to adversely impact any of the known archaeological or historic sites near the project area. All construction activities and the staging of construction equipment would take place on the project site. The operation of the proposed WWTF would beneficially impact the nearshore water quality of the Kaloko‘ele Fishpond (SIHP 50-60-03-000133) as the modern facility would prevent wastewater leakages and the contamination of the coastal environment.

Under the No Action Alternative, no construction activities would occur; therefore, there would be no impact to cultural or archaeological sites from construction. However, if a No Action Alternative is taken, the environmental impact to the historic Kaloko‘eli Fishpond may be impacted as there is a potential for wastewater to leak from the existing WWTF and impact the fishpond’s nearshore ecosystem.

Minimization and Mitigation Measures

Based on the preliminary cultural findings, mitigation measures are needed during construction of the Proposed Action for the protection of traditional fishing areas along the coast and adjacent to the project site. Construction plans and specifications would include BMPs to minimize erosion, pollutants, sediment loading, and fugitive dust pollution from impacting nearshore waters during and after construction activities. The plan would include some or more of the following measures:

- Watering or applying dust suppressants at active work areas and project access roads, as needed
- Installing dust screens or wind barriers around the construction site
- Installation of Filter Sock Perimeter Controls adjacent and down slope from disturbed areas
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that would remain unfinished for more than five calendar days
- Permanent soil stabilization with perennial vegetation shall be applied as soon as practical after final grading
- Cleaning nearby pavements and paved roads after construction
- Covering open trucks carrying construction materials and debris
- Limiting areas to be disturbed at any given time

These BMPs would be installed prior to ground disturbing activities and would be inspected and maintained throughout the construction period and until ground cover is fully established. A complete list of recommended mitigation measures will be included in the Final EA after the completion of the CIA.

Based on the historical, cultural, and archaeological findings conducted through the ALR, it is recommended that archaeological monitoring be conducted through a DLNR State Historic Preservation Division (SHPD) approved Archaeological Monitoring Plan. Archaeological monitoring is recommended to ascertain the subsurface conditions in the project area and to determine the presence or absence of subsurface historic properties related to past land use documented in the ALR. Additionally, approval would be obtained from SHPD for the project's compliance with HRS Chapter 6E Historic Preservation.

In the event that archaeological sites or human burials are discovered at the project site, all construction excavation and activities would immediately cease, and proper protocols would be conducted to leave the remains undisturbed and in place. SHPD and the County Police Department would be contacted and reported as required by law under HRS, Chapter 6E.

3.9. Socioeconomics

Existing Socioeconomic Characteristics

In 2018, there were 167,295 residents in the County of Maui, which includes the islands of Maui, Molokaʻi, Lānaʻi, and Kahoʻolawe (DBEDT, 2018a). The *de facto* population (i.e., all persons, including residents and visitors) present in Maui County in 2016 at a given point in time was approximately 218,059 people. The overall resident population of Maui County has increased by 0.5% between 2000 to 2018 and is expected to increase to 211,500 residents by 2045 (DBEDT, 2018b).

In 2010, the resident population of the island of Molokaʻi was 7,345 residents. The resident population of Molokaʻi between 2013-2017, as determined by the *2018 State Department of Business, Economic Development, and Tourism (DBEDT) Data Book*, was 6,980 residents, representing a slight decrease in the

population over the years. However according to the 2014 County of Maui *Socio-Economic Forecast Report*, the resident population on Moloka'i is forecasted to have a 1% annual increase, adding about 2,500 residents to the island by the year 2040. The ratio of visitors to residents on Moloka'i in 2010 was approximately 1 to 12, and is expected to remain relatively unchanged through 2035 (COM, 2018).

Moloka'i's current resident population live in approximately 2,401 households between 2013-2017, with an average household size of 2.90 persons. Kaunakakai is the largest population and commercial town on the island of Moloka'i. In Kaunakakai, the resident population between 2013-2017 was 3,494 residents living in 1,199 households, representing an average household size of 2.91 persons. Kaunakakai contains a lesser amount of vacant residential lands located *mauka* of the existing town compared to the island's other towns. Housing needs in Kaunakakai town would be fulfilled through infill development opportunities (COM, 2018).

Over the years, Moloka'i has had the highest unemployment rate compared to the rest of the State and Maui County. In 2014, the unemployment rate for Moloka'i was at 14.2% versus the statewide average of 4.7% (COM, 2018). However, the island boasts the largest percentage of government workers at 28% compared to 21% statewide, and the largest employed in the agricultural, forestry and fishing industries at 7%, which created a significant subsistence economy for the island compared to the rest of the State (COM, 2018). However, the island also had the lowest percentage of private-sector employees at 63% compared to 72% statewide, and the lowest employed in the visitor and tourism industry at 15% of workers compared to Maui at 24% and 16% statewide (COM, 2018).

Potential Impacts

Construction

Construction of the Proposed Action at Hotel Moloka'i would not increase the population of the area or the island. Construction activities would result in a short-term positive economic impact for Moloka'i due to construction-related spending and employment. Additionally, direct construction activities would result in an overall short-term positive economic impact by stimulating indirect and induced employment within other industries on Moloka'i.

Operation

Operation of the Proposed Action would not increase the population of the area or the island. The Proposed Action is not expected to directly increase visitors to Moloka'i or to Hotel Moloka'i, however, improvements to the wastewater system at the hotel's property would be economically beneficial in the long-term to Hotel Moloka'i, as the island's only hotel, by potentially reducing costs that it may incur if a No Action Alternative is taken. Adverse economic impacts are not anticipated with project implementation.

The No Action Alternative would have no beneficial impact on the area's demographics or economic conditions. However, given the condition of the existing WWTF, it is a potential adverse cost to environmental and human health and safety which would impact other economic industries on the island, such as Moloka'i's nearshore subsistence fishing economy.

Minimization and Mitigation Measures

No minimization or mitigation measures are proposed or expected to be required for the construction or operation of the Proposed Action.

3.10. Public Facilities and Services

Existing Facilities and Services

Parks and Recreational Areas

The Duke Maliu Regional Park and One Aliʻi Park are located over 1.5 miles away and are the closest parks to the project site. Both parks are accessed via Kamehameha V Highway. Activities at Duke Maliu Regional Park include the use of baseball and softball fields for little leagues and softball events, and day-use of a multi-purpose sports field. Activities at One Aliʻi Park are generally limited to camping, picnic pavilion use, and access for ocean swimming. Both park areas include basic facilities, such as public restrooms, water fountains, parking, and trash cans.

The shoreline area fronting the Hotel Molokaʻi property is made up of a narrow stretch of sandy beach that extends along the southern coastline. This shoreline area is primarily used for basic beach and nearshore recreational activities such as walking along the beach, sunbathing, and swimming.

Utilities

Water and electrical utility service to the project site is provided by the County of Maui DWS and Maui Electric Company (MECO). Existing DWS and MECO infrastructure lines run along Kamehameha V Highway fronting Hotel Molokaʻi. Two DWS water lines, one 6-inch line and one 12-inch water line, connect to a 2-inch water meter on the project site. MECO overhead electric power lines and poles are located across Kamehameha V Highway and connect to an electric transformer pole located at the northeast corner of the project site that conveys electricity to the property.

Solid and Hazardous Waste

Except for remote areas, solid waste collection service is provided by the County of Maui once weekly. The Molokaʻi Integrated Solid Waste Management Facility in Nāʻiwa is the sole municipal waste disposal facility serving the whole island. The landfill facility also provides waste diversion, metal facilities, and recycling services. Commercial waste from private collection companies is also disposed of at the landfill.

Fire, Police, Emergency Medical Service

Police and fire services are provided by the County of Maui and their stations are both located less than 2 miles from the project site.

Police services on Molokaʻi are provided by the Maui County Police Department. The Molokaʻi police headquarters is located in the Mitchell Pauole Community Center in Kaunakakai town.

The Maui County Department of Fire and Public Safety provides emergency and non-emergency services for Molokaʻi. The Fire Department maintains stations in Kaunakakai and Hoʻolehua, with a substation in Pūkoʻo.

The Molokaʻi General Hospital, which is operated by the Queen's Health System, is the only major medical and emergency services facility on the island. The hospital treats all ranges of medical injuries, illnesses, and life-threatening emergencies, and can arrange for transfer to other Queen's Health System hospitals located on Oʻahu for a higher level of care when necessary. The Molokaʻi General Hospital is located about 2.2 miles from the project site.

Potential Impacts

Construction

All construction associated with the Proposed Action is limited to the Hotel Moloka'i property and is not anticipated to have adverse impacts on existing parks, recreational facilities, public utility infrastructure and services, solid and hazardous waste facilities or services, and fire, police, medical facilities or services on Moloka'i.

As discussed in **Sections 3.1** and **3.6**, BMPs would be used at the project site to prevent stormwater and fugitive dust pollution to the shoreline recreation area fronting Hotel Moloka'i. Additionally, construction debris would be disposed of at the Moloka'i Integrated Solid Waste Management Facility in Nā'iwa. Construction debris would include the existing WWTF and associated wastewater units to be replaced. All construction debris would be tested to make a hazardous waste determination in accordance with HAR, Section 11-262-11, and would be disposed of properly. The transportation and staging of all construction material and debris would be managed to prevent impacts to surrounding water and electrical utility lines.

It is not anticipated that construction activities would impact police, fire, or emergency medical services (EMS) on Moloka'i. If an incident were to occur during construction that requires emergency attention, it is anticipated that the level of demand could be met by all these emergency and public safety services.

Under the No Action Alternative, no construction would take place; therefore, there would be no change or adverse impacts to existing services or operations.

Operation

As described in **Section 3.6**, the operation of the Proposed Action would be designed to prevent stormwater runoff to the shoreline recreation area fronting Hotel Moloka'i. The operation of the proposed WWTF would not require a higher demand of water and electric currently used at the property or prevent or limit water and electrical services from servicing existing uses on the island. Additionally, the operation of the proposed WWTF would not increase nor prevent fire, police, or EMS services from normal operations on Moloka'i. The purpose of the Proposed Action is to ensure that wastewater services at Hotel Moloka'i would continue to meet the DOH regulatory discharge standards.

Under a No Action Alternative, the existing WWTF operations at Hotel Moloka'i would continue and may lead to adverse impacts to the beach recreation area fronting the property due to potential effluent leakages.

Minimization and Mitigation Measures

BMPs would be used at the project site to minimize stormwater and fugitive dust pollution to the beach recreation area fronting the property. Additionally, BMPs would be utilized to ensure the proper transportation and disposal of construction debris obtained from the construction site. These BMPs include some or more of the following measures:

- Watering or applying dust suppressants at active work areas and project access roads, as needed
- Installing dust screens or wind barriers around construction site
- Installation of Filter Sock Perimeter Controls adjacent and down slope from disturbed areas
- Cleaning nearby pavements and paved roads affected by construction
- Covering open trucks carrying construction materials and debris

- Testing of potentially hazardous waste and properly disposing of the waste
- Limiting areas to be disturbed at any given time

No minimization or mitigation measures are proposed or expected to be required for police, fire, and EMS services or operations.

3.11. Transportation and Traffic

Existing Transportation System

The only vehicular access to the Hotel Moloka'i project site is from Kamehameha V Highway (Hawai'i State Route 450). Kamehameha V Highway is the only vehicular access route along the whole southeastern coast of Moloka'i from the town center of Kaunakakai at Kaunakakai Place towards Hālawa Valley in the northeast of the island. Kamehameha V Highway becomes Mauna Loa Highway (Route 460) heading west from Kaunakakai Place, which extends towards the western portion of the island.

Potential Impacts

Construction

The Proposed Action involves the replacement and construction of a new WWTF at Hotel Moloka'i. Therefore, there would be a temporary and slight increase in vehicular traffic along Kamehameha V Highway as construction materials are brought to the staging area and project site, as well as during the transport of construction debris. This slight increase in traffic also includes the transport of construction workers to and from the project site during allowable construction hours. These impacts would be minimal and temporary during the short-term duration of construction.

Under the No Action Alternative, no construction activities would occur and normal traffic along Kamehameha V Highway would remain as is.

Operation

During the operation of the proposed WWTF, no increase in traffic is expected. The WWTF would be unmanned and would only be looked at during routine inspection. After construction of the Proposed Action, pre-existing traffic conditions in the vicinity of Hotel Moloka'i along Kamehameha V Highway would return.

The No Action Alternative would continue the existing wastewater operations at Hotel Moloka'i and would have no impact to the existing transportation system.

Minimization and Mitigation Measures

No traffic control plan is expected to be required as the Proposed Action would not take place in the public right-of-way. The contractor would be required to adhere to State and County public roadway safety rules during the transportation of construction materials and debris. These public roadway safety rules include proper use of reflectors and signals during transportation, adhering to all roadway signals and speed limits, and ensuring that the maximum legal dimensions for size and weight are met for the movement of vehicles and loads on public roadways. In cases where oversized or overweight vehicles and loads are to be transported, proper permits would be obtained from the Hawai'i State Department of Transportation. All construction materials and debris loads are to be properly secured during transportation to prevent dust, debris, or other adverse conditions from affecting public roadways. Additionally, the transportation

of construction material and equipment to and from the project site would take place during acceptable traffic periods to minimize potential disruption to local traffic.

3.12. Visual Resources

Existing Scenic and Visual Environment

Hotel Moloka'i, the island's oldest and longest continually running hotel, consists of 13 separate buildings and accommodation units that are no taller than 30-feet, the maximum allowable building height allowed on Moloka'i. The topography at the project site is relatively low and flat. The existing scenic and visual resources surrounding the project site include the shoreline and Pacific Ocean view plane, the *mauka* landscape, and the Kaloko'eli native Hawaiian fishpond. The existing WWTF and associated wastewater and electrical conveyance units are all located underground throughout the project site. Existing WWTF units can only be seen if manhole covers are removed during the routine inspection of those units.

Potential Impacts

Construction

During construction, there would be minimal impacts to the existing scenic and visual environment. Short-term construction impacts to the scenic and visual environment include the staging of construction equipment and utilization of fugitive dust screens at the project site; however, those impacts would be temporary. Construction equipment and BMPs used at the project site would be shorter than existing buildings on the property. Additionally, *mauka* to *makai* public easements for beach access and lateral access along the beach would both be preserved during the construction of the Proposed Action.

Under a No Action Alternative, no construction activities would take place, therefore, there would be no impact to the existing scenic environment.

Operation

The buildings at Hotel Moloka'i have been in existence for over 50 years and are part of the historical landscape of the area. The proposed WWTF would be located underground throughout the project site and the main units would be located beneath the existing upper concrete parking lot, ensuring that the Proposed Action would be compatible with the existing scenic and visual environment. The Proposed Action would not alter natural landforms or significantly block existing views to and along the shoreline. Public shoreline access to and along the shoreline would be preserved during the operation of the Proposed Action. The Proposed Action would allow for continued operations at Hotel Moloka'i and, therefore, the natural character of the area is maintained. Scenic and open space resources for the coastal zone at the project site would be preserved.

The No Action Alternative would continue the existing WWTF operations at Hotel Moloka'i. There would be no impact to visual resources.

Minimization and Mitigation Measures

There would be no impact to the existing visual and scenic environment during the operation of the Proposed Action. Therefore, no minimization or mitigation measures are proposed or warranted during operation. During construction, the staging of temporary construction equipment and BMPs used at the project site would be placed in locations where it would not obstruct the existing scenic environment.

3.13. Secondary and Cumulative Impacts

The State of Hawaiʻi OEQC define secondary impacts as those effects which are caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable. These may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. The Proposed Action would not involve a change in land use, population, or natural resources and ecosystems. Therefore, the Proposed Action would not have any foreseeable secondary impacts.

Cumulative impacts are defined as those impacts on the environment that 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. These impacts result from individually minor but collectively significant actions taking place over a period of time. The Proposed Action involves the replacement of the existing non-compliant WWTF which would be beneficial for public and environmental health in the long-term. All potential impacts from the construction of the Proposed Action would be short-term and temporary. Therefore, the Proposed Action would not have cumulative impacts.

3.14. Irretrievable and Irreversible Commitment of Resources

The Proposed Action involves the design and construction of a replacement WWTF at Hotel Molokaʻi in order to bring the facility up to DOH compliance standards. Implementation of the Proposed Action would not result in irretrievable and irreversible commitment of resources other than financial resources, fuel, and other consumable construction materials.

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4. Relationship to Land Use Plans and Policies

4.1. State of Hawaiʻi Planning Documents

The Hawaiʻi State Plan

The Hawaiʻi State Plan, HRS Chapter 226, is a long-range comprehensive plan that provides goals, objectives, policies, priority guidelines, and implementation mechanisms for all activities, programs, and decisions made by the State. The Hawaiʻi State Plan provides a basis for determining priorities and allocating limited resources, improving coordination between government agencies at all levels, and serves as a guide for future long-range development of the State. The following objectives and policies are applicable to the Proposed Action:

Section 226-8. *Objectives and policies for the economy – visitor industry*

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

(b) To achieve the visitor industry objective, it shall be the policy of this State to:

(2) Ensure that visitor industry activities are in keeping the social, economic, and physical needs and aspirations of Hawaii's people.

(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.

(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.

Discussion: The purpose of the Proposed Action is to construct a new WWTF that ensures that Hotel Molokaʻi's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). The Proposed Action would ensure that all Hotel Molokaʻi visitor facilities and activities on property would be serviced by a modern well-designed WWTF that is sensitive to and would help preserve the social, cultural, physical, environmental, and public health needs of the visitor industry and the surrounding community.

Section 226-11. *Objectives and policies for the physical environment – land-based, shoreline, and marine resources.*

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

(1) Prudent use of Hawai`i's land-based, shoreline, and marine resources.

(2) Effective protection of Hawai`i's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

(1) Exercise an overall conservation ethic in the use of Hawai`i's natural resources.

(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.

(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.

(8) Pursue compatible relationships among activities, facilities, and natural resources.

(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Discussion: The project property is situated on the south shore of Moloka'i, along Kamilolao beach; however, the Proposed Action would be located within the upper concrete parking lot, which is clear of any natural features and furthest away from the shoreline. Due to its remote location, Hotel Moloka'i maintains its own WWTF to handle wastewater generated by its hotel and restaurant operations. The Proposed Action is designed to contain and treat effluent generated from the property without negatively impacting the natural and environmental resources in the shoreline area. The WWTF would be placed underground under the existing concrete parking lot in order to be compatible with the physical attributes of the area without impacting the marine and shoreline area. Therefore, the Proposed Action is consistent with the objectives and policies for land-based, shoreline, and marine resources.

Section 226-12. *Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.*

(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/ historical resources.

(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:

(1) Promote the preservation and restoration of significant natural and historic resources.

(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.

(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.

(5) Encourage the design of developments and activities that complement the natural beauty of the islands.

Discussion: The Proposed Action would ensure that Hotel Moloka'i would not produce wastewater effluent that fails to meet DOH-WWB effluent parameters stated in HAR 11-62-26(b) and would not adversely impact the quality of the natural environment. The proposed WWTF would promote for the preservation of significant natural and historic resources in the surrounding area and those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage such as the traditional native Hawaiian fishponds located along the coastline. The design and placement of the proposed WWTF underground would ensure that natural views and vistas are preserved and complement the natural beauty of the area. Therefore, the Proposed Action is consistent with the objectives and policies for scenic, natural beauty, and historic resources.

Section 226-13. *Objectives and policies for the physical environment – land, air, and water quality.*

(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:

(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water quality.

(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:

(2) Promote the proper management of Hawaii's land and water resources.

(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.

(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.

(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

(7) Encourage urban developments in close proximity to existing services and facilities.

Discussion: The purpose of the Proposed Action is to construct a new WWTF that ensures that Hotel Moloka'i's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). The Proposed Action and the design of the WWTF would allow for long-term wastewater operations that promotes for the protection of land, air, and water resource quality.

Under the Proposed Action, the use of injection wells by the existing and aging WWTF would be replaced with a new modern wastewater system which would minimize the potential for leaks that would impact land resources such as the quality of the underlying soil. The Proposed Action does not consist of removal of trees or natural features of the area.

The Proposed Action would have a beneficial impact to air quality in the area by treating effluent and keeping pollutants found in wastewater at acceptable minimal levels ensuring that wastewater discharged back into the environment would not release harmful fumes into the air.

Additionally, the Proposed Action would prevent the contamination of water resources by the construction of a modern WWTF capable of properly treating and disposing of wastewater effluent that meets DOH-WWB effluent standards. The Proposed Action would prevent water resource contamination that would have adverse impacts to human and environmental health. The location and placement of the proposed WWTF would be placed in a developed area of the property, outside of the shoreline setback area, and not within areas that would adversely impact water resources. Therefore, the Proposed Action is consistent with the objectives and policies for land, air, and water quality.

Section 226-14. *Objectives and policies for facility systems – in general.*

(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

(b) To achieve general facility systems objective, it shall be the policy of this State to:

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

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

Discussion: The Proposed Action would eliminate the use of injection wells currently used by the existing WWTF and the proposed WWTF would be better able to treat wastewater at acceptable DOH effluent discharge standards. The Proposed Action fulfills for the achievement of the objective of waste disposal that "supports the statewide social, economic, and physical objectives". Additionally, the design of the proposed WWTF would ensure that Hotel Moloka'i's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b) allowing for the promotion of "prudent use of resources". Therefore, the Proposed Action is consistent with the objectives and policies for facility systems in general.

Section 226-15. *Objectives and policies for facility systems – solid and liquid wastes.*

(a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:

(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.

(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.

(b) To achieve solid and liquid waste objectives, it shall be the policy of the State to:

(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.

Discussion: The purpose of the Proposed Action is to construct a new WWTF to ensure that the property's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). The Proposed Action would maintain the "basic public health and sanitation standards relating the treatment and disposal of solid and liquid wastes" and ensures that an "efficient and economical treatment and disposal" of wastewater is employed at Hotel Moloka'i. Therefore, the Proposed Action is consistent with the objectives and policies in the Hawai'i State Plan for facility systems for solid and liquid wastes.

Section 226-20. *Objectives and policies for socio-cultural advancement – health.*

(a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:

(1) Fulfillment of basic individual health needs of the general public.

(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.

(b) To achieve the health objectives, it shall be the policy of this State to:

(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.

Discussion: The Proposed Action is the corrective action taken by Hotel Moloka'i in response to a DOH-WWB directive to replace and construct a modern WWTF that ensures that Hotel Moloka'i's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). Operation of the Proposed Action would ensure that wastewater discharge would not adversely impact environmental resources and public health. The Proposed Action would maintain "sanitary and environmentally healthful conditions" for the surrounding community. Therefore, the Proposed Action is consistent with the objectives and policies for socio-cultural advancement in health.

Section 226-108. *Sustainability.*

Priority guidelines and principles to promote sustainability shall include:

(1) Encouraging balanced economic, social, community, and environmental priorities.

(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State.

(4) Encouraging respect for the host culture.

(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.

Discussion: The Proposed Action would have immediate beneficial impacts for community public health and environmental priorities by constructing a new WWTF that is in compliance with DOH-WWB effluent discharge standards and reducing the potential for wastewater leakages that would impact land, air, and water resources in the future, therefore, "meeting the needs of the present without compromising the needs of future generations". The Proposed Action would take immediate corrective actions to prevent near-term negative public health and environmental impacts to natural and cultural resources in the area. The placement of the proposed WWTF beneath an already developed area of the property encourages "planning that respects and promotes living within the natural resources and limits of the State". Therefore, the Proposed Action is consistent with the objective and policies in the Hawaiʻi State Plan for sustainability.

Section 226-109. *Climate change adaptation priority guidelines.*

Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:

(1) Ensure that Hawai'i's people are educated, informed, and aware of the impacts climate change may have on their communities;

(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;

(3) Invest in continued monitoring and research of Hawai'i's climate and the impacts of climate change on the State;

(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;

(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;

(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;

(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;

(8) Foster cross-jurisdictional collaboration between County, State, and Federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;

(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and

(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.

Discussion: The purpose of the Proposed Action is to construct a modern WWTF capable of meeting DOH-WWB effluent discharge standards. The placement and operation of the Proposed Action would encourage for the preservation of natural landscape features in the area that have the "inherent capacity to avoid, minimize, and mitigate the impacts of climate change". The operation of the Proposed Action would not directly contribute greenhouse gas emissions that lead to global climate change.

According to the limited data currently available for Molokaʻi, the Proposed Action is expected to be outside of the SLR-XA. The design of the proposed WWTF would be able to withstand coastal inundation during the prime lifetime of the facility. However, due to the uncertainty as to exactly when a 3.2 feet sea level rise will occur, either at the mid or latter half of this century, monitoring of sea level rise information would be used to determine resilient adaptation and mitigation actions needed to prevent sea level rise impacts during the latter lifetime of the facility, therefore, encouraging the "continual collection, evaluation, and integration of new information and strategies" in wastewater planning for the property. These mitigation measures may include elevation or further shoreline setbacks for the WWTF units. The Proposed Action requires immediate corrective actions to upgrade the existing WWTF to DOH effluent discharge standards to prevent near-term negative public health and environmental impacts.

The following themes of Part I of the Hawaiʻi State Plan are not applicable to the Proposed Action for the following reasons:

- ***Section 226-5.*** *Objective and policies for population:* The Proposed Action would not result in population growth.
- ***Section 226-6.*** *Objectives and policies for the economy – in general:* The Proposed Action would not result in increased and diversified employment opportunities other than the temporary construction jobs.
- ***Section 226-7****: Objectives and policies for the economy – agriculture:* The Proposed Action does not involve the agriculture industry.
- ***Section 226-9.*** *Objective and policies for the economy – federal expenditures:* The Proposed Action does not include the use of federal funds.
- ***Section 226-10.*** *Objective and policies for the economy – potential growth and innovative activities:* The Proposed Action does not include opportunities for investment or employment growth.
- ***Section 226-10.5.*** *Objective and policies for the economy – information industry:* The Proposed Action does not include nor impact telecommunications or information technology resources.
- ***Section 226-16.*** *Objective and policies for facility systems – water:* The Proposed Action does not include development of new water facilities.

- ***Section 226-17.*** *Objectives and policies for facility systems – transportation.* The Proposed Action does not include new transportation facilities.
- ***Section 226-18.*** *Objective and policies for facility systems – energy.* The Proposed Action does not include new energy facilities.
- ***Section 226-18.5.*** *Objective and policies for facility systems – telecommunications.* The Proposed Action does not include new telecommunication facilities.
- ***Section 226-19.*** *Objectives and policies for socio-cultural advancement – housing.* The Proposed Action does not include new housing.
- ***Section 226-21.*** *Objectives and policies for socio-cultural advancement – education.* The Proposed Action does not include educational programs or facilities.
- ***Section 226-22.*** *Objectives and policies for socio-cultural advancement – social services.* The Proposed Action does not include social services or activities.
- ***Section 226-23.*** *Objectives and policies for socio-cultural advancement – leisure.* The Proposed Action does not include leisure services or activities.
- ***Section 226-24.*** *Objectives and policies for socio-cultural advancement – individual rights and personal well-being.* The Proposed Action would have no impact to personal rights and personal well-being.
- ***Section 226-25.*** *Objectives and policies for socio-cultural advancement – culture.* The Proposed Action would have no impacts to cultural identities, traditions, values, customs, and arts of Hawaiʻi's people.
- ***Section 226-26.*** *Objectives and policies for socio-cultural advancement – public safety.* The Proposed Action would have no impact on public safety programs.
- ***Section 226-27.*** *Objectives and policies for sociocultural advancement – government.* The Proposed Action would have no impact on government services.

The themes of Part II of the Hawaiʻi State Plan are not applicable to the Proposed Action since the Proposed Action does not involve the preparation of planning documents.

The following themes of Part III of the Hawaiʻi State Plan are not applicable to the Proposed Action for the following reasons:

- ***Section 226-104.*** *Population growth and land resources priority guidelines.* The Proposed Action would not result in population growth nor any change in land use.
- ***Section 226-105.*** *Crime and criminal justice.* The Proposed Action does not involve the criminal justice system.
- ***Section 226-106.*** *Affordable housing.* The Proposed Action would not provide housing.
- ***Section 226-107.*** *Quality education.* The Proposed Action would have no impact on education opportunities or facilities.
- ***Section 226-10.*** *Quality education.* The Proposed Action would have no impact on education opportunities or facilities.

State Land Use Law

Hawaiʻi was the first of the fifty States to have a State Land Use Law (originally adopted in 1961) and a State Plan. Today, Hawaiʻi remains unique among the fifty states with respect to the extent of control that the state exercises in land use regulation. The state has four classifications: Agricultural, Conservation, Rural, and Urban. The State Land Use Law HRS, Chapter 205 initially set the boundaries for the four classifications. Changes to boundaries for areas less than 15 acres can be approved at the County level; larger modifications must be approved by the Land Use Commission by super-majority vote. Counties have full control over the use of urban-designated area. Only the Land Use Commission can take land out of the Conservation District.

Discussion: As shown in **Figure 4-1,** the location of the project site and Proposed Action is designated as Urban. The Urban land use district is characterized by "city-like" concentrations of people, structures, and services and permits any lot uses permitted by the respective county. Therefore, the Proposed Action is compliant with the Urban designated zone set by the State Land Use Law.

Department of Hawaiian Home Lands Molokaʻi Island Plan

The *Department of Hawaiian Home Lands Molokaʻi Island Plan* (DHHL, 2005), hereafter referred to as the Molokaʻi Island Plan, provides a comprehensive assessment of DHHL properties on Molokaʻi. The Molokaʻi Island Plan is a 20-year visioning document that designate areas for residential, agricultural, pastoral homestead as well as conservation, special district, community use, and income generating uses. The goal of the Molokaʻi Island Plan is to assess and recommend for the future use of the 25,899 acres of DHHL lands on the island.

The DHHL Lands of Kapaʻakea, Kamiloloa, and Makakupaʻia are situated along the southern portion of Molokaʻi and located to the north of the project site. These DHHL lands comprise of 5,218 acres and contain 74 existing residential beneficiary lots to date. The Molokaʻi Island Plan has identified numerous fishponds located along the south shore of the island, including the Kalokoʻeli Fishpond located several hundred yards away from the project site, as a rich cultural resource for DHHL beneficiaries in the area for dietary and subsistence activities.

Discussion: The Proposed Action does not conflict with the recommended future uses for DHHL's Kapaʻakea, Kamiloloa, and Makakupaʻia lands as outlined in the Molokaʻi Island Plan. BMPs would be utilized during construction to address short-term noise, air, and traffic impacts that may impact existing DHHL beneficiaries living in close proximity to the project site. The Proposed Action would benefit the health and well-being of existing DHHL beneficiaries and for future DHHL beneficiaries living in the area as the proposed WWTF would ensure that the quality and health of natural and cultural nearshore resources would be maintained. The Proposed Action would ensure that the property's effluent is in continual compliance with DOH regulatory effluent discharge standards. Therefore, the Proposed Action is compliant with the goals set forth in the DHHL Molokaʻi Island Plan.

Figure 4-1. State Land Use Districts

4.2. County of Maui Planning Documents

The Maui County General Plan 2030

The *Maui County General Plan 2030* is the county wide policy plan for the long-range comprehensive development for the County of Maui, which includes the islands of Maui, Moloka'i, Lanai, and Kaho'olawe. The Countywide Policy Plan acts as an over-arching values statement and provides a policy framework for the Maui Island Plan and Community Plans. The General Plan provides broad goals, objectives, policies, and implementing actions that portray the desired direction for the County's future to the year 2030. The Proposed Action is consistent with the following applicable goals and policies of the Maui County General Plan 2030:

A. Protect the Natural Environment

GOAL: Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.

OBJECTIVE 1: Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.

POLICIES:

B. Preserve and reestablish indigenous and endemic species' habitats and their connectivity.

C. Restore and protect forests, wetlands, watersheds, and stream flows, and guard against wildfires, flooding, and erosion.

F. Protect the natural state and integrity of unique terrain, values natural environments and geological features.

G. Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources.

OBJECTIVE 2: Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.

POLICIES:

A. Protect and restore nearshore reef environments and water quality.

B. Protect marine resources and valued wildlife.

E. Mitigate the negative effects of upland uses on coastal wetlands, marine life, and coral reefs.

F. Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.

I. Restore watersheds and aquifer-recharge areas to healthy and productive status, and increase public knowledge about the importance of watershed stewardship, water conservation, and groundwater protection.

IMPLEMENTING ACTIONS: Develop regulations to minimize runoff of pollutants into nearshore waters and reduce nonpoint and point source pollution.

OBJECTIVE 3. Improve the stewardship of the natural environment.

POLICIES:

A. Preserve and protect natural resources with significant scenic, economic, cultural, environmental, or recreational value.

C. Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.

D. Improve efforts to mitigate and plan for the impact of natural disasters, human-influenced emergencies, and global warming.

F. Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.

H. Provide public access to beaches and shorelines for recreational and cultural purposes where appropriate.

I. Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.

Discussion: The purpose of the Proposed Action is to correct effluent violations by constructing a new WWTF that ensure that the property's wastewater effluent is in continual compliance with DOH-WWB permit requirements. The Proposed Action would maintain basic public health and sanitation standards relating the treatment and disposal of solid and liquid wastes and ensures that an efficient and economical treatment and disposal of wastewater is employed at Hotel Moloka'i to minimize negative impacts to public health and to the surrounding natural environment. The purpose of the Proposed Action and the placement of the Proposed Action beneath existing developed areas of the property and away from the shoreline area allows for the protection and "stewardship of the natural environment" while improving the "opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations". The Proposed Action would "improve the quality of environmentally sensitive, locally valued natural resources and native ecology" on Moloka'i by taking corrective actions to prevent wastewater discharge and pollutants to impact surrounding land and nearshore water ecosystems. Therefore, the Proposed Action is consistent with the goal, objectives, and policies in the Maui County General Plan 2030 for the protection of the natural environment.

B. Preserve Local Cultures and Traditions

GOAL: Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents' multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.

OBJECTIVE 1: Perpetuate the Hawaiian culture as a vital force in the lives of residents.

POLICIES:

A. Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices.

B. Prohibit inappropriate development of cultural lands and sites that are important for traditional Hawaiian cultural practices, and establish mandates for the special protection of these lands in perpetuity.

C. Promote the use of ahupua`a and moku management practices.

F. Recognize and preserve the unique natural and cultural characteristics of each ahupua`a or district.

H. Ensure the protection of Native Hawaiian rights.

OBJECTIVE 4: Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.

POLICIES:

D. Protect and preserve lands that are culturally or historically significant.

Discussion: The placement and operation of the Proposed Action would have a beneficial impact for cultural resources and practices in the area such as the Kalokoʻeli fishpond and many other traditional native Hawaiian fishpond and nearshore subsistence fishing and gathering areas along the south shore of Molokaʻi. The Proposed Action takes a ahupuaʻa management approach by properly containing, treating and disposing of effluent wastewater in order to minimize impacts to *makai* and nearshore environments such as reefs. The placement of the Proposed Action beneath the upper parking lot would allow for the continued "access to the mountain, ocean, and island resources for traditional Hawaiian cultural practices" and for the preservation of culturally significant sites for current and future generations. Therefore, the Proposed Action is consistent with the goal, objectives, and policies in the Maui County General Plan 2030 for the preservation of local cultures and traditions.

F. Strengthen the Local Economy

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

OBJECTIVE 3: Support a visitor industry that respects the resident culture and the environment.

POLICIES:

D. Support the renovation and enhancement of existing visitor facilities.

M. Promote water conservation, beach conservation, and open-space conservation in areas providing services for visitors.

Discussion: The operation of the Proposed Action is not expected to directly increase visitors to Molokaʻi or to Hotel Molokaʻi, however, improvements to the wastewater system at the hotel's property would be economically beneficial in the long-term to Hotel Molokaʻi by protecting the environment in which the visitor industry benefits from. The Proposed Action would contribute for the conservation of open-space, beach, and the nearshore environment by the proper treatment and disposal of wastewater according to DOH-WWB effluent discharge standards. This would benefit other economies on Molokaʻi as well such as local fishing and other visitor industries which rely on quality beach and coastal environments. Construction activities would result in a short-term positive economic impact for Molokaʻi due to construction-related spending and employment. Additionally, direct construction activities would result in an overall short-term positive economic impact by stimulating indirect and induced employment within

other industries on Moloka'i. Therefore, the Proposed Action is consistent with the goal, objectives, and policies in the Maui County General Plan 2030 for strengthening the local economy.

I. Improve Physical Infrastructure

GOAL: Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.

OBJECTIVE 2: Improve waste-disposal practices and systems to be efficient, safe, and as environmentally sound as possible.

POLICIES:

E. Pursue improvements and upgrades to existing wastewater and solid-waste systems consistent with current and future plans and County's Capital Improvement Program.

IMPLEMENTING ACTION E: Phase out the use of injection wells.

OBJECTIVE 4: Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

POLICIES:

C. Utilize appropriate infrastructure technologies in the appropriate locations.

E. Support catchment systems and on-site wastewater treatment in rural areas and aggregated water and wastewater systems in urban areas if they are appropriately located.

OBJECTIVE 5: Improve the planning and management of infrastructure systems.

POLICIES:

C. Improve coordination among infrastructure providers and planning agencies to minimize construction impacts.

F. Discourage the development of critical infrastructure systems within hazard zones and the tsunami-inundation zone to the extent practical.

H. Ensure that basic infrastructure needs can be met during a disaster.

J. Promote the undergrounding of utility and other distribution lines for health, safety, and aesthetic reasons.

Discussion: The Proposed Action directly improves the wastewater system at Hotel Moloka'i by constructing a WWTF that utilizes clean and sustainable technologies to properly treat and dispose of wastewater generated from the property. The Proposed Action would replace the existing WWTF in order to ensure that wastewater effluent produced from the site would be in continued compliance with DOH-WWB wastewater discharge standards; thereby, improving "waste-disposal practices and systems to be efficient, safe, and environmentally sound as possible". Additionally, the Proposed Action would "phase out the use of injection wells" currently used by the existing WWTF and appropriately places the proposed WWTF and its associated wastewater infrastructure units underground in a developed area of the property for "health, safety, and aesthetic reasons". The whole Hotel Moloka'i property is located within tsunami and flood hazards zones, however, the placement of the Proposed Action on the property would

not exacerbate the tsunami and flood hazards and still ensure that basic wastewater infrastructure needs can be met during a disaster. Therefore, the Proposed Action is consistent with the goal, objectives, and policies in the Maui County General Plan 2030 for improving physical infrastructure.

J. Promote Sustainable Land Use and Growth Management

GOAL: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.

OBJECTIVE 1: Improve land use management and implement a directed-growth strategy.

POLICIES:

G. Restrict development in areas that are prone to natural hazards, disasters, or sea-level rise.

H. Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.

K. Preserve the public's rights of access to and continuous lateral access along all shorelines.

OBJECTIVE 4: Improve and increase efficiency in land use planning and management.

POLICIES:

A. Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses.

B. Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.

Discussion: The Proposed Action manages growth and land in a sustainable manner by placing the proposed WWTF underground in an already developed area of the property, which would better preserve community character, lifestyles, economies, natural assets, and public rights of access to and along the shoreline. The Proposed Action would not alter natural land forms or be placed in any undeveloped areas. The Proposed Action would not significantly exceed the existing service capacity for the property and would not need additional public infrastructure or utilities to service the WWTF, thereby, protecting natural, scenic, shoreline, and cultural resources. The need for the Proposed Action is to take immediate corrective actions to properly treat and dispose of wastewater effluent at DOH-WWB effluent discharge standards, and is consistent with the goal, objectives, and policies of the Maui County General Plan 2030 for promoting sustainable land use and growth management.

The following goals of the *County of Maui General Plan 2030 Countywide Policy Plan* are not applicable to the Proposed Action for the following reasons:

- **C. Improve Education:** The Proposed Action does not involve improving education and providing educational opportunities.
- **D. Strengthen Social and Healthcare Services:** The Proposed Action does not involve strengthening social and healthcare services.
- **E. Expand Housing Opportunities for Residents:** The Proposed Action does not involve the provision or expansion of housing opportunities for residents.
- **G. Improve Parks and Public Facilities:** The Proposed Action does not involve improvements for parks and public facilities.

- **H. Diversity Transportation Options:** The Proposed Action does not involve the provision or diversification of transportation options.
- **K. Strive for Good Governance:** The Proposed Action does not involve the provision of government services.

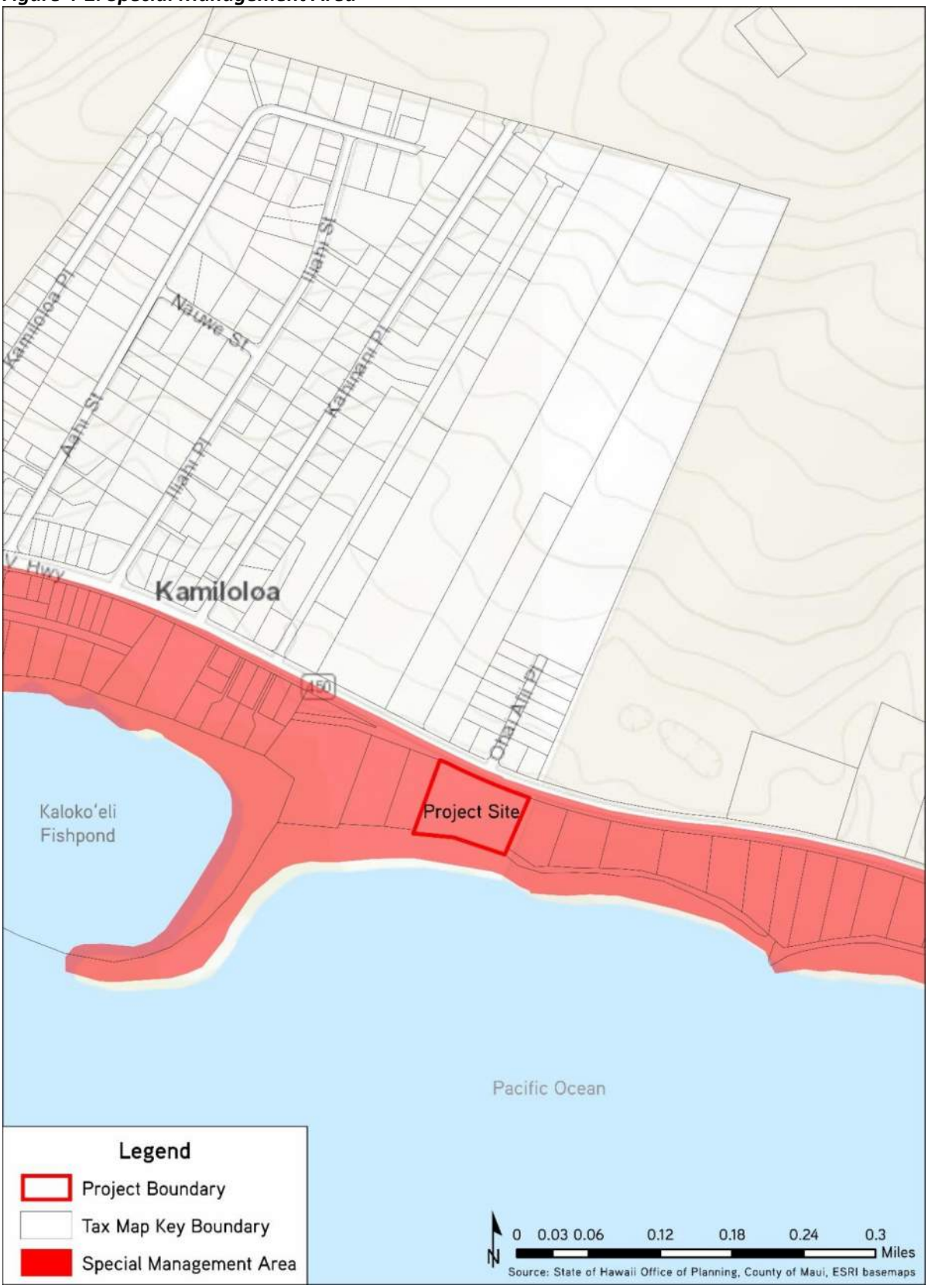
County of Maui Special Management Area, Chapter 205A, HRS

The Hawaiʻi Coastal Zone Management (CZM) Program was created in 1977 through the enactment of Chapter 205A, HRS to coordinate Federal, State, and County agency efforts in the comprehensive management of Hawaiʻi's coastal resources. The Hawaiʻi CZM Program is administered by the State Office of Planning, but each of the four counties are responsible for administering the program locally through Special Management Area (SMA) permits and shoreline setback provisions in their respective counties. The coastal zone encompasses the entire state, as there is no point of land more than 30 miles from the ocean.

Pursuant to the Hawaiʻi Coastal Zone Management Program, HRS 205A, the counties, including the County of Maui, have enacted ordinances establishing the SMA. The SMA was established to regulate any use, activity, or operation of all "developments" along the shoreline in order to preserve, protect, and where possible, to restore the natural resources of the coastal zone.

Discussion: As shown in **Figure 4-2,** the project site is entirely located within the SMA established by the County of Maui. Additionally, the Proposed Action would qualify as a "development" under HRS 205A and has a total cost fair market value greater than $500,000; therefore, an SMA Major Use Permit is required for the Proposed Action. An SMA Use Permit (SM1) is currently being applied for and AOAO is consulting with the County of Maui Planning Department for approval.

Figure 4-2. Special Management Area



The Proposed Action is not anticipated to have adverse impacts on the area's recreational opportunities, historic resources, scenic and open space resources, or coastal ecosystems. The Proposed Action is also not contrary to the objectives and policies of HRS 205A. A discussion of the Project's consistency with the CZM objectives and policies are provided in this section below:

(1) Recreational resources

OBJECTIVE:

Provide coastal recreational opportunities accessible to the public.

POLICIES:

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

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

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

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

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

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

v. Ensuring public recreational uses 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 nonpoint 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.

Discussion: The Proposed Action would be located underground throughout the project site and the main units would be located beneath the existing upper concrete parking lot, ensuring that public access to the shoreline and the quality of recreational opportunities are preserved. BMPs would be employed during construction and prior to any ground-disturbing activities to minimize impacts to these recreational resources. Therefore, the Proposed Action is consistent with the applicable goals and policies of the Recreational Resources section of HRS 205A and the SMA.

(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.

Discussion: The Proposed Action involves the construction of a modern WWTF to ensure that the property's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). The Proposed Action would maintain the basic public health and sanitation standards relating the treatment and disposal of wastewater and ensures that an efficient and economical treatment and disposal of wastewater is employed at Hotel Moloka'i. The Proposed Action would ensure that wastewater would not adversely impact cultural resources and practices in the coastal zone such as subsistence fishing and gathering. Therefore, the Proposed Action is consistent with the applicable objective and policies of the Historic Resources section of HRS 205A and the SMA.

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

Discussion: The Proposed Action would be located underground throughout the project site and the main units would be located beneath the existing upper concrete parking lot, ensuring that the Proposed Action would be compatible with the visual environment. The Proposed Action would not alter natural landforms or significantly block existing views to and along the shoreline. Short-term impacts to scenic view planes may occur during construction as construction equipment and fugitive dust screens may be utilized at the project site; however, those impacts would be temporary. *Mauka* to *makai* public easements for shoreline access and lateral access along the beach would both be preserved during the construction and operation of the Proposed Action. Therefore, the Proposed Action is consistent with the applicable objective and policies of the Scenic and Open Space Resources section of HRS 205A and the SMA.

(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

Discussion: The design and operation of the Proposed Action would ensure that the coastal ecosystem is preserved and protected during the lifetime of the proposed WWTF. The Proposed Action would ensure that wastewater would not adversely impact nearshore surface waters and coastal ecosystems, including reefs. BMPs to prevent the transport of sediment and runoff to coastal waters would be employed during construction and ground-disturbing activities to minimize impacts to the coastal ecosystem. Therefore, the Proposed Action is consistent with the objective and policies of the Coastal Ecosystems section of HRS 205A and the SMA.

(5) Economic Uses
OBJECTIVE:

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

POLICIES:

(A) Concentrate coastal dependent development in appropriate areas;
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
    i. Use of presently designated locations is not feasible;
    ii. Adverse environmental effects are minimized; and
    iii. The development is important to the State's economy.

Discussion: The placement of the Proposed Action underground in existing developed areas throughout the project site and away from the shoreline area would ensure that Hotel Moloka'i continue to minimize adverse social, visual, and environmental impacts to the coastal zone. Therefore, the Proposed Action is consistent with the applicable objective and policies of the Economic Uses section of HRS 205A and the SMA.

(6) Coastal hazards
OBJECTIVE:

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

POLICIES:

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;
(C) *Ensure that developments comply with requirements of the Federal Flood Insurance Program; and*
(D) *Prevent coastal flooding from inland projects.*

Discussion: The purpose of the Proposed Action does not directly involve reducing hazards to life and property from tsunami, storm waves, stream flooding, erosion, or subsidence; however, the Proposed Action would not impact or exacerbate these natural hazards. Additionally, the nature of the project would present no barriers or structures to impede tsunami and flood inundation action during the operation of the Proposed Action as the WWTF units would be located underground. The design and placement of the proposed WWTF would be able to withstand any impacts due to coastal flooding.

The Proposed Action would reduce hazards to public health from untreated wastewater pollution that may impact the coastal ecosystem. The Proposed Action involves the construction of a modern WWTF to ensure that the property's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). Therefore, the Proposed Action is consistent with the applicable objective and policies of the Coastal Hazards section of HRS 205A and the SMA.

(7) Managing development
OBJECTIVE:

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

POLICIES:

(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

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

Discussion: The Proposed Action is in consonance with existing law regarding developments in the coastal zone. Additionally, the Draft EA is being provided for public review and comment. To facilitate the agency review process for the required permits for the Proposed Action, the project team has been in contact with the various agencies for the timely processing of permit applications. Therefore, the Proposed Action is consistent with the applicable objective and policies of the Managing Developments section of HRS 205A and the SMA.

(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.

Discussion: The Proposed Action does not directly involve stimulating public awareness, education, and participation in coastal management. However, the Draft EA is being provided for public review and comment, which contains information regarding the Proposed Action and its impact to coastal resources and the coastal environment.

(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.

Discussion: The Proposed Action would be located outside of the property's shoreline setback area and is located furthest away from the shoreline setback, as possible, beneath the existing upper parking lot to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion. The Proposed Action does not involve the construction of erosion-protection structures. The Proposed Action would have beneficial impacts to the beach as the proposed WWTF would provide for the proper treatment and disposal of wastewater. Therefore, the Proposed

Action is consistent with the applicable objective and policies of the Beach Protection section of HRS 205A and the SMA.

(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.

Discussion: The Proposed Action would promote for the long-term protection of marine and coastal resources by the construction of a modern WWTF that ensures that the property's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b) and would prevent leakages from impacting the coastal zone. Therefore, the Proposed Action is consistent with the applicable objective and policies of the Marine Resources section of HRS 205A and the SMA.

Molokaʻi Island Community Plan

The *Molokaʻi Island Community Plan* (COM, 2018) is the island-wide policy plan for the long-range comprehensive development for the island of Molokaʻi. The Community Plan integrates policies from the Maui County General Plan 2030 Countywide Policy Plan and is tailored to the specific needs of the Molokaʻi community. The Community Plan provides goals, policies, and actions to guide the desired direction of the island's future. The Proposed Action is consistent with the following applicable goals and policies of the Molokaʻi Island Community Plan provided in **Table 4-1:**

Table 4-1. Molokaʻi Island Community Plan Goals

Sector	Goal	Consistency
Natural Resources	Preserve, protect, and manage Molokaʻi's exceptional natural land and water resources to ensure that future generations may continue to enjoy and protect the island environment.	The Proposed Action ensures that Hotel Molokaʻi's wastewater meets the DOH-WWB effluent parameters stated in HAR 11-62-26(b). The Proposed Action and the design of the WWTF would allow for long-term wastewater operations that promotes for the protection of land, air, and water resource quality for future generations. BMPs would be implemented during construction to minimize impacts to natural resources and the nearshore environment.
Heritage Resources	Moloka'i's cultural, historic, and archaeological sites, and cultural practices will be protected and perpetuated for their cultural and historical value, and for enjoyment of and sustainable use by future generations.	The placement of the Proposed Action under the existing parking lot and away from the shoreline area allows for cultural and historic sites such as traditional native Hawaiian fishponds and subsistence fishing and gathering areas along the south shore of Molokaʻi to continue flourish with minimal impact to nearshore ecosystems by properly containing, treating, and disposing of

Sector	Goal	Consistency
		wastewater on property. BMPs would be implemented during construction to minimize impacts to heritage resources.
Scenic Resources	Preserve and protect diverse scenic resources for future generations.	The buildings at Hotel Molokaʻi have been in existence for over 50 years and are part of the historical landscape of the area. The proposed WWTF would be located underground throughout the project site and the main units would be located beneath the existing upper concrete parking lot, ensuring that the Proposed Action would be compatible with the existing scenic and visual environment. The Proposed Action would not alter natural landforms or significantly block existing views to and along the shoreline. Public shoreline access to and along the shoreline would be preserved.
Hazards	Moloka'i will be prepared for natural and human-created hazards.	The Proposed Action and the Draft EA includes the integration of science-based coastal hazard information into the planning and permitting process, including compliance with SMA rules and regulations. Additionally, the Proposed Action would not impact or exacerbate natural hazards, and the project would present no barriers or structures to impede tsunami and flood inundation action.
Land Use	Moloka'i's land use pattern will protect agricultural lands, open space, and natural and cultural resources, and support livable small towns and rural communities.	The location of the project site and Proposed Action has a State land use designation of Urban and a H-1 Hotel District zoning designation by the County of Maui. The Urban land use district is characterized by “city-like” concentrations of people, structures, and services and permits any lot uses permitted by the respective county. The Proposed Action is compliant with the Urban designated zone set by the State Land Use Law and the Hotel District zone set by the County of Maui. The Proposed Action would be located beneath existing urban developed areas.
Community Design	The rural character of Moloka'i's small towns and the island's open spaces will be maintained and enhanced.	The Proposed Action encourages for the preservation of the quality of historic and cultural sites located along the coast and would concentrate development in existing developed areas to maintain the island’s rural character.
Infrastructure - Water	Molokaʻi will have a sufficient supply of potable and non-potable water provided in an	The need for the Proposed Action is to take corrective actions to prevent wastewater leakages and decrease the threat of contamination of water resources by designing

Sector	Goal	Consistency
	environmentally sustainable and cost-effective manner.	and constructing a WWTF capable of meeting DOH-WWB effluent standards. The Proposed Action is not located within a DWS wellhead protection zone and is not anticipated to impact potable water supply. However, the operation of the Proposed Action would greatly improve groundwater quality and prevent contamination to groundwater and the nearshore environment. BMPs would be utilized during construction to prevent stormwater runoff from impacting water resources.
Infrastructure - Wastewater	Moloka'i will have reliable, efficient, and environmentally sensitive wastewater services that meet future needs and maximize wastewater reuse where feasible.	The Proposed Action would directly provide for the proper treatment of wastewater and meet the DOH-WWB effluent parameters stated in HAR 11-62-26(b). Additionally, the Proposed Action would consist of economical, environmentally sensitive, and innovative methods for disposal of treated wastewater effluent during the lifetime of the WWTF.
Infrastructure - Stormwater Management	Manage surface water runoff to prevent flooding and improve water quality for both fresh and coastal waters.	The Proposed Action would be designed to improve the treatment and disposal of wastewater generated at Hotel Molokaʻi, thereby, improving groundwater and nearshore water quality. BMPs would be utilized during construction to reduce sediments in runoff.

Maui County Code, Title 19

The Maui County Code contains ordinances and regulations that affect the general public for the County of Maui. Title 19 (Zoning) of the Maui County Code contains zoning provisions with the purpose and intent to regulate the utilization of land in a manner encouraging orderly development in accordance with the land use directives of the Hawai'i Revised Statutes, the revised charter of the County of Maui, and the general plan and community plans of the County, which include the Molokaʻi Island Community Plan (Maui County Code, 2020). The Chapter also defines the purpose and intent of specific zones and specifies permitted uses in the zone.

The Proposed Action is located within the H-1 Hotel District. As defined in Title 19 of the Maui County Code, a hotel district is a high density multiple-family area bordering business districts or ocean front, which includes public and semi-public institutional and accessory uses. A hotel having eating and drinking establishments, restaurants, and other service establishments which supply commodities or perform services for hotel guests, like Hotel Molokaʻi, is a permitted use within hotel districts. The Proposed Action is consistent with the H-1 Zoning District of the Maui County Code as the Proposed Action supports the permitted and accessory uses at Hotel Molokaʻi by providing for the proper treatment and disposal of wastewater produced from these uses.

Chapter 304: Rules Relating to the Shoreline Area of Molokaʻi

Chapter 304, *Rules of the Molokaʻi Planning Commission Relating to the Shoreline Area of the Island of Molokaʻi,* establishes Molokaʻi's shoreline setback area and the activities and structures prohibited within that area. The purpose of Chapter 304 is to establish the shoreline area in order to protect the health, safety, and welfare of the public.

The shoreline area includes all the land area between the shoreline and the shoreline setback line, which is the line established by Chapter 304-6 running inland from and parallel to the shoreline at a horizontal plane. A discussion of the Proposed Action's relation to the established shoreline setback line set by Chapter 304, and the Proposed Action's consistency with the activities and structures subject to these rules and those prohibited within the shoreline area are provided in this section.

Chapter 304-6: Establishment of Shoreline Setback Lines

(a) All lots which abut the shoreline shall have a shoreline setback line forty feet from the shoreline except as further provided by this section:

> *(a)(3) A lot with an average lot depth which is one hundred sixty feet or more shall have a shoreline setback line either at one hundred fifty feet from the shoreline or at the distance from the shoreline calculated by multiplying the average lot depth of the lot by .25, whichever is the least distance from the shoreline.*

Discussion: The project property has a shoreline setback of 71.19 feet from the State-certified shoreline. A shoreline survey has been conducted and certified by the Board of Land and Natural Resources in September 2020 for the Project and is included in **Appendix C.** The shoreline setback line shows that the majority of the Proposed Action is outside of the 71.19-foot shoreline setback area. However, the installation of a portion of a proposed underground electrical line that connects to an existing electrical distribution panel at the southeast portion of the property would be within the shoreline area, as shown in **Appendix C**. The proposed electrical line will convey power from the existing main panel to the proposed WWTF site. This portion of the proposed electrical line would be placed beneath an existing concrete and gravel surface in a developed area of the property. Under Chapter 205, HRS, a Shoreline Setback Variance for this proposed activity would be submitted to the County of Maui Planning Department, as applicable.

Chapter 304-9: Activities Subject to These Rules

All structures located or proposed to be located within the shoreline area shall conform to the requirements of this chapter and all other regulations. Construction immediately inland of the shoreline area shall also be subject to these rules until a certified and confirmed survey map in prepared in accordance with the provisions of section 12-304-7.

Discussion: The majority of the Proposed Action would be outside of the shoreline area, except for a portion of a proposed electrical line at the southeast portion of the property **(see Appendix C)**. Under Chapter 205, HRS, a Shoreline Setback Variance for this proposed activity would be submitted to the County of Maui Planning Department, as applicable.

In addition, the Proposed Action as a whole would conform to the requirements of Chapter 304 and would take minimization and mitigation measures during construction to prevent any adverse impacts to the

shoreline area. These minimization and mitigation measures include establishing BMPs that minimize pollutant and sediment runoff that may impact the shoreline area, and for the proper disposal of contaminants and other pollutants. The staging of construction equipment and debris would not take place in the shoreline area. The operation and location of the proposed WWTF and electrical connection lines are not anticipated to adversely impact the shoreline area.

The Proposed Action would have beneficial impacts to the coastal zone during the operational lifetime of the proposed WWTF as the Project would upgrade the wastewater system to prevent effluent leakages and minimize contaminants that would harm the coastal environment.

Under a No-Action Alternative, the construction of a new WWTF would not take place, however, the existing WWTF would continue to produce harmful effluent that could be transmitted to receiving waters and adversely impact the coastal zone.

Chapter 304-10: Prohibited Activities Within the Shoreline Area

The mining or taking of sand, dead coral or coral rubble, rocks, soil, or other beach or marine 304-7 deposits from the shoreline area is prohibited with the following exceptions:

> *(a) The taking from the shoreline area of the materials, not in excess of one gallon per person per day, for reasonable, personal noncommercial use; or*
>
> *(b) Where the mining or taking is authorized by a variance pursuant to these rules; or*
>
> *(c) The clearing of these materials from existing drainage pipes and canals and from the mouths of streams including clearing for the purposes under section 46- 11.5, HRS; provided that, the sand removed shall be placed on adjacent areas unless such placement would result in significant turbidity; or*
>
> *(d) The cleaning of the shoreline area for state or county maintenance purposes, including the clearing for purposes under section 46-12, HRS; provided that, the sand removed shall be placed on adjacent areas unless the placement would result in significant turbidity.*

Discussion: Both the construction and the operation of the Proposed Action do not include any activities that mine or take any sand, dead coral or coral rubble, rocks, soil, or other beach deposits from the shoreline area. During the short-term construction period, ground disturbance activities to install the proposed WWTF and electrical connection lines, and the potential for disturbed soils would mostly take place outside of the shoreline area. The proposed underground electrical line within the shoreline area at the southeast portion of the property would not adversely impact soils, sand, or other beach deposits during the construction or operation of the Proposed Action as the electrical line will be placed beneath a concrete and gravel area.

Under a No-Action Alternative, no construction activities would take place and there would be no impacts to the shoreline area.

Chapter 304-11: Structures

Structures are prohibited in the shoreline area without a variance pursuant to this part. A structure in the shoreline area shall not need a variance if:

(a) It was completed prior to June 22, 1970;

(b) It received either a building permit, board approval, or shoreline area variance prior to June 16, 1989;

(c) It was outside the shoreline area when it received either a building permit or board approval; or

(d) It is necessary for or ancillary to continuation of agriculture or aquaculture existing in the shoreline area on June 16, 1989;

(e) It is determined to be a minor structure by the director which does not affect beach processes, does not artificially fix the shoreline, and does not interfere with public access or public views to and along the shoreline. Minor structures shall include, but are not limited to:

(1) Landscape features or irrigation designed to stabilize and enhance the shoreline area;

(2) Minor, single-storied service and recreational buildings, paved lanais, and beach use 304-8 facilities; and

(3) Paved walkways for public access shall be allowed within the twenty-five foot shoreline area for a lot which has an average lot depth of one hundred feet or less or within the forty foot shoreline area for a lot which has an average lot depth of more than one hundred feet.

(f) Work being done consists of maintenance, repair, reconstruction, and minor additions or alterations of legal boating, maritime, or water sports recreational facilities, which are publicly owned, and which result in little or no interference with natural shoreline processes; or

(g) It is a structure which has been legally permitted and which is the subject of repairs valued at less than fifty per cent of the current assessed value of the structure, which do not enlarge the structure nor intensify the use of the structure.

Discussion: The proposed underground electrical line within the shoreline area, as shown in **Appendix C**, is not anticipated to be a structure that would adversely affect beach processes, artificially fix the shoreline, or interfere with public access or public views to and along the shoreline. The project would consult with the County of Maui Planning Department and submit a Shoreline Setback Variance for the Proposed Action, as applicable.

Under a No-Action Alternative, there would be no proposed structures within the shoreline area.

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5. Findings and Conclusion

5.1. Significance Criteria

HAR 11-200.1 provides significance criteria for which all projects in Hawai‘i are assessed. These significance criteria and their relationship to the Proposed Action are as follows:

(1) Irrevocably commit a natural, cultural, or historic resource.

The Proposed Action is not expected to substantially effect natural and cultural resources. The installation of the proposed WWTF would require ground excavation to fully bury the facility and connections (wastewater and electrical) to the site. The new WWTF would be placed in an open area within the upper parking lot of the parcel and is not expected to have a negative effect on natural or cultural resources. The new WWTF would result in a net positive effect on natural resources by correcting effluent treatment and discharge deficiencies. Impacts from the Proposed Action would be short-term and temporary during the construction period.

(2) Curtail the range of beneficial uses of the environment.

The Proposed Action is not expected to curtail the range of beneficial uses of the environment; rather, the Proposed Action would incorporate sound environmental practices and design in order to minimize groundwater, coastal pollution and environmental disturbance, while maintaining important scenic and open space resources for public use and enjoyment. The new proposed WWTF would be designed to ensure that Hotel Moloka‘i would continually meet the DOH permitted effluent parameters and minimize negative impacts to the surrounding environment. There would be no change to the current or potential land use within the project area with the implementation of the Proposed Action.

(3) Conflict with the State’s environmental policies or long-term environmental goals established by law.

The Proposed Action is consistent with the State’s long-term environmental policies, goals, and guidelines as expressed in HRS 344. Implementation and operation of the proposed WWTF would ensure that natural resources and environmental quality at the project site and the surrounding community would be preserved.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The Proposed Action may have a short-term, positive economic impact due to the increase in construction-related employment and revenues generated by the purchase of materials, equipment, and supplies. Long-term positive economic impacts are expected since the Proposed Action would replace and increase the capacity of the current wastewater system to treat effluent, thereby improving an efficient wastewater treatment system to accommodate future business demands for Hotel Moloka‘i. The Proposed Action would benefit the community and Hotel Moloka‘i’s guests as it would prevent untreated effluent from leaking and adversely impacting Moloka‘i’s environmental and cultural resources.

(5) Have a substantial adverse effect on public health.

The Proposed Action would have some temporary, minor impacts on air and noise quality during construction; however, these impacts would be minimized to the extent practicable by the utilization of BMPs and compliance with associated permit conditions. The Proposed Action would not result in any post-construction or long-term effects on public health due to replacement and improvement of the existing WWTF that was rated as "unacceptable" by the DOH. The effect on public health would significantly decrease from the implementation of the Proposed Action.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The Proposed Action would not involve a change in land use, population, or natural resources and ecosystems. Therefore, the Proposed Action would not have any foreseeable secondary impacts.

(7) Involve a substantial degradation of environmental quality.

As discussed in **Chapter 3,** no long-term impacts to any resource would occur or anticipated with the implementation of the Proposed Action. Any impacts would be during the construction phase and would be short-term and temporary.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions.

The Proposed Action would not have a cumulative effect upon the environment or involve a commitment for larger actions. The Project would meet the current wastewater system deficiencies by replacing the property's wastewater system, meet DOH-WWB effluent discharge standards, and would not result in substantial increases of hotel users or capacity. All potential impacts from the Proposed Action would be short-term and temporary during construction.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.

The Proposed Action is located on land zoned as Urban, and not located within any known wetlands, natural area reserves, or refuges. The Proposed Action would be placed underground in an open area within the upper parking lot which is clear of any wildlife habitats. The construction of the proposed WWTF does not include removing any trees that may serve as habitats for the endangered Hawaiʻian Hoary Bat or other native birds. The wetlands surrounding the Kalokoʻeli Fishpond, located several hundred yards away from the project site, may contain threatened or endangered wetland bird species, however, these species would not be negatively impacted by the Proposed Action during the operation of the proposed WWTF in the long-term. The Proposed Action would prevent any negative impacts to the surrounding nearshore environment. Impacts to wildlife species may only occur during the construction phase to air and noise quality; however, these impacts would be minimized to the extent practicable by the utilization of BMPs and compliance with associated permit conditions.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels.

During construction, there would impacts to air and noise quality from short-term construction related activities; however, the impacts would be temporary and mitigated to the extent possible. Implementation of BMPs for construction activities to minimize noise and dust impacts would be required.

A dust control plan would be developed and implemented to minimize fugitive dust during construction, to be approved by the DOH. To reduce noise exposure to the surrounding community, construction activities would be conducted on weekdays and during the daytime hours. If work occurs after normal working hours (i.e., at night or on weekends), or if permissible noise levels are exceeded, appropriate permitting may be required. BMPs would also be utilized to minimize erosion at the project site during and after construction activities, in order to contain runoff on site during construction.

The Proposed Action would have beneficial impacts to air quality by reducing the potential for harmful fumes to be released into the air if a No Action alternative would occur. Noise associated with the operation of the proposed WWTF would be confined underground without impacting the surrounding community and may even attenuate some of the existing noise as aging equipment and facilities are replaced. No impacts to water quality would occur during the operation of the Proposed Action.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

As discussed in **Section 3.4,** the Project location is located in a FEMA designated flood zone (Zone X, VE, and AE), the tsunami evacuation zone, adjacent to the shoreline and coastal waters. The Proposed Action is not located within the sea level rise exposure area (SLR-XA). The Proposed Action would not negatively impact these environmentally sensitive areas or exacerbate natural hazards. The nature of the project would present no barriers or structures to impede tsunami and flood inundation action during the operation of the Proposed Action as the WWTF units would be located underground. Construction personnel would respond to any County of Maui emergency alerts, as appropriate, to ensure safety during construction.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in County or State plans or studies.

The Proposed Action and placement of the proposed WWTF underground would have no negative impacts to existing scenic vistas and viewplanes to the area in the long-term. Short-term impacts to scenic vistas and viewplanes may occur during construction as construction equipment and fugitive dust screens may be utilized at the project site; however, those impacts would be temporary.

(13)Require substantial energy consumption or emit substantial greenhouse gases.

The implementation of the Proposed Action would not require substantial energy consumption during the operation and lifetime of the proposed WWTF. A short-term increase in energy consumption may occur during construction to power construction equipment, if needed; however, those impacts would be very minimal and would not consume a large amount of energy.

5.2. Anticipated Finding of No Significant Impact

Based on the significance criteria set forth in HAR 11-200.1 and discussed in **Section 5.1**, it is anticipated that the Proposed Action would not have a significant effect on the environment and that a FONSI would be filed with the State of Hawai'i Office of Environmental Quality Control following the public comment period.

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6. Agencies and Organizations Consulted

6.1. Pre-Assessment Consultation

The following agencies and organizations were consulted during the preparation of the Draft EA. Those who formally replied are indicated by an asterisk (*). All written comments received during the early consultation period of the Draft EA and responses are included in **Appendix A**.

Federal

- None.

State of Maui

- Department of Accounting and General Services*
- Department of Business, Economic Development & Tourism
- Department of Business, Economic Development & Tourism – Office of Planning*
- Department of Hawaiian Home Lands*
- Department of Health – Clean Water Branch
- Department of Health – Clean Air Branch
- Department of Health – Indoor and Radiological Health Branch*
- Department of Health – Office of Environmental Quality Control
- Department of Land and Natural Resources – Land Division
- Department of Land and Natural Resources – State Historic Preservation Division
- Office of Hawaiian Affairs
- Senator J. Kalani English (Senate District 7)
- Representative Lynn DeCoite (House District 13)

County of Maui

- Maui County Council, Molokaʻi
- Mayor of Maui County (The Honorable Michael P. Victorino)
- Department of Environmental Management
- Department of Parks and Recreation
- Planning Department*
- Department of Public Works
- Department of Water Supply*
- Molokaʻi Planning Commission

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7. List of Contributors

The following people identified in **Table 7-1** contributed to the preparation of this Draft EA.

Table 7-1. Contributors to the Environmental Assessment

Company/ Organization	Personnel	Role	Document
SSFM International, Inc.	Jennifer M. Scheffel	QA/QC	Environmental Assessment
	Matthew Fernandez	Primary Author	Environmental Assessment
PCSI	Dennis Gosser	Principal Investigator	Archaeological Literature Review
	Nicole I. Vernon	Author	

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Appendix A:

Pre-Assessment Consultation Letters and Responses

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

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

(P)20.047

APR - 3 2020

SSFM International, Inc.
RECEIVED
4.9.2020

Ms. Jennifer M. Scheffel, Senior Environmental Planner
SSFM International
99 Aupuni Street, Suite 202
Hilo, Hawaii 96720

Dear Ms. Scheffel:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment
Hotel Molokai Wastewater Treatment Facility
TMK: (2) 5-4-002:001

Thank you for the opportunity to comment on the subject project. The proposed 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, your staff may call Ms. Dora Choy of the Public Works Division at 586-0488.

Sincerely,

CURT T. OTAGURO
Comptroller

c: Mr. Wade Shimabukuro, MDO

SSFM International

September 10, 2020

SSFM 2016_197

Mr. Curt T. Otaguro, Comptroller
State of Hawai‘i Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai‘i 96810-0019

SUBJECT: **Pre-Assessment Consultation for Draft Environmental Assessment**
Hotel Molokai Wastewater Treatment Facility
Tax Map Key (TMK): (2) 5-4-002:001

Dear Mr. Otaguro:

Thank you for your letter dated April 3, 2020 regarding the subject project. We note that your department has not comments at this time.

Your April 3rd letter, along with this response letter, will be included in the Draft Environmental Assessment. We appreciate your participation in the pre-assessment consultation review process.

Should you have any comments or questions regarding the proposed project, please contact me at (808) 356-1273 or by email at jscheffel@ssfm.com.

Mahalo,

SSFM INTERNATIONAL, INC.

Jennifer M. Scheffel
Sr. Environmental Planner

cc: Wade Shimabukuro (MDO)

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

JOSH GREEN
LT. GOVERNOR
STATE OF HAWAII

WILLIAM J. AILA, JR
CHAIRMAN
HAWAIIAN HOMES COMMISSION

TYLER I. GOMES
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P. O. BOX 1879
HONOLULU, HAWAII 96805

In reply to: PO-20-064

April 22, 2020

Ms. Jennifer M. Scheffel
Sr. Environmental Planner
SSFM International, Inc.
99 Aupuni Street, Suite 202
Hilo, Hawaii 96720

Aloha Ms. Scheffel:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment, Hotel Molokai Wastewater Treatment Facility, Kaunakakai, Island of Molokai, Hawai'i, TMK (2) 5-4-002:001

The Department of Hawaiian Home Lands (DHHL) acknowledges receiving the request for Pre-Assessment Consultation on the above-cited project and offers the following comments.

1. After reviewing the materials submitted, the proposed Wastewater Treatment Facility (WWTF) is located near the Department of Hawaiian Home Lands' (DHHL) Kamiloloa landholdings. Construction activities may result in short-term noise, air quality and traffic impacts. Due to the close proximity to beneficiaries living in Kamiloloa, DHHL recommends coordination with DHHL Molokai District Office staff and the Kamiloloa Homestead Community prior to commencing construction activities.

2. DHHL enthusiastically supports the upgrading of the Hotel Molokai Wastewater Treatment Facility. Many of DHHL's lessees and their 'ohana on Molokai meet a significant share of their dietary needs from subsistence activities along Molokai's southern shoreline. Nearshore water quality is of primary concern in maintaining the health of those ocean resources. Given accelerated sea level rise projections, upgrading of legacy waste water treatment facilities all along this coastline, both on commercial and residential sites, is increasingly important for coastal environmental quality and the health and well-being of DHHL's beneficiaries.

3. We highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

Mahalo for the opportunity to provide comments. If you have any questions, please contact Nancy McPherson at (808)620-9519 or via email at nancy.m.mcpherson@hawaii.gov.

Aloha,

William J. Aila Jr., Chairman
Hawaiian Homes Commission

PO-20-064

SSFM International

March 24, 2020

SSFM 2016_197.000

Mr. William Aila, Jr.
Director
Department of Hawaiian Home Lands
Office of the Chair
P.O. Box 1879
Honolulu, HI 96805

DEPT. OF HAWAIIAN HOME LANDS
2020 MAR 31 PM 12:02

SUBJECT: Hotel Molokai Wastewater Treatment Facility
Kaunakakai, Island of Molokai, Hawaii
Tax Map Key (TMK): (2) 5-4-002:001
Pre-Assessment Consultation for Draft Environmental Assessment

Dear Interim Director Aila, Jr.,

The Association of Apartment Owners of Hotel Molokai (AOAO) is proposing improvements to upgrade the existing Wastewater Treatment Facility (WWTF) at Hotel Molokai.

Project Background

Hotel Molokai is located on the south shores of Molokai, along Kamiloloa Beach, approximately 1.5 miles east of Kaunakakai (see Attachment 1, Project Location Map). Hotel Molokai is the island's oldest and longest continuously running hotel. The hotel complex includes 13 separate buildings and accommodation units with 57 hotel rooms plus a bar and restaurant. The majority of the site is currently used for guest accommodations, hotel parking, and luau facilities. Due to its remote location, Hotel Molokai maintains its own WWTF to handle wastewater generated by its hotel and restaurant operations. The current WWTF does not comply with today's wastewater design standards, has exceeded its useful life, and produces effluent that failed to meet Department of Health, Wastewater Branch (DOH-WWB) discharge standards.

On occasion, the effluent parameters have exceeded the permit level, and the DOH-WWB has directed the AOAO Hotel Molokai to proceed with the design and construction of the wastewater treatment system to ensure the effluent is in continual compliance with permit requirements. Effluent violations under Hawaii Administrative Rules (HAR) Title 11, Chapter 62 require corrective actions to upgrade the facility by constructing a modern facility capable of meeting current design and effluent standards. The proposed wastewater treatment improvements will be designed in accordance with the criteria presented with HAR Title 11, Chapter 62.

Proposed Action

The Proposed Action includes construction of a new WWTF to ensure that the property's effluent is in continual compliance with permit requirements to meet the DOH's current regulatory discharge standards. The existing WWTF is configured as nine (9) separate units of approximately 1,400-gallon capacity, each located relatively close to wastewater sources. The proposed WWTF will be a single central treatment unit located within the upper parking lot, which will provide as much separation from the hotel units as possible, minimize challenges associated with dewatering, and to provide greater economy of scale as it relates to treatment capacity and maintenance requirements (see Attachment 2, Project Site Map).

The centralized WWTF will require conveyance of the wastewater from the various sources to that central location and Conveyance of electrical power from the existing main panel on the opposite side of the facility to the proposed WWTF site. A total tank volume of 24,000 gallons was calculated as sufficient to meet the DOH-WWB's tank capacity requirements for the property.

In November 2015, the Federal Emergency Management Agency (FEMA) updated the Flood Insurance Rate Maps (FIRM) for Molokai. The new FIRM mapping increased the Base Flood Elevation (BFE) of the coastal plain area surrounding Hotel Molokai from three (3) feet to seven (7) feet. Any structures, equipment or habitable areas must be compliant with the BFEs as shown on the latest FEMA maps, and shall be constructed above the BFE. Given the location and resort setting, a new underground WWTF was determined as the only viable alternative.

This action requires the preparation of an Environmental Assessment (EA) for compliance with Hawaii Revised Statutes, Chapter 343.

Request for Comment

The AOAO has contracted SSFM International, Inc., to prepare an EA for the proposed action. This letter and attachments are being provided to solicit any comments, concerns, or regulatory requirements that you may have regarding this project. In addition, we seek your input as to whether the proposed project may have an impact on any of your existing or planned projects, plans, policies, or programs that we should consider when preparing the EA. We would greatly appreciate your cooperation in providing us with written comments within 30 days of the date of this letter. Please address your written comments to:

SSFM International, Inc.
Attn: Jennifer Scheffel
99 Aupuni Street, Suite 202
Hilo, Hawaii 96720

If you have any questions on the proposed action, please contact me at (808) 375-6038 or via email at jscheffel@ssfm.com.

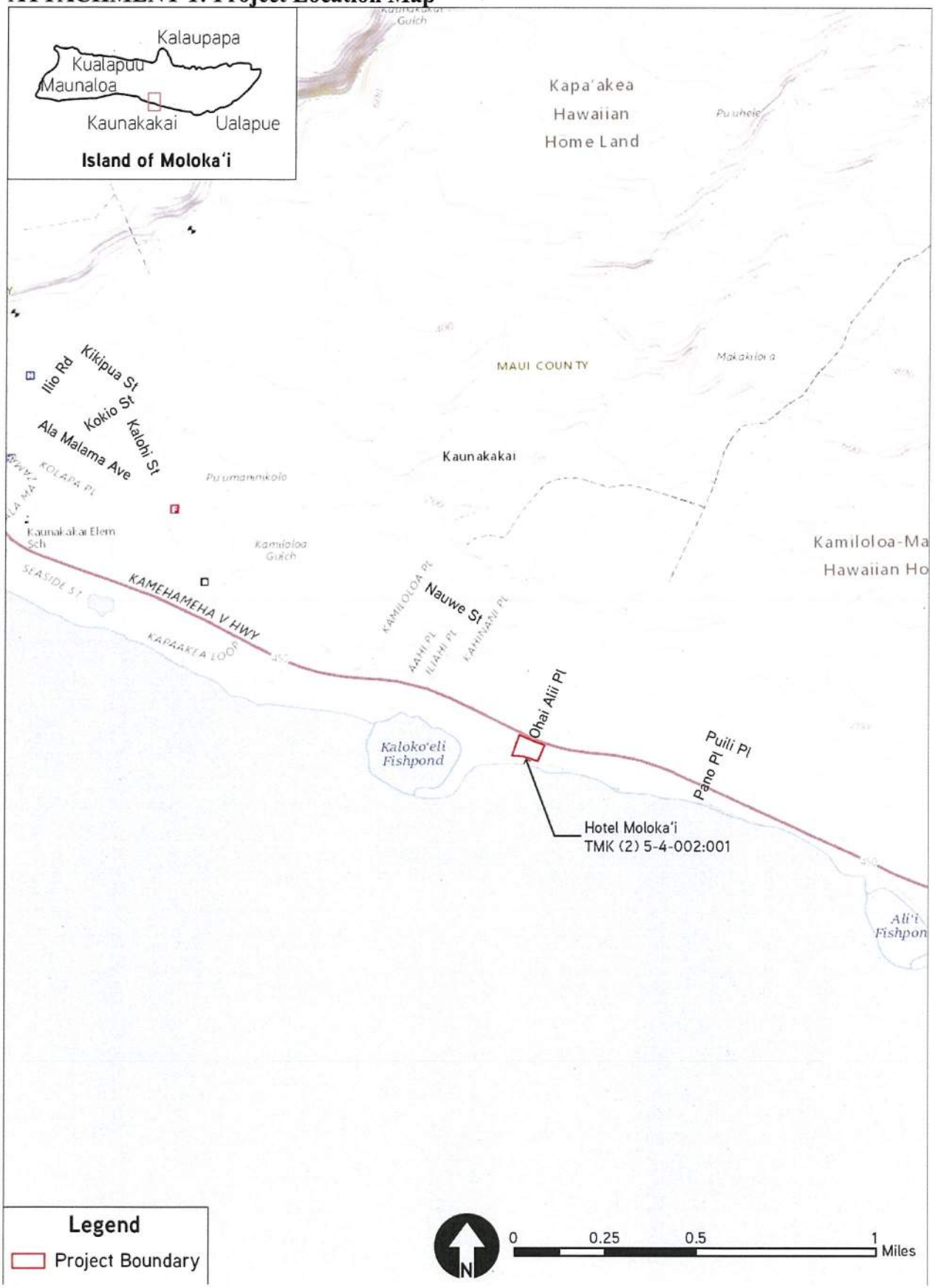
Mahalo,
SSFM INTERNATIONAL, INC.

Jennifer M. Scheffel
Sr. Environmental Planner

Attachments

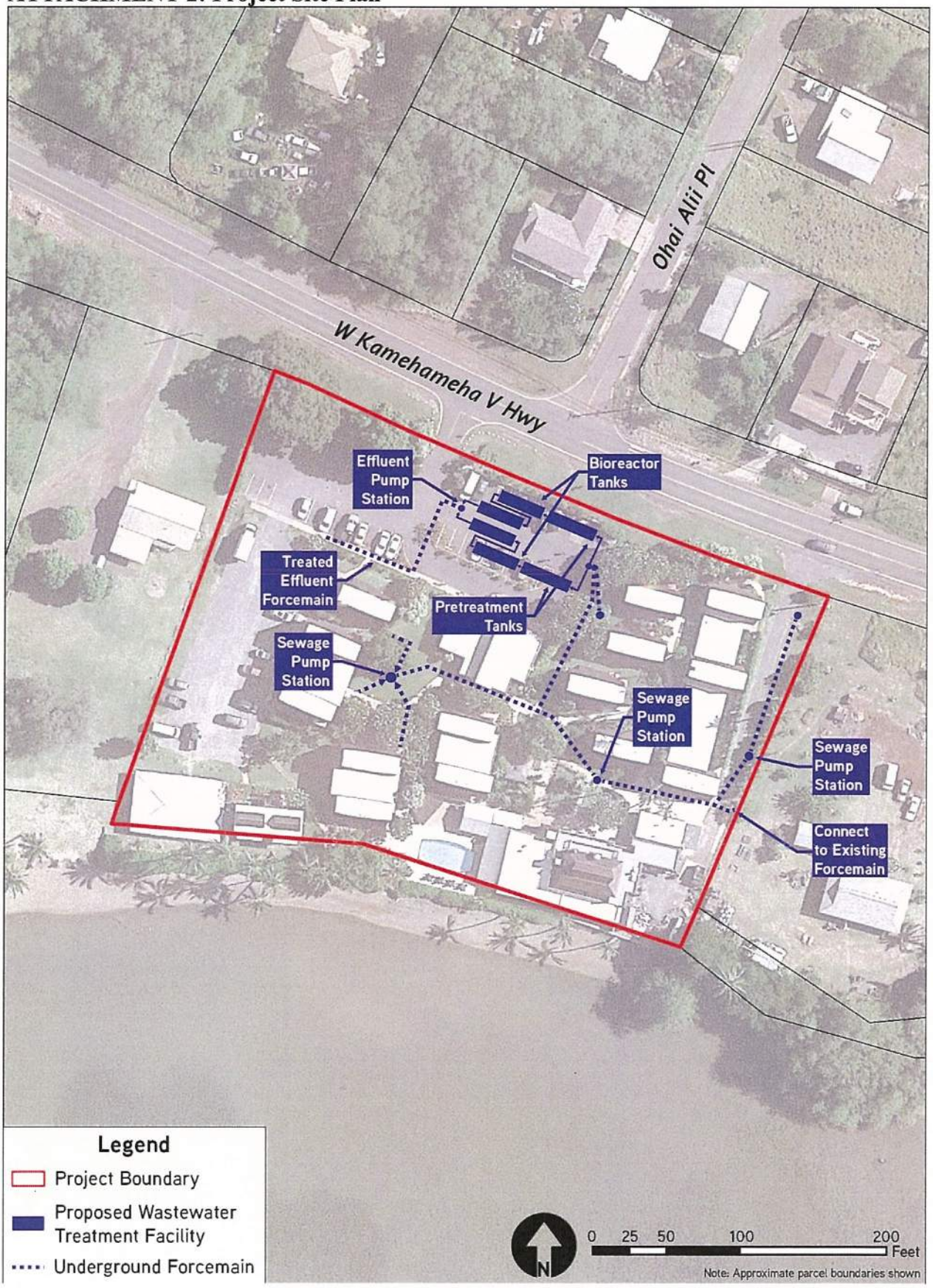
SSFM International

ATTACHMENT 1: Project Location Map



SSFM International

ATTACHMENT 2: Project Site Plan



SSFM International

September 10, 2020

SSFM 2016_197

Mr. William Aila Jr., Chairman
State of Hawai‘i
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawai‘i 96805

SUBJECT: **Pre-Assessment Consultation for Draft Environmental Assessment**
Hotel Molokai Wastewater Treatment Facility
Tax Map Key (TMK): (2) 5-4-002:001

Dear Chairman Aila:

Thank you for your letter dated April 22, 2020 regarding the proposed project. We offer the following response to your comment.

1. We acknowledge the potential impacts that construction activities related to the proposed project may have on DHHL Kamiloloa landholdings and beneficiaries living in close proximity to the project area. The Draft EA will address construction-related impacts including short-term noise, air quality and traffic impacts, and BMPs will be utilized during construction to minimize those impacts. The Project will coordinate with the DHHL Molokai District Office and the Kamiloloa Homestead Community prior to construction activities.

2. We acknowledge the importance of the proposed project to ensure that the quality of the coastal environment, nearshore waters, and ocean and cultural resources are preserved for the health and well-being of DHHL beneficiaries. The Draft EA will include evaluations on how the proposed project will affect the coastal environment along with cultural and historic resources in the area.

3. The Proposed Project will consult with Hawaiian Homestead community associations and other Native Hawaiian organizations during the preparation of the EA.

A copy of your April 22nd letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the pre-assessment consultation review process. A copy of the Draft EA will be provided for your review when published.

Should you have any additional comments or questions regarding the proposed project, please contact me at (808) 356-1273 or by email at jscheffel@ssfm.com.

Mahalo,

SSFM INTERNATIONAL, INC.

Jennifer M. Scheffel
Sr. Environmental Planner

DAVID Y. IGE
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

March 27, 2020

SSFM International, Inc.
RECEIVED
4.6.2020

Ms. Jennifer M. Scheffel
SSFM International, Inc.
99 Aupuni Street, Suite 202
Hilo, HI 96720

Dear Ms. Scheffel:

Thank you for your submittal requesting comments to the Pre-Assessment Consultation for Draft Environmental Assessment for Hotel Molokai Wastewater Treatment Facility, Kaunakakai, Island of Molokai, Hawaii, Tax Map Key (TMK): (2) 5-4-002: 001.

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

- Chapter 11-46 Community Noise Control

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,

Jeffrey M. Eckerd
Program Manager
Indoor and Radiological Health Branch

SSFM International

September 10, 2020

SSFM 2016_197

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

SUBJECT: **Pre-Assessment Consultation for Draft Environmental Assessment**
Hotel Molokai Wastewater Treatment Facility
Tax Map Key (TMK): (2) 5-4-002:001

Dear Mr. Eckerd:

Thank you for your letter dated March 27, 2020 regarding the proposed project. We offer the following response to your comment.

The proposed project and project activities will comply with HAR Chapter 11-46, Community Noise Control, including obtaining a Community Noise Permit, if required.

A copy of your March 27th letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the pre-assessment consultation review process. A copy of the Draft EA will be provided for your review when published.

Should you have any additional comments or questions regarding the proposed project, please contact me at (808) 356-1273 or by email at jscheffel@ssfm.com.

Mahalo,

SSFM INTERNATIONAL, INC.

Jennifer M. Scheffel
Sr. Environmental Planner

Matthew Fernandez

From: Sybil Lopez <Sybil.Lopez@co.maui.hi.us>
Sent: Wednesday, April 15, 2020 8:41 AM
To: Jennifer Scheffel
Subject: Pre-consultation for DEA Hotel Molokai Meeting Minutes 02/10/20
Attachments: Logowithcorevaluestext_0868be57-347b-48f2-bce9-184df1900f2e.JPG; 200210 Hotel Molokai SMA Mtg w County.1.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Email received from EXTERNAL sender. Confirm the content is safe prior to opening attachments or links.

Aloha Jennifer;

Just to let you know that I received your request last week, but wasn't able to respond since I've been terribly sick.

I hope the attachment would suffice.

Please let me know if there is anything else you need.

Mahalo;

>>> Matthew Fernandez <mfernandez@ssfm.com> 02/12/20 5:06 PM >>>
Good afternoon All,

Please find attached the meeting minutes from our discussion this past Monday (02/10) regarding the Hotel Molokai wastewater system.

Let us know if you have any questions.

Mahalo,
Matt
Matthew Fernandez | Planner

501 Sumner Street, Suite 620 | Honolulu, Hawaii 96817
T 808.531.1308 | D 808.356.1212 | F 855.329.7736
mfernandez@ssfm.com | www.ssfm.com

Happy Diamond Anniversary

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Hotel Molokaʻi
Meeting Minutes
Held at Current Planning Division, Planning Department, Maui County, Conf. Room 619
February 10, 2020

Attendees:
County Planners - Sybil Lopez, Jeffrey Dack, Clayton Yoshida
SSFM (Agent)– Jared Chang, Austen Drake, Matt Fernandez
Hotel Molokaʻi (Applicant) - Suzanne Vaaler

Special Management Area (SMA)
The project requires a Special Management Area Use Permit (SM1) because it qualifies as a "development" and has a total cost fair market value greater than $500,000. Preliminary costs are estimated in the range of $1.3 million.

Shoreline Setback Variance (SSV)
The need for a SSV is unconfirmed at this time due to the potential for all work to be located outside of the shoreline setback area. Confirmation of the SSV requirement is dependent on an approved Certified Shoreline Survey.

Hawaiʻi Revised Statues (HRS), Chapter 343 Trigger(s)
It is undetermined if the project action requires compliance with Chapter 343, however two (2) potential "triggers" have been identified (actions in the shoreline and proposed wastewater facility). For the project to be considered inapplicable to Chapter 343, both triggers must not be met.

1) Any action within the shoreline setback area would trigger Chapter 343, thus requiring an environmental assessment (EA) or possible EA exemption (if applicable). Avoiding any action in the shoreline setback would result in "no trigger." Based on average lot depth (approx. 160 ft), the shoreline setback line would be 71 feet *mauka* (inland) from the certified shoreline. Actions within the SSA to abandon existing wastewater facilities, such as capping ends, would be triggers. It is recommended to avoid all work within the Shoreline Setback Area if at all possible.

2) A large "wastewater facility" can trigger compliance with Chapter 343, unless it serves less than the amount of 50 single family units resulting in "no trigger." The project's wastewater calculations (handout) show demands are expected to be under the 50 single family unit threshold.

Chapter 343 EA Exemption
Exemption Class 2, No. 3 applies widely to utility replacement projects, but includes language to specifically exclude actions that require a Department of Health permit. Since the project is needed to meet DOH corrective action and involves a potential existing or new wastewater permit approval, it would not qualify for EA Exemption under this class.

Chapter 343 EA
The EA (if required) will need to be completed prior to the SMA hearing.

Molokaʻi Planning Commission
Note that the Molokaʻi Planning Commission is the final authority for granting SM1 permits. The MPC recently required another wastewater project seeking SM1 approval to treat wastewater above DOH requirements. Use of each fields would have met DOH standards, but the higher standard of anerobic treatment was requested due to potential effluent impacts to surface waters. The current project proposes an anerobic treatment system as recommended in the preliminary engineering report submitted to DOH.

State Certified Shoreline Survey
A certified shoreline survey is required. It would not be needed if all improvements took place behind an established shoreline hardening structure, such as the pool deck structure, which is limited. However, the remainder of the parcel is not hardened and would require the survey. The County and applicant will check past permit applications (i.e. kitchen) for any shoreline structure documentation or non-conformity elements that are relevant.

SMA and SSV Applications and Processing
The SM1 and SSV would be processed concurrently by the Planning Department if both are required. The application for SM1 should include detailed information on removal and/or abandonment actions and more discussion on sea level rise impacts.

If SSV is likely to not be required based on the draft shoreline survey, then the SM1 can be processed while waiting for DLNR to certify the shoreline. Note, SM1 hearings cannot be scheduled until the shoreline is certified.

HRS Chapter 6E consultation with State Historic Preservation Division will be required for either SM1 or SSV. The applicant will submit the completed HRS 6E consultation form to the County at the appropriate time. Note, the completion of 6E consultation with SHPD may take up to 75 days.

A Flood Development Permit may be required due to hazard flood designations.

Tent Discussion
The tent was dismantled by the hotel following direction from Maui County Department of Fire & Public Safety in which they indicated that Hotel Molokai did not need clearance or approval to remove the tent. The County noted current practice is to require SMA approvals for tents. Note, the existing tent is not included in the SMA Assessment application submitted for the wastewater system, but the tent will require after-the-fact SMA approvals for 1) erecting the tent and 2) tent removal.

This would constitute as actions within the SMA and shoreline setback. A combined SMA Assessment application and Shoreline Setback Assessment application should be submitted to the County for the tent, separate from the wastewater application. Both tent

actions may qualify for HRS 343 EA exemption, but this needs to be looked into further. This application would likely result in an SMA Minor approval.

-end-

SSFM International

September 10, 2020

SSFM 2016_197

Ms. Sybil Lopez, Planner
County of Maui Planning Department
2200 Main Street
Wailuku, Hawai‘i 96793

SUBJECT: **Pre-Assessment Consultation for Draft Environmental Assessment**
Hotel Molokai Wastewater Treatment Facility
Tax Map Key (TMK): (2) 5-4-002:001

Dear Ms. Lopez:

Thank you for your email dated April 15, 2020 regarding the proposed project. We offer the following response to your comment.

We note that the proposed project will require an SMA Use Permit (SM1), State Certified Shoreline Survey, Flood Development Permit, and a potential Shoreline Setback Variance (SSV). The Proposed Project does not qualify for an EA exemption due to the project needing to meet Department of Health corrective actions with the replacement of the existing wastewater treatment facility.

A copy of your April 15th email, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the pre-assessment consultation review process. A copy of the Draft EA will be provided for your review when published.

Should you have any additional comments or questions regarding the proposed project, please contact me at (808) 356-1273 or by email at jscheffel@ssfm.com.

Mahalo,

SSFM INTERNATIONAL, INC.

Jennifer M. Scheffel
Sr. Environmental Planner

tools used for construction should be rinsed off-site.

- Properly install and maintain erosion control barriers such as silt fencing or straw bales.

- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment. Apply biocides only during dry periods of low rainfall to minimize chemical run-off.
- Keep run-off on site.

Conservation BMPs

DWS recommends the following conservation measures to prevent overloading the onsite sewer system:

- Use EPA WaterSense labeled plumbing fixtures.
- Install flow reducers and faucet aerators in all plumbing fixtures wherever possible.
- Install dual flush toilets with high efficiency models that use 1.28 gallons per flush or less.
- Install showerheads with a flow rate of 1.5 gallons per minute (gpm) at 60 pounds per square inch (psi).
- Install bathroom sink faucets with fixtures that do not exceed 1 gpm at 60 psi.
- Laundry facilities and/or individual unit machines should use Energy Star labeled washers.

SSFM International

September 10, 2020

SSFM 2016_197

Mr. Jeffrey T. Pearson, Director
County of Maui Department of Water Supply
200 South High Street
Wailuku, Maui, Hawai‘i 96793

SUBJECT: **Pre-Assessment Consultation for Draft Environmental Assessment**
Hotel Molokai Wastewater Treatment Facility
Tax Map Key (TMK): (2) 5-4-002:001

Dear Director Pearson:

Thank you for your email dated April 17, 2020 regarding the proposed project. We offer the following response to your comment.

We acknowledge that the proposed project is not anticipated to impact Moloka‘i’s potable water supply. BMPs, including the guidance provided by DWS, will be utilized during design and construction to prevent groundwater contamination to the Kamiloloa Aquifer and to DWS infrastructure in the project area. The Draft EA will discuss potential impacts to water resources in the area and measures to minimize and mitigate those impacts.

A copy of your April 17th letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the pre-assessment consultation review process. A copy of the Draft EA will be provided for your review when published.

Should you have any additional comments or questions regarding the proposed project, please contact me at (808) 356-1273 or by email at jscheffel@ssfm.com.

Mahalo,

SSFM INTERNATIONAL, INC.

Jennifer M. Scheffel
Sr. Environmental Planner

Appendix B:

Archaeological Literature Review

PRELIMINARY DRAFT REPORT

Literature Review in Support of Hotel Molokaʻi Wastewater Treatment System Improvements, Kamiloloa Beach, Kamiloloa Ahupuaʻa, Kona District, Island of Molokaʻi, Hawaiʻi

TMK: (2) 5-4-002:001

Prepared for:

SSFM International, Inc.
501 Sumner Street, Suite 620
Honolulu, HI 96817

May 2020

PACIFIC CONSULTING SERVICES, INC.
720 Iwilei Road, Suite 424, Honolulu Hawaii 96817

PRELIMINARY DRAFT REPORT

Archaeological Literature Review in Support of Hotel Molokaʻi Wastewater Treatment System Improvements, Kamiloloa Beach, Kamiloloa Ahupuaʻa, Kona District, Island of Molokaʻi, Hawaiʻi

TMK: (2) 5-4-002:001

By
Nicole I. Vernon, M.A.
and
Dennis Gosser, M.A.
Principal Investigator

Prepared For:
SSFM International, Inc.
501 Sumner Street, Suite 521
Honolulu, Hawaiʻi 96817

Prepared By:
Pacific Consulting Services, Inc.
720 Iwilei Road, Suite 424
Honolulu, HI 96817

May 2020

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MANAGEMENT SUMMARY

Document Title:	Archaeological Literature Review in Support of Hotel Molokaʻi Wastewater Treatment System Improvements, Kamiloloa Beach, Kamiloloa Ahupuaʻa, Kona District, Island of Molokaʻi, Hawaiʻi
Date/Revised Date:	Preliminary Draft: May 2020
Archaeological Permit #:	SHPD Permit No. 20-29
Project Location:	Kamiloloa Beach, Kamiloloa Ahupuaʻa, Kona District, Island of Molokaʻi, Hawaiʻi
Project TMK:	TMK: (2) 5-4-002:001
Land Owner:	Hotel Molokaʻi
Project Proponents:	State Department of Health (DOH)
Project Tasks:	Archaeological Literature Review
Project Acreage:	2.45
Principal Investigator:	Dennis Gosser, M.A.
Regulatory Oversight:	Chapter 6E-7 and 6E-8, Hawaii Revised Statutes (HRS) and Hawaii Administrative Rules (HAR) Chapter 275
Project Background:	The project scope of work includes demolition of existing utilities and installation of new utilities at the Hotel Molokaʻi property.
SIHP #:	No known sites in the project area.
Findings:	Traditional land use in the project area included habitation and dryland agriculture. During the historic period, the land was a portion of Grant 6128 to Joseph N. Uahinui. Hotel Molokaʻi was constructed on the property in 1966. No previous archaeological investigations have been conducted in the project area.
Human Skeletal Remains:	None identified within the project area
Recommendations:	It is recommended that no historic properties will be affected with the condition that archaeological monitoring be conducted with a SHPD-approved AMP.

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INTRODUCTION

Under contract to SSFM, Inc., Pacific Consulting Services, Inc. (PCSI) has prepared this Archaeological Literature Review (ALR) in support of the Hotel Molokaʻi Wastewater Treatment System Improvements project at Kamiloloa Beach, Kamiloloa Ahupuaʻa[1], Kona District, on Molokaʻi Island. The project proponent is the State Department of Health (DOH) and the land owner is Hotel Molokaʻi. The location of the proposed project is shown in Figure 1. The project scope of work includes removal of existing utilities and installation of new utilities, such as sewer lines and lift stations. A historical, cultural, and archaeological background study was conducted in order to evaluate any potential effect on historic properties and to recommend mitigation of any adverse effect, if warranted. This work was carried out in accordance with Hawaii Revised Statutes (HRS) Chapter 6E and Hawaii Administrative Rules (HAR) Title 13, Chapter 275.

PROJECT AREA LOCATION AND DESCRIPTION

The proposed project is located at 1300 Kamehameha V Highway on Molokaʻi's south shore. The project area is in Tax Map Key (TMK) parcel (2) 5-4-002:001 and measures 9924.5 square meters (sq m) (2.45 acres [ac]). The TMK plat map for the parcel is shown in Figure 2. Table 1 summarizes the proposed ground disturbing activities. Project site plans are shown in Figures 3 and 4.

Table 1. Anticipated Construction Activities.

TASK	WORK DESCRIPTION	ANTICIPATED DEPTH
Erosion and Sediment Control	Filter sock	Above ground
Demolition	Removal of existing concrete walkway, AC pavement and curb	Variable (shallow)
	Removal of existing cavitette units and lift stations	Existing depth, up to approx. 14 feet
	Removal of existing utilities	Existing depth, up to approx. 3 feet
Construction	Sewer line and force main excavation	Approximately 3 feet
	Sewage lift station	Approximately 15 feet

Proposed work will involve removal of existing pavement, sewer lines, cavitette units, and lift stations, and installation of new lift stations, 4-inch force mains, and 6 and 8-inch sewer lines. Excavations will reach up to approximately 15 feet and will potentially disturb previously undisturbed soils.

ENVIRONMENTAL SETTING

Kamiloloa Ahupuaʻa (a traditional Hawaiian land division) is a narrow land section on the leeward side of Molokaʻi Island that stretches from the coast to approximately 250 feet above mean sea level (amsl). The land unit is bordered by Kapaʻakea Ahupuaʻa on the west and Makakupʻia on the east. The project area is situated on the coast at Kamiloloa Beach.

[1] At the Mahele, Kamiloloa Ahupuaʻa was divided into two sections: Kamiloloa (Government) and Kamiloloa. For the purposes of this report, Kamiloloa refers to the pre-Mahele *ahupuaʻa* boundary.

Figure 1. Project Area Shown on USGS 7.5-minute Kaunakakai Topographic Quadrangle (USGS 2017).

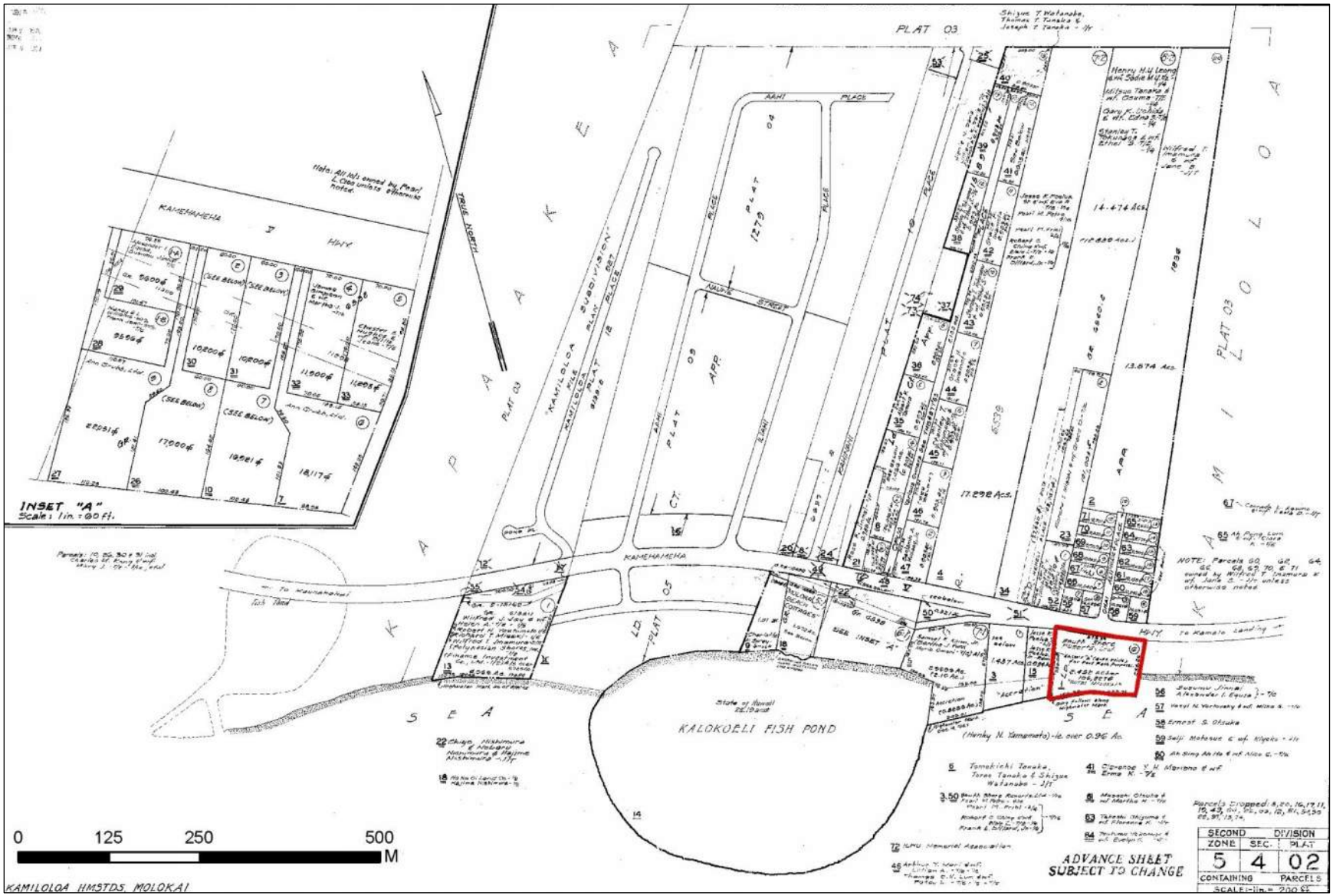

Figure 2. Project Area Shown on Plat Map (2) 5-4-002 (Tax Maps Bureau and Survey Department 1934).

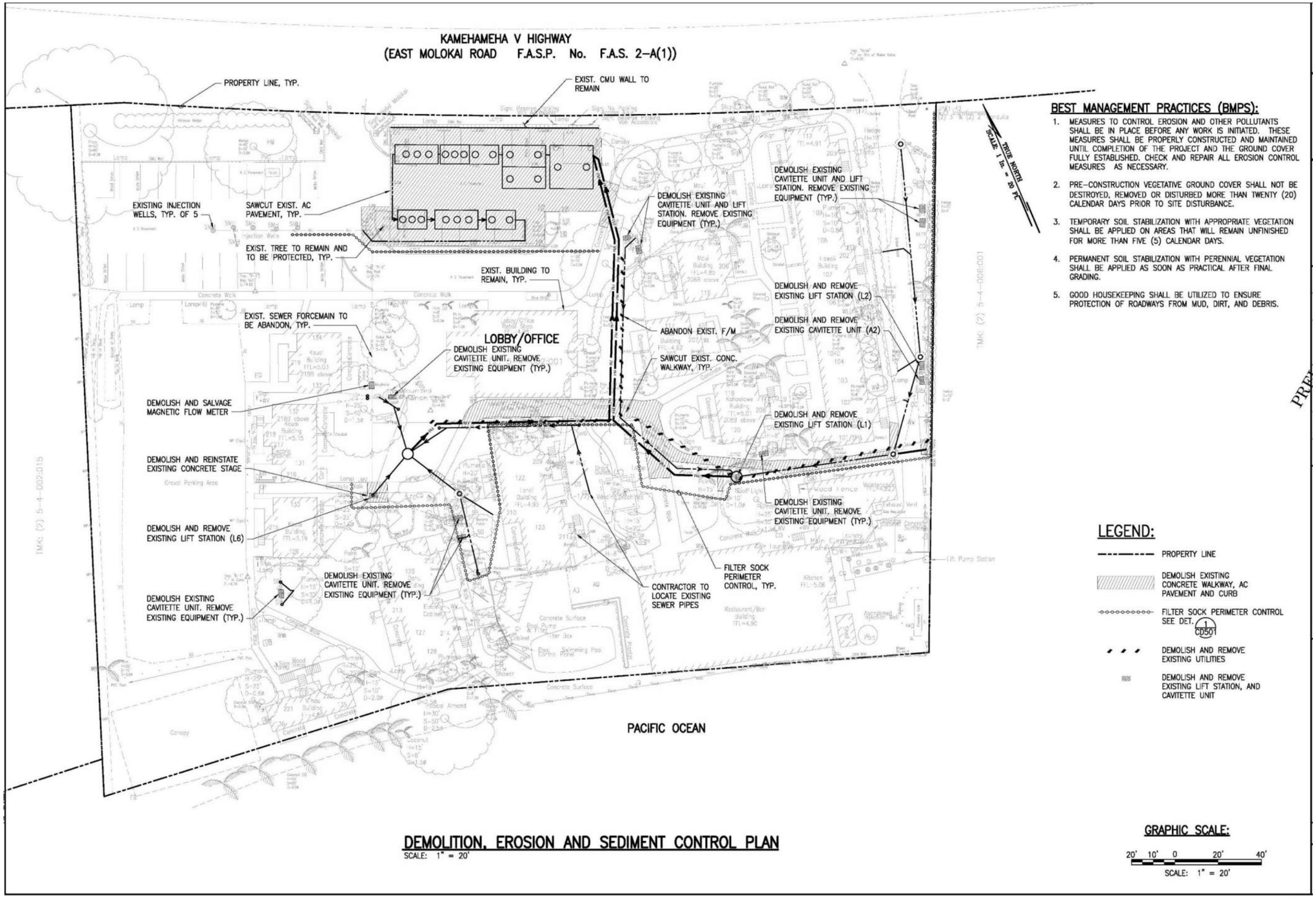

Figure 3. Project Site Demolition, Erosion, and Sediment Control Plan.

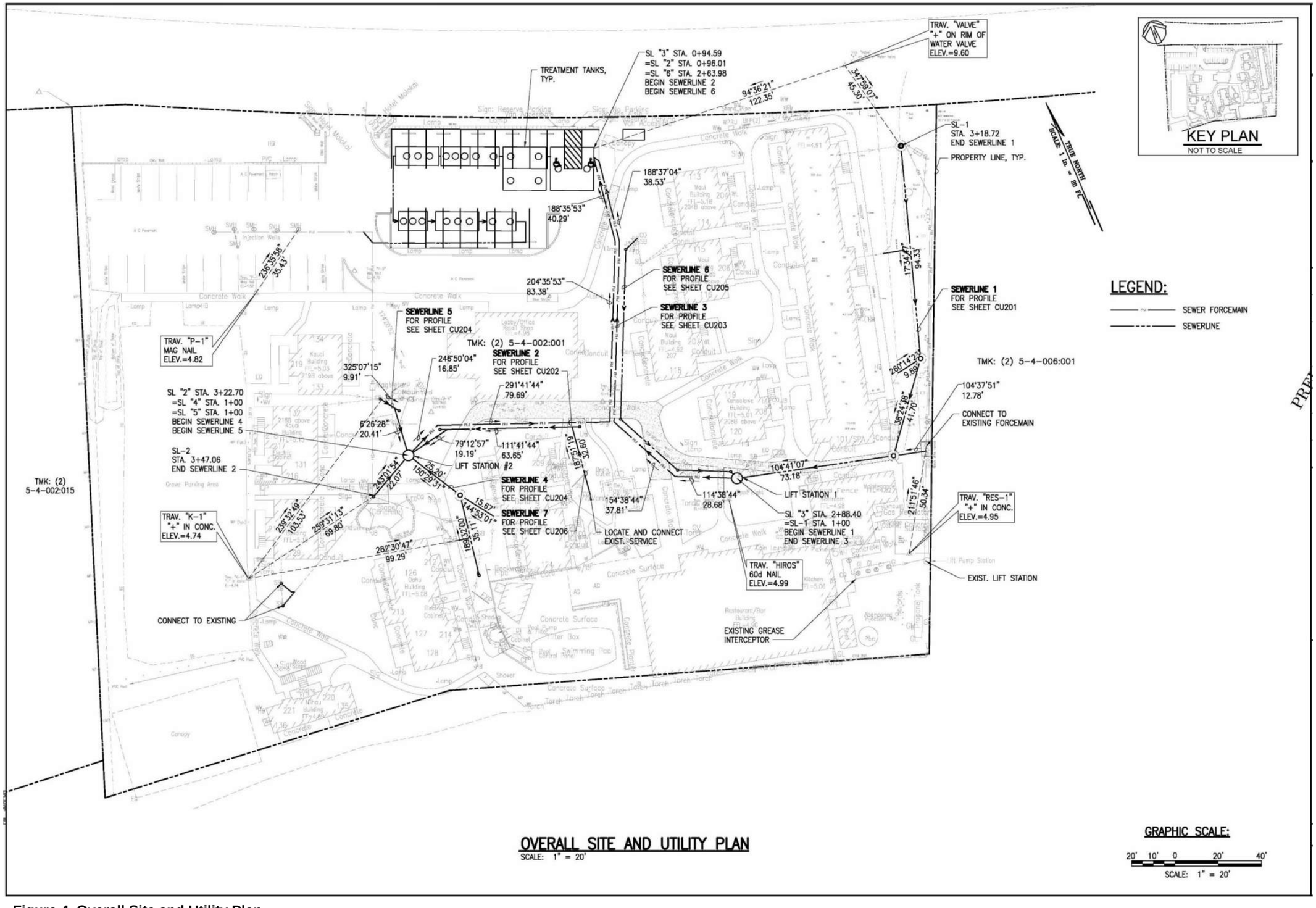

Figure 4. Overall Site and Utility Plan.

TOPOGRAPHY AND SOILS

The project area is situated at 9.0–15.0 m amsl. The parcel is underlain by Kealia silt loam (KMW) and Mala silty clay with 0 to three percent slopes (MmA), as shown in Figure 5. The Kealia series consists of somewhat poorly drained soils on coastal flats (Foote et al. 1972:67). Kealia silt loam has a high salt content and ponding can occur after heavy rain. The water table is brackish and fluctuates with the tides. The Mala series formed in recent alluvium and consists of well-drained soils on bottoms of drainageways and on alluvial fans on the coastal plains (Foote et al. 1972:92). Mala silty clay is found on fans on the coastal plan. Shallow wells dug in this soil reveal brackish water.

RAINFALL, HYDROLOGY, AND VEGETATION

The project area is in an arid environment with mean annual rainfall averaging 305.9 millimeters (mm) (12.05 inches), with most of the rainfall occurring between November and March (Giambelluca et al. 2013). There are no permanent streams in the area, although gulches may collect water during heavy rain. The Hotel Molokaʻi property is developed and contains landscaped grasses and trees.

HISTORICAL BACKGROUND

Archival background research and literature review examined maps, historical and archival documents, and previous archaeological studies in the vicinity of the project area. Relevant historical maps were georeferenced to determine where traditional Hawaiian or historic features may fall within the project area. The information obtained from these sources was synthesized to present data findings and to evaluate the potential for archaeological and cultural resources in the project area. The following sections focus on the area in the immediate vicinity of the project area; the reader is referred to Tuggle (1993) and Pfennig et al. (2011) for a detailed historical background concerning the south coast of Molokaʻi.

PLACES NAMES

No known legends connected to Kamiloloa were identified during background research; however, a few traditionally named places are in the vicinity of the project area. The *ahupuaʻa* name Kamiloloa can be translated literally as “the tall *milo* tree” (Pukui et al 1974:82). Other named places near the project area are Kalokoʻeli Fishpond (State Inventory of Historic Places [SIHP] Site 50-60-03-00133) and Kaluaʻāloa. Kalokoʻeli can be literally translated as “the dug Pond” (Pukui et al. 1974:78) and is located 100 meters west of the project area. Kaluaʻāloa[2] is a point along the shore where Kamiloloa Ahupuaʻa was divided into two section during the Mahele; it is at the southeast corner of the project area. The name can be translated literally as “the crab hole” (Andrews 1922:642). Finally, the name of the wind in Kamiloloa is Pailua, which can be translated literally as “sickness” (Andrews 1922:514).

TRADITIONAL HISTORY AND LAND USE

Evidence from paleoenvironmental coring suggests human occupation on Molokaiʻi occurred around AD 800–1200 (Denham et al. 1999). Temporary habitation sites have been identified dating to the Early Expansion Period (AD 1200–1400) near Kaunakakai Stream, which is three kilometers west of the current project area (Weisler 1989). This period was followed by the Late Expansion Period (AD 1400–1650), when there was a rapid increase in population (McCoy 2007:1284). It is during this period that fishpond aquaculture is thought to have developed along Molokaʻi’s south shore (Denham et al. 1999). The island also experienced a

[2] Kaluaʻāloa is sometimes mislabeled as “Kalualoa” on historical maps.

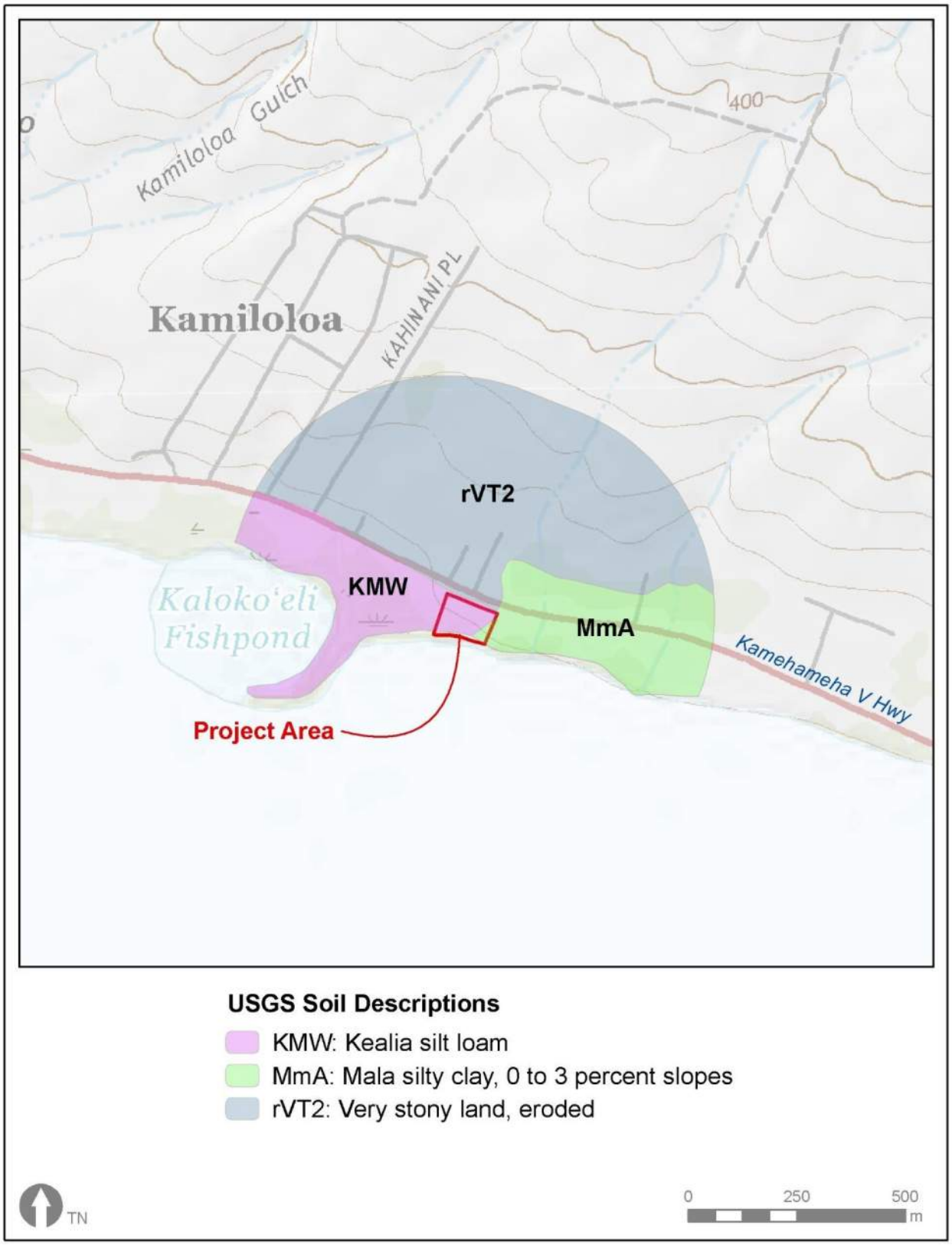

Figure 5. Soil Series Near the Project Area (Data source: USDA/NRCS Soil Survey Center 2014).

shift from marine resource subsistence to domestic animals and agricultures, along with intensive use of quarries (Dixon et al. 1994).

Archaeological evidence in lower Kamiloa is lacking compared to Kaunakakai to the west. According to Tuggle (1993), primary settlements in Kamiloloa were on the coastal plain, and included long-term residences, agricultural systems, temples, and burials (Tuggle 1993:241). Historical records note that *aliʻi* (chiefly class) lived in the area, such as Nāmāhana, the mother-in-law of Kamehameha (Desha 2000:405).

Above the coastal zone, the lower ridge area at Kamiloloa was settled in the late pre-Contact period or early post-Contact period, though no evidence exists of permanent habitation or intensive agriculture (Tuggle 1993:241). Tuggle suggests that lower ridge habitation clusters "may have resulted from population expansion or from the settlement of specialized labor pools related to such activities as fishpond construction, war supply, or sandalwood collection" (Tuggle 1993:242).

Along the coast at Kamiloloa is the 28-acre traditional fishpond Kalokoʻele (SIHP Site 50-60-03-00133). This is a *loko kuapā*, which is a fishpond with a *mākāhā* (sluice gate) that allows ocean water to circulate. Off-shore at Kamiloloa, the waters were known for *heʻe* (octopus): "Formerly the *he'e* found here were the *iʻa kapu* of Bernice P. Bishop. The time for catching them was from November to March 1" (Tape n. d. in Summers 1971:88).

Kamiloloa was likely the site of battles during the pre-Contact and early post-Contact periods. Summers (1971) mentions various battle sites along the south coast, though none in Kamiloloa specifically. However, Kamakau (1991:70–71) describes a battle in the 1700s that occurred when the ruling chief of Oʻahu, Kapiʻiohokalani, invaded Molokaʻi. Fornander offers an account that describes a long bloody battle stretching westward along the shore to Kamiloloa:

> Having landed his army, he marched to Kamalo, and at Kapualei he met the forces of Kapiiohokalani. An obstinate fight ensued, which lasted for four days, without any decisive result; but as Kapiiohokalani retreated to Kawela, it is presumed that he suffered most. On the fifth day the battle was renewed at Kawela, extending as far as Kamiloloa. The Hawaii troops being ranged along the seashore, and the auxiliary Molokai chiefs descending from the uplands with their men, Kapiiohokalani was hemmed in between them, and, after a severe fight from morning till far in the afternoon, he was completely routed with great loss of life, and himself slain. Those who escaped from the battle immediately evacuated Molokai and fled back to Oahu [Fornander 1880:137].

> This famous battlefield may still be seen in the place described, where the bones of the slain are the sports of the winds that sweep over that sandy plain, and cover or uncover them, as the case may be. The numerical strength of the two opposing armies is not mentioned in the legends ; but to judge from the multitude of bones and the number of skulls that are bleaching in the sun when a strong north wind has removed their sandy covering, the numbers engaged on each side must have been reckoned by thousands [Fornander 1880:137].

POST-CONTACT HISTORY AND LAND USE

Post-Contact information concerning Kamiloloa is sparse. During the sandalwood trade from 1812–1829, there was presumably occupation in the area. SIHP Site 50-60-03-00134, Ka lua nā mokuʻīliahi, which can be translated as "The pit (of) the sandal wood ships," is located southwest of Puʻukaeʻo in upland Kamiloloa. The site is a trench measuring 110 feet long, 40 feet wide, and seven feet deep that was used as a means of measuring harvested sandalwood based on the size of a cargo ship's hold. Cooke (1949:61) described its use as follows:

> After the discovery of the Hawaiian Islands [by Capt. Cook], the first commercial venture developed was the obtaining of sandalwood from the forests, which were owned by the

> Chiefs . . . Under the feudal system, ... the common people were sent to the mountains to cut, stack and haul sandalwood. In order to measure the product, trenches were dug to simulate the size and depth of a ship's hold. When these had been filled with sandalwood logs, the Chiefs then could bargain with the captains of trading vessels. After a value was agreed upon, the commoners carried the sandalwood to the shore on their backs [Cooke 1949:61 in Summers 1971:90].

Traditional land divisions of the fifteenth and sixteenth centuries persisted until the 1848 Mahele, which introduced private property into Hawaiian society (Kamakau 1991:54). During the Mahele, the Land Commission required the Hawaiian chiefs and *konohiki* (land agent for the ***ali'i***) to present their claims to the Land Commission. In return they were granted Land Commission Awards (LCAs) for the land quit-claimed to them by Kamehameha III. Land was divided into Crown Lands, Government Lands, and Konohiki Lands. The remaining unclaimed land was then sold publicly, "subject to the rights of the native tenants" (Chinen 1958:29).

In the case of land claims made for Konohiki lands, approval by the Land Commissioners was required before the award was made. If approved, then the awardee obtained a Royal Patent (RP) from the Minister of the Interior, which indicated that the government's interest in the land had been settled with a commutation fee. This fee was typically no more than one-third of the value of the unimproved land. This fee was paid either with cash, or, more commonly, the return of one-third of the awardee's lands (or total value of the lands awarded) (Hammatt 2013:A-3).

The Kuleana Act of 1850 allowed ***hoa'āina*** (common people of the land, native tenants) to make claims to the Land Commission. The new western system of ownership resulted in many losing their land. Often claims would be made for discontiguous cultivated plots with varying crops, but only one parcel would be awarded.

The Crown Lands became Government Lands when the Hawaiian Government was overthrown in 1895, making them public domain for sale by fee simple (Hammatt 2013:A-5). Patents were the certificates issued for the sale of such lands. Beginning in 1900, when Hawai'i became a U.S. territory, the certificates were called Land Patents, or Land Patent Grants (Hammatt 2013:A-5).

Prior to the Mahele, the lands of Kamiloloa were held by Laniheleua. Laniheleua return the western half, which became government land, and retained the eastern half; however, no LCA was issued and the eastern half and it also became government land. Consequently, today Kamiloloa is divided into two sections: Kamiloloa (Government) on the west and Kamiloloa on the east.

As for *kuleana* awards, none were granted in Kamiloloa. The land was mentioned in Native Testimony, which was translated in a study of traditional Hawaiian fishing practices by Maly and Maly (2003). The testimonies mention the ***he'e*** fishing grounds and a long house where ***olonā***[3] was prepared. The following are two testimonies recorded in the Register and Testimony Volumes of the Land Commission:

> Kekuhe, Sworn and testifies: Kaluaaha is where I live now. My parents and grandparents were from Makakupaia and Kamiloloa. I know the boundaries of Kamiloloa. Kamiloloa has a Fishery, from the octopus grounds to where the waves break at Kunahiwa. There at the back of the waves… …Then from Puu Ulaula to Kaulahuki, it is a hill adjoining Makakupaia. From Kaulahuki to Waiulaula, a long house is there in which the old people prepared olona; then from there to the edge of the cliff… …Go from Makaliilii towards the sea, to Puu Pulou; from Puu Pulou go to Puu o Kamalii. From Puu o Kamalii go to the estuary; from the estuary

[3] A shrub (*Touchardia latifolia*) whose bark fiber was used to make fishing nets, nets for carrying containers, and in the base of ti leaf raincoats and feather capes (Pukui and Elbert 1981:333).

> go to Kalokoloa. It is on a reef flat, then go on until the edge of the blue ocean. That is the place that I know [Maly and Maly 2003:365].

> I am a native of Kamiloloa. I was born at Makakupaia. I live at Kaluaaha. My parents were from there (Kamiloloa). This land has a fishery, it is an area set apart for hee, out to Kuuna o Kuuwahine, the boundary from the sea. It is a reef flat… …From there to Waiulaula, the famous thing there is Puu Maniania, the long house where olona was prepared; from there go to the edge of the cliff of Puu o Kamakaliilii… …From Puu Pulou go to Puu o Kamalii and down to the estuary; from there go to Kalokoloa, it is a net fishery, (kuuna) and a reef flat; from there to the hee fishery. That is where we lived with our parents, and from our parents we gained our knowledge [Maly and Maly 2003:366].

At the end of the nineteenth century, nine land grants were awarded in Kamiloloa. The land comprising the land grants is known as Kamiloloa Homesteads. A map of the homestead lots by Wall (1892) is shown in Figure 6. The current project area was within Grant 6128 to Joseph N. Uahinui. A Hawaiian language newspaper advertisement mentions cattle fences in Kamiloloa in the late nineteenth (Kuakoa 1895), indicating that there was ranching the ***ahupua'a***; however, this land use would have occurred in the uplands and not near the current project area.

Historical aerial photos of the project area are shown in Figures 7 and 8. Figure 7 is an oblique photo dating to 1949, which shows Kaloko'ele Fishpond on the left, Kamiloloa Homesteads stretching up the lower ridge slope, and the project area on the coast. The images dated 1950 and 1964 in Figure 8 suggests a residence was present on the property, or at least in use based on the manmade patterns on the landscape.

In 1963, a certificate of title was issued to Rebecca Kealoha Uahinui and Joseph Kiekie Kaahu Uahinui for Grant 6128. A portion of the property in the north side of the highways was subdivided, as shown on the map for Land Court Application1836, which is shown in Figure 9.

In 1966, Hotel Molokai was built in the project area. The original owner and architect was Frank Roberts, who modeled the hotel after architectural styles he had seen traveling in the South Pacific (Wang 2002:7). In 1998, the hotel was remodeled under the ownership of Castle Resorts and Hotels, and today it is owned by Beach Tree Properties.

PREVIOUS ARCHAEOLOGY

Previous archaeological studies near the project area are limited, and to date, no human burials have been recorded within 500 meters. Figure 10 shows the location of previous investigations and known sites in the vicinity, which are summarized in Table 2. The following is a summary of archaeological investigations with relevant findings near the current project area.

The archaeological site nearest to the project area is Kaloko'ele pond, which is designated SIHP 50-60-03-000133. In 1901, the fishpond was recorded as covering 27.6 acres (Cobb 1902:429). Later the pond was described by Dunn as measuring 32 acres. Dunn wrote the following description of Kaloko'ele:

> About 600 feet of the pond wall has been washed away by the action of wave and tide. Some of this rock is scattered about the ocean floor in shallow water. . . long the east wall of the pond and along the inshore line there is a growth of mangrove and akulikuli. . . Within the pond itself are a few small mangrove plants [Dunn n.d. in Summers 1971:88].

The first systematic archaeological research in Kamiloloa dates to the 1980s, when an intensive archaeological survey was carried out on Department of Hawaiian Home Lands property on Moloka'i (Hommon and Ahlo 1983). The survey covered 735 acres in Kalama'ula, Kamiloloa, and Makakupa'ia. A total of 71 archaeological sites were recorded, three of which are within 500

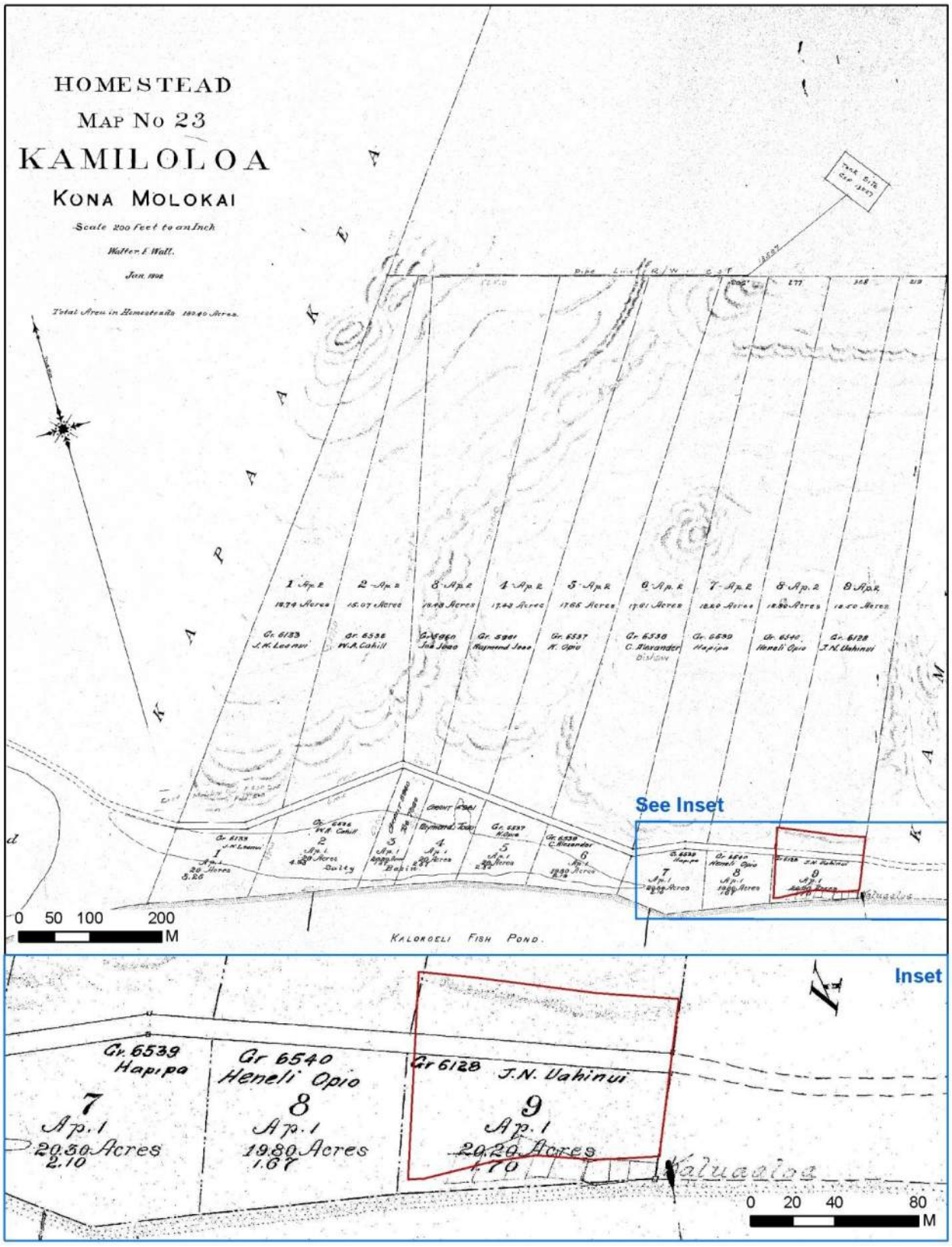

Figure 6. Historic Map Showing Land Grants at Kamiloloa Homesteads (Wall 1892).

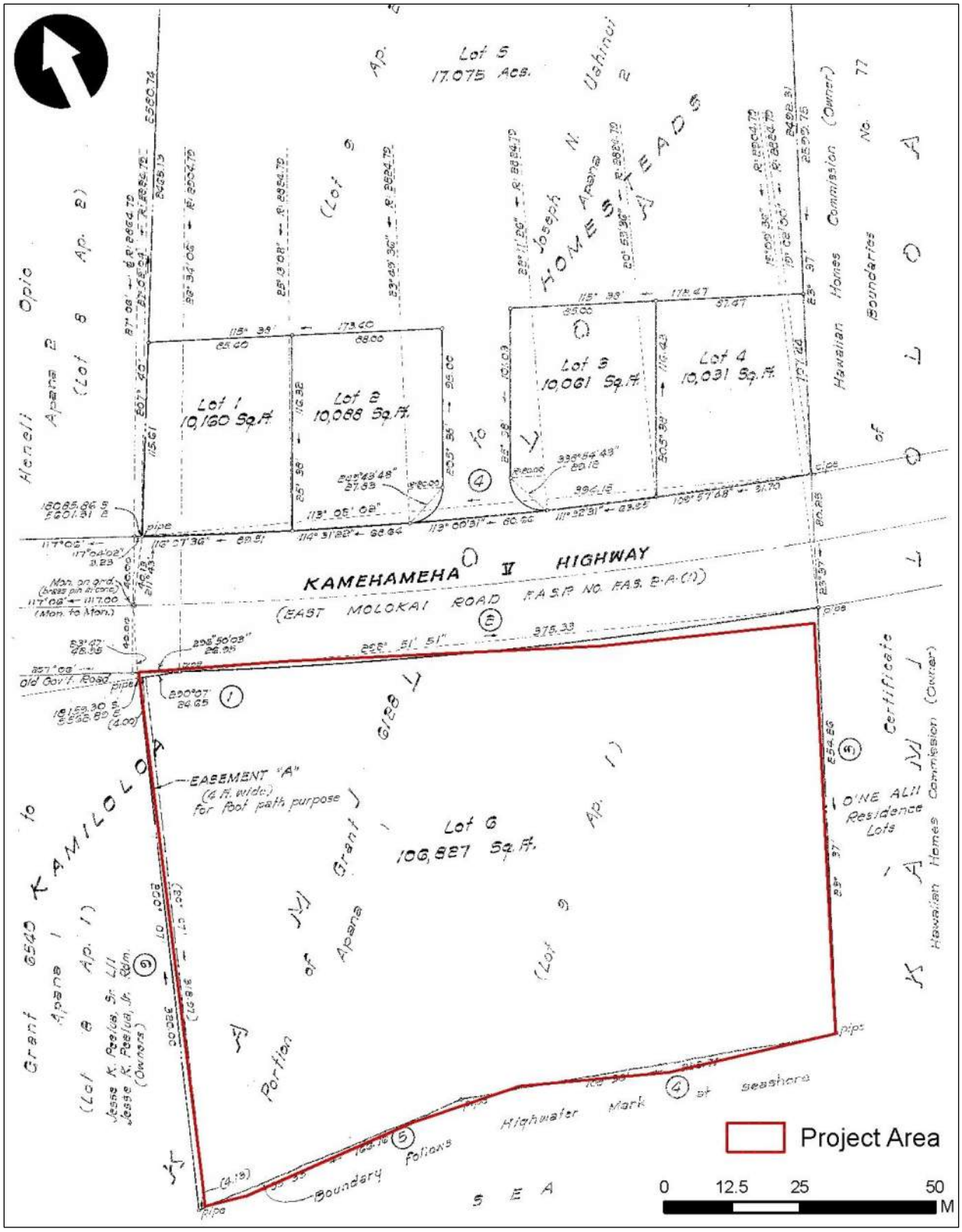

Figure 7. Portion of Map for Land Court Application 1836 (Land Court 1963).

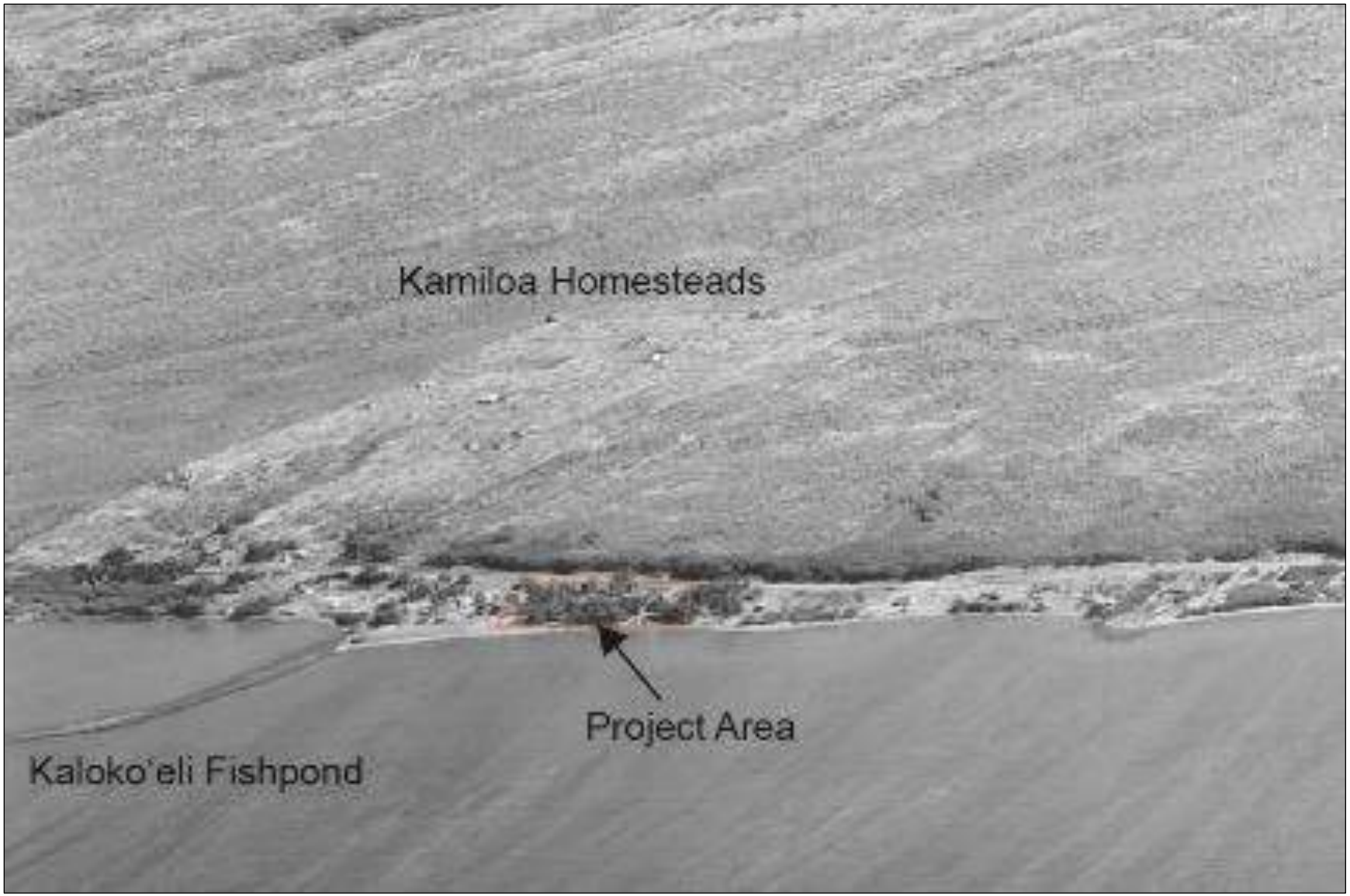

Figure 8. Portion of 1949 Oblique Aerial Photograph of Kamiloloa Homesteads (USGS 1949).

1950

1964

Figure 9. Aerial Photographs Showing the Project Area in 1950 and 1964 (USGS 1950, 1964).

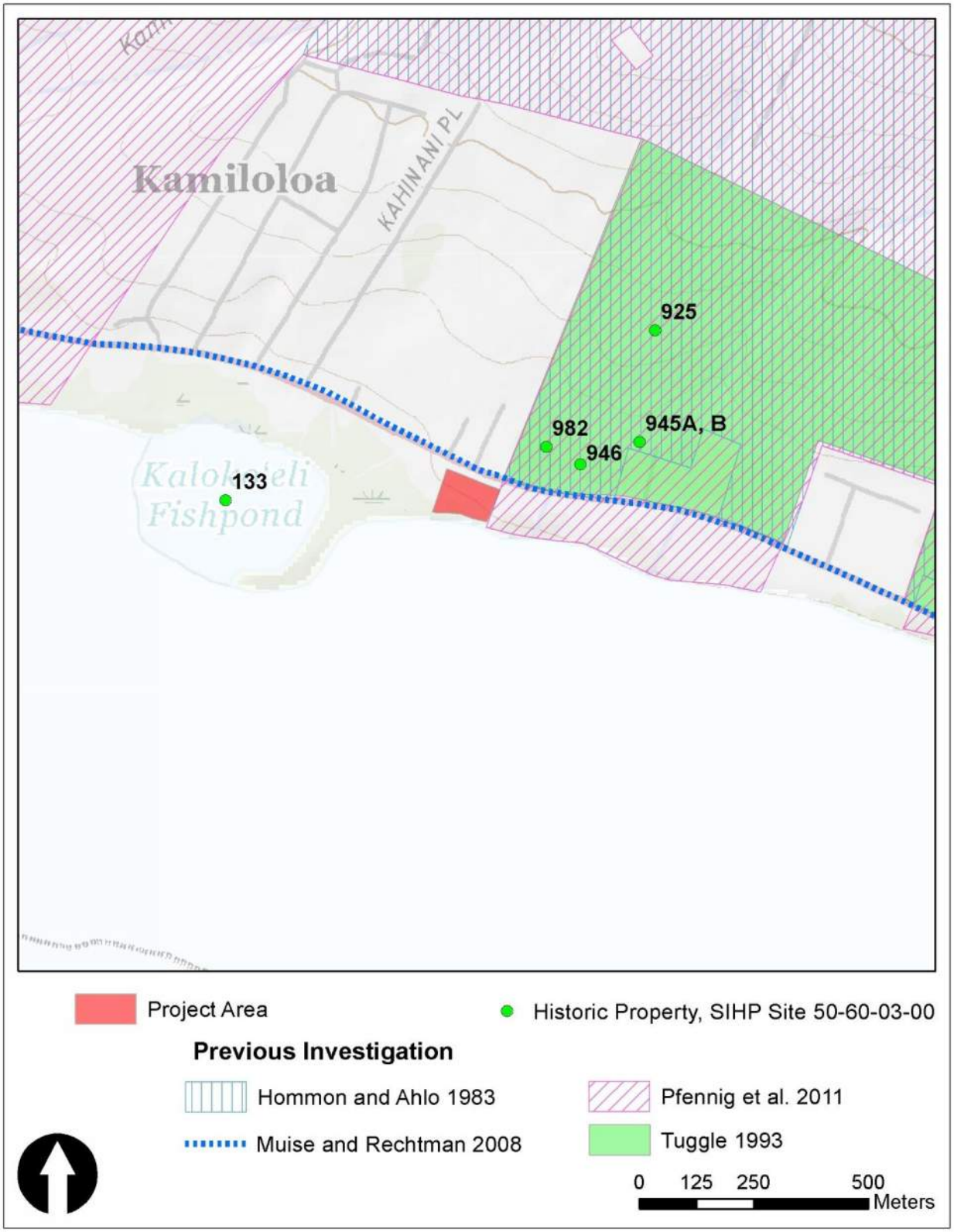

Figure 10. Previous Archaeological Investigations and Known Historic Properties Within 500 Meters of the Project Area.

meters of the current project area. These three sites were included in Tuggle's (1993) subsequent inventory survey and data recovery and are described below.

As previously discussed, Tuggle (1993) conducted archaeological inventory survey and data recovery in the lower ridge zone in Kamiloloa (see Figure 10). This work was within the footprint of the survey by Hommon and Ahlo (1983). Tuggle (1993:281) generally noted that there was no evidence of permanent habitation in the survey area and that permanent habitation in Kamiloloa would have occurred on the coastal plain. Habitation complexes recorded in the lower ridge zone were determined to be "nonelite households, if interpreted within a model of contact Hawaiian culture" (Tuggle 1993:241). A total of four archaeological sites documented by Tuggle (1993) are within 500 meters of the current project area. Three of the sites initially recorded by Hommon and Ahlo (1983), and one site was newly identified. These four sites area described below.

SIHP 50-60-03-00925 was originally recorded in Hommon and Ahlo (1983) as a habitation site, and possibly a burial site, consisting of six structures. Tuggle (1993) conducted mapping and data recovery at the site and determined it to a be habitation complex comprising 35 structures representative of both habitations and camps (Tuggle 1993:238). Two phases of occupation were noted: an early phase indicated by evidence of rebuilding, and a second phase which was the beginning of a small community, but use was brief (Tuggle 1993:242). No human burials were recorded by Tuggle (1993) at the site.

SIHP 50-60-03-00945 was originally recorded by Hommon and Ahlo (1983) as a habitation site consisting of 27 structure and multiple burials. Tuggle (1993) conducted mapping, testing, and data recovery at the site and split the site due to varying preservation recommendations: 945A (a temple) and 945B (habitations and other structures). Tuggle (1993:174) recorded four sets of habitation structures, a temple, and numerous special activity or special function structures. The site was determined to be a late occupation due to the rugged terrain making it not an ideal settlement location. The site was attributed to a possible "late period population expansion, with settlement moving up from the heavily populated coastal plain" or the establishment of communities for specialized purposes, such as support of the fishpond system (either initial construction or subsequent maintenance), increasing the local subsistence base in support of military action, or post-contact activities such as sandalwood collection" (Tuggle 1993:175).

SIHP 50-60-03-00946 was originally recorded as an enclosure in Hommon and Ahlo (1983). Tuggle (1993:5) describes the site as a cattle enclosure and determined the site to not be significant.

SIHP 50-60-03-00982 consists of five structures covering dune and rocky slopes. Test excavations did not reveal an occupation layer and the function of the structures was undetermined (Tuggle 1993:189–191).

ANTICIPATED FINDS

In view of the prior archaeological findings and past land use, there is potential for the presence of traditional Hawaiian subsurface cultural layers or features and human burials in the project area. The project area was likely the site of traditional Hawaiian occupation, which is supported by the presence of Kaloko'eli fishpond to the west and habitation and ritual sites documented by Tuggle (1993) to the northeast. Likewise, evidence of historic period land use is also possible, such as features associated with late nineteenth and early twentieth century homesites. Additionally, Hotel Moloka'i was constructed in 1966 and is over 50 years old; therefore, it is potentially a historic property.

Table 2. Previous Archaeological Studies in the Vicinity of the Project Area.

Reference	TMK(s) (2) or Location	Nature of Study	SIHP* Site 50-60-03-	Results
Summers 1971	Island-wide	Archaeological Reconnaissance Survey	193	Kalokoʻele Fishpond
Hommon and Ahlo1983	Kalamaʻula,Kapaʻakea, Kamiloloa, and Makakupaʻia	Archaeological Reconnaissance Survey	(see Tuggle 1993)	Three sites later rerecorded by Tuggle (1993)
Tuggle 1993	5-4-003:031 and 003 por./ Lower Kamiloloa	Archaeological Inventory Survey and Data Recovery	925	Habitation complex
			945	Habitation complex and temple
			946	Cattle enclosure
			982	Five structure of undetermined function
Muise and Rechtman 2008	Kalamaʻula to Aliʻi Fishpond	Archaeological Monitoring	-	No significant finds
Pfennig et al. 2011	DHHL property: 25 acres in ʻUalapuʻe Ahupuaʻa; 264 acres in Kapaʻakea, Makakupaʻia, and Kamiloloa Ahupuaʻa; 629 acres in Kalamaʻula and Pālāʻau Ahupuaʻa; and 8,055 acres in Hoʻolehua Ahupuaʻa	Archaeological Literature Review and Assessment	-	A high potential for archaeological sites and cultural materials on the surface of areas not previously surveyed and subsurface anywhere in the project area not yet developed

*State Inventory of Historic Places

1

2

SUMMARY AND ASSESSMENT

The proposed Hotel Molokai Wastewater Treatment System Improvements project is within the 9924.5 sq m (2.45 ac) TMK parcel (2) 5-4-022:001 at Kamiloloa Beach on Molokaʻi Island (see Figure 1). The project proponent and land owner is Hotel Molokaʻi. The project scope of work primarily includes demolition and installation of sewer lines. An archaeological literature review that addresses historical, cultural, and archaeological background was conducted in order to evaluate any potential effect on historic properties in the project area, and to recommend mitigation of any adverse effect, if warranted. This work was carried out in accordance with Hawaii Revised Statutes (HRS) Chapter 6E.

Background research indicates that coastal Kamiloloa was utilized for dryland agriculture and habitation in the pre-Contact and early post-Contact periods. After the Mahele, Kamiloloa Homesteads was established when land was sold fee simple as Land Grants (see Figure 6). Kamiloloa Homesteads formerly included the current project area, which was Grant 6128 to Joseph N. Uahinui. Based on historic period newspaper articles, cattle grazing occurred in Kamiloloa, likely in the uplands. Modern development of the property occurred in 1966, when Frank Roberts designed and built Hotel Molokaʻi.

Based on background research and previous archaeological findings in the vicinity, there is potential for traditional Hawaiian historic properties and human burials in the project area. Historic period subsurface cultural deposits are possible, which may yield evidence of nineteenth or early twentieth century land use (e.g. evidence of habitation or structures associated with Grant 6128). Also, Hotel Molokaʻi is more than 50 years old and is potentially a historic property.

RECOMMENDATIONS

It is currently unknown to what extent previous construction in the project area has disturbed subsurface soils, including to what depth fill deposits extend. At this time archaeological monitoring is recommended to ascertain the subsurface conditions in the project area and to determine the presence or absence of subsurface historic properties related to past land use documented in this report.

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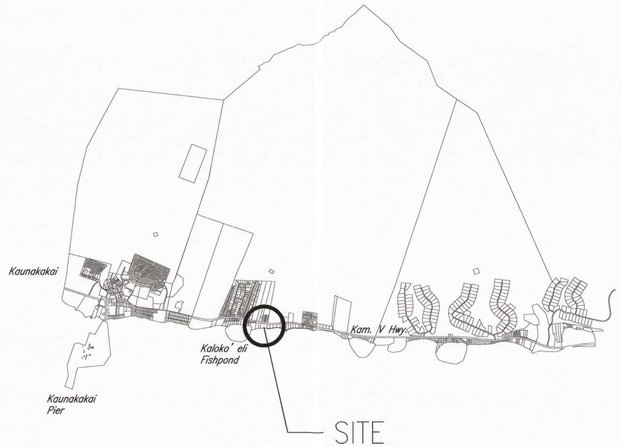
Appendix C:

Certified Shoreline Survey Map &

Site Plans with Shoreline Setback Line



Location Map
Not to Scale

18,159.30 S
5,562.89 E
"PUU LUAHINE"

1/4" pipe (found & adopted)

290°07' — 24.65

3/4" pipe (found)

R=2,904.79

265°43'06"

To Kaunakakai

KAMEHAMEHA V HIGHWAY
(East Molokai Road F.A.S.P. No. 2-A-(1))

292°51'51" — 375.33

197°09'36"

3/4" pipe (found)

283°37' — 254.26

200°07' — 320.00

Lot 6
(Map 1)
106,827 Sq. Ft.
T.M.K.: (2)5-4-002: 001
Owner: Hotel Molokai-Condo Master

Lot 8
T.M.K.: (2)5-4-002: 015

EASEMENT A (4-ft wide)
(For Foot Path Purposes)

Gravel Parking

Ground

Building

conc. walkway

EASEMENT 1
(For Lanai Purposes)

EASEMENT 2
(For Lanai Purposes)

EASEMENT 3
(For Fill Purposes)

Conc. Pavement

Swimming Pool

Conc. Planter

Open Restaurant/Bar

Posts (typ)

Torches (typ.)

95°33' — 166.76

108°30' — 222.74

1/2" pipe bent (found)

E.O.

7°44' 27.94 (tie)

stump

edge vegetation

Top Bank

Bot. Bank

Boundary follows Highwater Mark at Seashore (Map 1)

Shoreline follows along debris line as surveyed June 8, 2020

edge water

OCEAN

EASEMENT 4
(Concrete Pool Deck & Loose Rocks Purposes)

Shoreline follows along debris line as surveyed on June 8, 2020

Shoreline follows along bottom of wall as surveyed on June 8, 2020

Columns

Eave

Shed

posts

Fallen Tree Stump

CRM Wall

Rock Wall (damaged)

mh

co

gm

icv

Conc. slab

Conc. Header

The shoreline as delineated in red is hereby certified as the shoreline as of

SEP 29 2020

Chairperson, Board of Land and Natural Resources

Lot 1
T.M.K.: (2)5-4-006: 001

Legend:

Bot.	Bottom
co	Cleanout
conc.	concrete
crm	concrete rubble masonry
E.O.	Electric Outlet
gm	gas meter
icv	irrigation control valve
mh	manhole

Palm Tree
Coconut Tree
Tree

Notes:
1. Azimuths and coordinates as shown referred to Government Survey Triangulation Station "PUU LUAHINE" △.
2. Shoreline Photographs taken on June 8, 2020 at 9:37 am.
3. ◁1▷ Indicates location and direction of photograph.
4. Property Address: 1300 Kamehameha V Hwy, Unit C504 Kaunakakai, HI 96748

SHORELINE SURVEY
HOTEL MOLOKAI
Lot 6 (Map 1)
of Land Court Application 1836
Kamiloloa 1, Molokai, Hawaii

SHEET 1 OF 2 SHEETS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

CHAD T. KODAMA
LICENSED PROFESSIONAL LAND SURVEYOR
No. 11249
HAWAII, U.S.A.

This work was prepared by me or under my supervision.
Chad T. Kodama
Chad T. Kodama
Licensed Professional Land Surveyor
Certificate No. LS-11249 Exp. 4/30/22

Date: July 3, 2020

Project No. 2020004-03

Tax Map Key: (2) 5-4-002: 001

CONTROLPOINT SURVEYING, INC.
615 PIIKOI STREET, SUITE 700
HONOLULU, HAWAII 96814

24" x 36" = 6.0 sq. ft.

Proposed Action outside of the Shoreline Area.

GENERATOR

TREATMENT TANKS, TYP.

EQUALIZATION TANK
SL-3 STA. 1+00
SL-2 STA. 1+00
BEGIN SEWERLINE 2
BEGIN SEWERLINE 3

PANEL "S"

TRANSFER SWITCH

TRAV. "VALVE"
"+" ON RIM OF WATER VALVE
ELEV.=9.60

SL-1
STA. 3+16.33
END SEWERLINE 1

PROPERTY LINE, TYP.

TRUE NORTH
SCALE: 1 in. = 20 Ft.

KEY PLAN
NOT TO SCALE

LEGEND:
- FM — SEWER FORCEMAIN
- SEWERLINE
- P — ELECTRICAL LINE

SEWERLINE 1
FOR PROFILE
SEE SHEET CU201

SEWERLINE 5
FOR PROFILE
SEE SHEET CU205

SEWERLINE 3
FOR PROFILE
SEE SHEET CU203

SEWERLINE 5
FOR PROFILE
SEE SHEET CU204

SEWERLINE 2
FOR PROFILE
SEE SHEET CU202

SEWERLINE 6
FOR PROFILE
SEE SHEET CU206

TMK: (2) 5-4-002:001

TMK: (2) 5-4-006:001

TMK: (2) 5-4-002:015

TRAV. "P-1"
MAG NAIL
ELEV.=4.82

TRAV. "K-1"
"+" IN CONC.
ELEV.=4.74

TRAV. "RES-1"
"+" IN CONC.
ELEV.=4.95

TRAV. "HIROS"
60d NAIL
ELEV.=4.99

SL "2" STA. 3+18.87
=SL "4" STA. 1+00
=SL "5" STA. 1+00
BEGIN SEWERLINE 4
BEGIN SEWERLINE 5

SL-2
STA. 3+43.23
END SEWERLINE 2

SL-3 STA. 2+97.33
=SL-1 STA. 1+00
BEGIN SEWERLINE 1
END SEWERLINE 3

LIFT STATION #2

LIFT STATION 1

EXIST. LIFT STATION

EXISTING SERVICE EQUIPMENT

EXISTING DISTRIBUTION PANEL "K"

EXISTING GREASE INTERCEPTOR

CONNECT TO EXISTING

CONNECT TO EXISTING FORCEMAIN

LOCATE AND CONNECT EXIST. SERVICE

71.19' SHORELINE SETBACK LINE

71.19' Shoreline Setback Line

SHORELINE FOLLOWS ALONG BOTTOM OF WALL AS SURVEYED ON JUNE 8, 2020

Proposed Electrical Line within the Shoreline Area.

OVERALL SITE AND UTILITY PLAN
SCALE: 1" = 20'

GRAPHIC SCALE:
20' 10' 0 20' 40'
SCALE: 1" = 20'

PRINTED: 10/21/20

C:_CIVIL 3D PROJECTS\2018_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU100 OVRL SITE UTIL PLAN.DWG 10/19/2020 7:16 PM MRICKS

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

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

OVERALL SITE AND UTILITY PLAN

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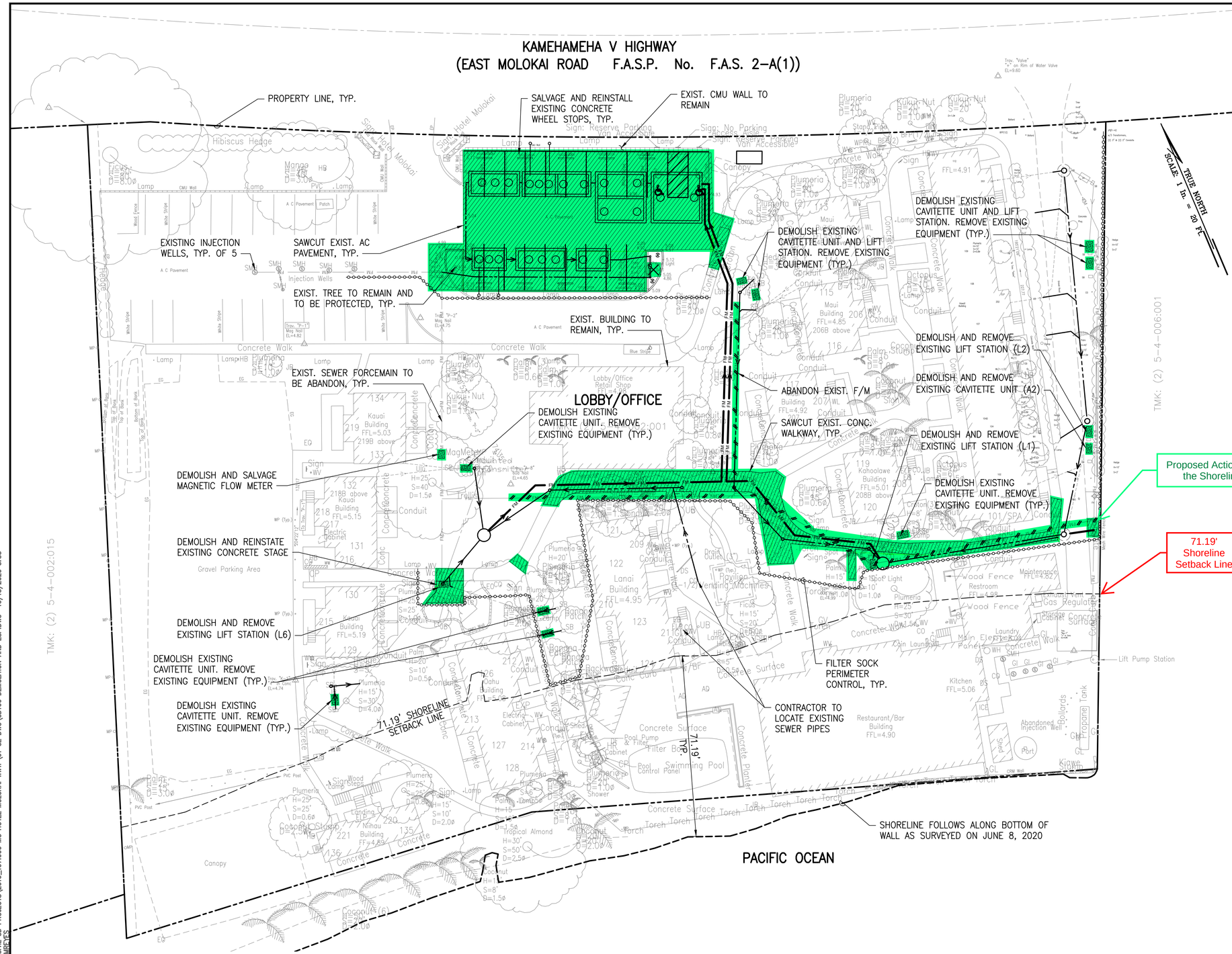
DATE
JUNE 26, 2020

SHEET NUMBER
CU100

OF SHEETS

KAMEHAMEHA V HIGHWAY
(EAST MOLOKAI ROAD F.A.S.P. No. F.A.S. 2-A(1))



BEST MANAGEMENT PRACTICES (BMPS):

1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED UNTIL COMPLETION OF THE PROJECT AND THE GROUND COVER FULLY ESTABLISHED. CHECK AND REPAIR ALL EROSION CONTROL MEASURES AS NECESSARY.
2. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN TWENTY (20) CALENDAR DAYS PRIOR TO SITE DISTURBANCE.
3. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN FIVE (5) CALENDAR DAYS.
4. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING.
5. GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF ROADWAYS FROM MUD, DIRT, AND DEBRIS.

LEGEND:

- PROPERTY LINE
- DEMOLISH EXISTING CONCRETE WALKWAY, AC PAVEMENT AND CURB
- FILTER SOCK PERIMETER CONTROL SEE DET. 1/CD501
- DEMOLISH AND REMOVE EXISTING UTILITIES
- DEMOLISH AND REMOVE EXISTING LIFT STATION, AND CAVITETTE UNIT
- TREE REMOVAL

GRAPHIC SCALE:

20' 10' 0 20' 40'

SCALE: 1" = 20'

DEMOLITION, EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

SSFM International, Inc.
82 Pulehu Place, Suite 201
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HOTEL MOLOKAI
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TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

DEMOLITION, EROSION AND SEDIMENT CONTROL PLAN

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Appendix D:

Preliminary Engineering and Design Plans

SSFM International

PRELIMINARY ENGINEERING REPORT

Hotel Molokai Wastewater Treatment System Improvements

15 January 2020

SUBMITTED TO:

The AOAO of Hotel Molokai
672 Old Mill Road PMB #311
Millersville MD 21108

Attention: Suzzane Vaaler
Project Manager

SUBMITTED BY:

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I. Introduction

A. Background and Objectives

Hotel Molokai is situated on the south shores of Molokai, along Kamiloloa Beach, approximately 1.5miles east of Kaunakakai. The project site is located on TMK (2) 5-4-002:001. The project site is quite flat and gently slopes in the mauka-makai direction at less than 1% gradient. The majority of the site is currently used for guest accommodations, hotel parking and Luau facilities on the west side of the site. The open space on the west side of the site also serves as additional parking for hotel and Luau guests. The hotel complex includes 13 separate buildings and accommodation units with 57 hotel rooms, plus a restaurant and bar. The project location plan is included on **Figure 1**.

The existing wastewater collection system includes nine (9) cavitette type systems, equipped with a small primary chamber and aeration units, with course bulb diffusers. The cavitette units are scattered about the site, located within the landscaped and grassed areas. There are no as-built drawings of the wastewater collection and treatment units. A topographic survey was completed in May, 2018 and the existing system information is presented on **Figure 1**. The treated wastewater is then pumped up to the parking lot area, into the underground injection chambers.

The treated effluent force main includes a magnetic flow meter and the wastewater maintenance personnel have been recording the discharge volumes as well as obtaining grab sample results of the effluent parameters.

On occasion, the effluent parameters have exceeded the permit level, and the Hawaii State Department of Health, Wastewater Branch (DOH-WWB) has directed the AOAO Hotel Molokai to proceed with the design and construction of the wastewater treatment system to ensure the effluent is in continual compliance with permit requirements.

A Corrective Action Plan (CAP) was submitted on April 19, 2018 to the DOH-WWB, and was approved on April 20, 2018. The CAP has been updated and re-submitted to DOH in parallel with this engineering report submittal. The CAP included construction of the proposed improvements prior to November 1, 2022. In support of the approved CAP, the objective of the enclosed Preliminary Engineering Report is to present a summary of the preliminary analysis and the proposed improvement works that will ensure the wastewater treatment system is able to continually meet the permitted effluent parameters, in a cost effective manner and recognizes the impact on the existing hotel operations.

B. Regulatory Requirements

The operations of the Hotel Molokai wastewater treatment and disposal system is governed and permitted under Chapter 62 of Title 11, Hawaii Administrative Rules (HAR), entitled "Wastewater Systems" and its amendments.

The wastewater treatment works will be designed in accordance with the criteria presented with HAR Title 11, Chapter 62. The applicable planning and design criteria have been summarized below for reference.

- All treatment works shall be provided with a continuous effluent flow measuring device such that daily wastewater flow can be determined;

- Since the projected flow is less than 100,000 gallons per day the flow measuring device is not required to include recording equipment;
- Treatment units shall not be less than 25 feet from property lines nor less than 10 feet from any building or swimming pool;
- Disposal systems shall not be less than 5 feet from a property line nor less than 5 feet from any building;
- Enclosed, locked and ventilated equipment rooms shall not be less than 5 feet from property lines nor less than 10 feet from dwelling units;
- The owner or operator shall provide standby power for all lift stations to prevent unauthorized discharges during a primary power outage;
- Flow equalization shall be provided unless the engineer submits written justification that changes in normal daily flow rate or seasonal occupancy rates shall not affect the treatment units' ability to meet continuous compliance.

The treatment works effluent and other parameters shall not exceed the limits as summarized in the following table.

Table 1 – Treated Effluent Limitations

Parameter	Average Effluent Concentration	Grab Sample Maximum Concentration
BOD_5	30 mg/L	60 mg/L
TSS	30 mg/L	60 mg/L

C. Flood Protection

In November 2015, the Federal Emergency Management Agency (FEMA) updated the Flood Insurance Rate Maps (FIRM) for Molokai. The new FIRM mapping increased the Base Flood Elevation (BFE) of the coastal plain area surrounding Hotel Molokai from three (3) feet to seven (7) feet. A copy of the most current FIRM Mapping for the project site is included as **Figure 2**.

Any structures, equipment or habitable areas must be compliant with the Base Flood Elevations as shown on the latest FEMA mapping sheets, and shall be constructed above the Base Flood Elevation.

If fills, site grading or buildings are constructed above the BFE, then a No-Rise Certification must be completed indicating that the site alterations will not increase flood heights in the area.

D. Maui County Shoreline Setback Determination Requirements

This application is to be used for making a determination of whether the shoreline setback line is properly calculated and whether the applicant has properly located the setback line on a surveyed plot plan or site plan of the applicant's parcel. The Director of Planning will

issue either a Shoreline Setback Determination (SSD) or a Shoreline Setback Approval (SSA).

The shoreline setback assessment application requires:

1. Evidence that the applicant is the owner or lessee of the record of real property
2. A notarized letter of authorization from the legal own if the applicant is not the owner.
3. A valid state-certified shoreline survey
4. Construction Plans
5. Site plans
6. Photographs of the shoreline area
7. Description of the shoreline and shoreline areas in narrative form.

SMA Assessment Application/ SMA minor

A Zoning & Flood Confirmation Form must be completed and signed by the Department of Planning prior to submittal of the SMA Assessment.

Upon submittal of a completed SMA assessment application, the Department of Planning will review to determine whether the proposed action qualifies as "Development." Upon review, the Department shall make a determination and notify the applicant that the proposed action is either: (1) Exempt, (2) requires a SMA Minor Permit, (3) requires a SMA Major Permit, (4) requires a SMA Emergency Permit, or (5) cannot be processed due to inconsistencies with the countywide policy plan, applicable island plan, community plan, and zoning.

SMA Use Permit (MAJOR)

The purpose of the Special Management Area Use permit is to regulate any use, activity, or operation that qualifies as "development", and has a total cost fair market value of $500,000 or more; or has significant adverse environmental or ecological effect within the Special Management Area.

The processing procedures for the SMA Use Permit are as follows:

1. Applicant submits application to Maui County Planning
2. The Department reviews the application
3. The Department transmits the document to relevant Government Agencies for comments and recommendations.
4. Applicant addresses agency comments
5. Planning Commission reviews and acts upon the application.

II. Wastewater Flows and Loads

A. Estimate of Wastewater Flow Rates

The hotel accommodations include 57 hotel rooms, including 44 units with two-person occupancy and 12 units suitable for four-person occupancy, for a total population of 136

guests, plus one room used as a spa. In addition, the hotel provides one of the few island restaurants and bars. The hotel accommodations include 20 units with a kitchenette. The kitchenettes include a small hot-plate/stove and small sink. There are no ovens, dishwashers or in-sink aerators (garbage disposal units) in the rooms. Table 2 provides a summary on the number of units and the guests per unit. Figure 1 presents a site plan of the hotel complex.

The hotel provides on-site laundry for the room cleaning services and is equipped with two washing machines. In addition, guest laundry facilities are available and this includes two coin operated washing machines.

The onsite amenities also include a 104-seat restaurant and 30-seat bar/lounge. The total staff that would be on shift during the peak day is 18 workers including the front desk, cleaning staff and restaurant staff.

Table 2 – Hotel Molokai, Guests Per Unit

Room	Bed	Guests		Room	Bed	Guests
101	NONE			201	KTT	4
102	Q	2		202	KTT	4
103	F	2		203	KTT	4
104	TT	2		204	KTT	4
105	F	2		205	K	2
106	TT	2		206	KTT	4
107	F	2		207	K	2
108	F	2		208	KTT	4
109	F	2		209	KTT	4
110	F	2		210	KTT	4
111	F	2		211	KTT	4
112	Q	2		212	KTT	4
113	K	2		213	K	2
114	F	2		214	K	2
115	K	2		215	KF	4
116	F	2		216	K	2
117	TT	2		217	K	2
118	F	2		218	KTT	4
119	K	2		219	KTT	4
120	TT	2		220	K	2
121	K	2		221	K	2
122	F	2				
123	K	2				
124	F	2				
125	TT	2		57 TOTAL ROOMS		
126	TT	2				
127	TT	2		136 Guests		
128	Q	2				
129	TT	2				
130	TT	2				

Room	Bed	Guests			Room	Bed	Guests
131	F	2					
132	F	2					
133	F	2					
134	F	2					
135	K	2					
136	K	2					

DOH-WWB Design Criteria

The design of the wastewater collection and treatment system upgrades, to the extent possible, will be based on the Hawaii Administrative Rule, Chapter 11-62, as made available from State of Hawaii, Department of Health Wastewater Branch website. The following presents a summary of the design flow rates that have been utilized in the assessment of various upgrade alternatives.

Table 3 – Per Capita Flow Rates

Facility	Daily Wastewater Flow
Hotel Room	50 gal/day/guest
Hotel Room with Kitchenette	60 gal/day/guest
Restaurant	50 gal/day/seat
Bar/Lounge	15 gal/day/seat
Staff	20 gal/day/worker
Hotel Laundry	300 gal/day/machine
Guest Laundry	300 gal/day/machine

The DOH criteria does not include an allowance for hotel units with in-room cooking facilities, however we have included an additional 10 gal/day/person to allow for the kitchenette. This amounts to an additional 20 gal/day for rooms with double occupancy and 40 gal/day for units with 4-person occupancy for each unit with a kitchenette.

Based on the above criteria, the design flows rates are presented in the following table.

Table 4 – Summary of Design Flows

Unit Number	Population	Kitchenette	Unit Flow Rate (gal/day)	Daily Flow (gallons)
101	0		50	0
102	2		50	100
103	2		50	100
104	2	1	55	110
105	2		50	100
106	2		50	100
107	2		50	100
108	2		50	100
109	2		50	100

Unit Number	Population	Kitchenette	Unit Flow Rate (gal/day)	Daily Flow (gallons)
110	2		50	100
111	2		50	100
112	2		50	100
113	2		50	100
114	2		50	100
115	2		50	100
116	2		50	100
117	2		50	100
118	2		50	100
119	2		50	100
120	2		50	100
121	2		50	100
122	2		50	100
123	2		50	100
124	2		50	100
125	2		50	100
126	2		50	100
127	2		50	100
128	2	1	55	110
129	2		50	100
130	2		50	100
131	2		50	100
132	2		50	100
133	2		50	100
134	2		50	100
135	2		50	100
136	2		50	100
201	4	1	60	240
202	4	1	60	240
203	4	1	60	240
204	4	1	60	240
205	2		50	100
206	4	1	60	240
207	2	1	60	110
208	4	1	60	240
209	4	1	60	240
210	2	1	60	110
211	4	1	60	240
212	4	1	60	240
213	2	1	50	100

Unit Number	Population	Kitchenette	Unit Flow Rate (gal/day)	Daily Flow (gallons)
214	2	1	50	100
215	4	1	60	240
216	2	1	50	100
217	2	1	50	100
218	4	1	60	240
219	4	1	60	240
220	2		50	100
221	2		50	100
Restaurant	104 seats		50	5200
Bar/Lounge	30 seats		15	450
Hotel Laundry	2 machines		300	600
Guest Laundry	2 machines		300	600
Staff	18		20	360
Total Design Flow				**14,570 gal**

Although the peak day design flow rates are to be based upon the DOH-WWB criteria as presented above, the actual flow rates will vary depending upon hotel occupancy and restaurant operation. The peak instantaneous flow rate is an important parameter used to size the hydraulic facilities. The hotel wastewater treatment facilities do not have recording instrumentation to document the peak instantaneous flow rates so these values must be estimated To estimate the peak instantaneous flow rate, the Babbitt Formula was used to determine a peaking factor. The Babbitt formula is presented as follows:

$PF= 5/p^{0.2}$

Where; P is the Population in thousands.

To estimate the peak instantaneous flow rates the peaking factor was applied to the DOH Daily Wastewater design flow rate. The peaking factor was estimated based on the contributing population for each treatment unit and ranged from 7.7 to 12.1. A summary of the estimated flow rates is presented in Table 5.

Table 5 – Summary of Design Flow Rates

Wastewater Treatment Unit	Daily Wastewater Flow (gal/day)	Peak Instantaneous Flow (gpm)
Existing A1	1490	9.8
Existing A2	1620	11.2
Existing A3	5840	31.2
Existing A4	640	5.4
Existing A5	1200	8.9
Existing A6	860	6.8
Existing A7	1000	7.8
Existing A8	880	7.0
Existing A9	1040	8.7
Total	**14,570**	**96.9**

A copy of the existing schematic flow diagram is included as **Figure 3**.

B. Sewage Loading

The wastewater characteristics have been estimated using typical composition of untreated domestic wastewater, from Metcalf & Eddy, Third Edition. In recognizing the impact of the restaurant, the concentration of the untreated effluent from the restaurant is considered as *strong*, while the remaining areas would be considered as *medium* concentration. As such, the average BOD_5 from the restaurant is estimated at 500 mg/L, and the TSS is estimated to be in the range of 450 mg/L. The average BOD from the remaining hotel complex is estimate at 250 mg/L and the TSS concentration is estimated to be in the range of 250 mg/L.

Table 6 - Estimated Sewage Loading

	Daily Design Flow	
	BOD_5 (lb/day)	**TSS (lb/day)**
Restaurant	21.7	19.5
Hotel	19.5	19.5
Total	41.2	39.1

III. Wastewater Treatment Options

A. Summary of Options Reviewed

Using the design flow rates as estimated using the DOH-WWB criteria, two separate improvement options were evaluated as part of the preliminary engineering review. These options are presented below and include the following:

Option 1 – Consolidate the treatment units but provide more than 1 unit to facilitate phased implementation and minimize the impact on hotel operations.

Option 2 – Provide a centralized wastewater treatment facility to accommodate the entire hotel and resort complex.

B. Option 1 – Multiple Wastewater Treatment Units

Option 1 includes the installation of three (3) wastewater treatment units that would consolidate the existing nine (9) cavitette units. The objective is to place the new components within the same general area as the existing treatment units, utilizing the existing landscaped and turf areas. The treatment units have been proposed in areas that are accessible for maintenance, but attempting to minimize the impact on the hotel operations.

The design basis for the option includes a submerged fixed biofilm reactor such as a BIONEST unit. The submerged fixed film reactor is a relatively simple and cost-effective type of extended aerobic attached growth process. This process uses support media to retain an active biomass to reduce the influent BOD and TSS levels. The fine bubble diffusers are used with the media to provide improved air dispersal and low level of blockage due to growth of the biological film.

As noted above, this option includes three (3) separate treatment units, and each unit will discharge the treated effluent to the existing underground injection chambers (UIC), that are located within the upper parking lot.

The following table provides a summary of the flow rates at each of the proposed treatment units.

Table 7- Summary of Treatment Unit Flow Rates, Option 1

Wastewater Treatment Unit	Daily Design Flow (gal/day)	Peak Instantaneous Flow (gpm)
Treatment Unit 1		
Existing A3	5840	31.2
Existing A4	640	5.4
Total Treatment Unit 1	6480	36.6
Treatment Unit 2		
Existing A1	1490	9.8
Existing A2	1620	11.2
Existing A5	1200	8.9
Total Treatment Unit 2	4310	30.0
Treatment Unit 3		
Existing A6	860	6.8
Existing A7	1000	7.8
Existing A8	880	7.0
Existing A9	1040	8.7
Total Treatment Unit 3	3780	30.3
Total	**14,570**	**96.9**

Treatment Unit 1

Treatment Unit #1 will be located near the east property boundary and is intended to replace the existing aeration units A3 and A4. The primary tanks have been sized to provide 1.5-times the design flow rate and have been generally placed in the vicinity of the existing cavitette units. The peak design flow rate for the treatment unit is estimated at 6,480 gpd and includes a 10,000 gal primary tank (PT-1) and a 10,000 gal tank for the submerged bioreactor. A copy of the schematic flow diagram is presented as **Figure 4**.

Considering the proximity to the rear access lane along the eastern boundary, it is anticipated that the bioreactor tankage would likely be a cast-in-place concrete tank, designed to withstand occasional vehicle loading. Considering the limitations on Molokai to ship, unload and lift large tanks, it is unlikely that large pre-cast concrete tanks would be a viable option.

The treated effluent would then be pumped from the outlet of the treatment unit to the existing UIC inlet connection. A preliminary layout of the proposed equipment locations and piping alignments is presented in **Figure 5**. As shown in the preliminary equipment layout, the primary tank and the treatment unit tanks are located approximately 6 feet from the east property line, to ensure they are not within the existing access lane. As such the units do not meet the minimum DOH-WWB setback requirement of 25 feet from property lines. A variance from DOH-WWB would be required in order to place the units inside the minimum setback distance.

Treatment Unit 2

Treatment unit #2 would be located to the east of the parking lot, west of the Maui Buildings. This treatment unit is intended to replace cavitette units A1, A2 and A5. The primary settling tanks have been located near the existing cavitette units and have been sized based on 1.5-times the design flow rate. Three primary tanks have been proposed, with a total volume of 7,000 gal. The treatment unit is situated to the east of the parking lot and includes a 7,000 gal fiberglass reinforced plastic (FRP) tank. The peak design flow rate for Treatment Unit # 2 is estimated to be 4,310 gpd. Where possible, and when not subject to traffic loading, the design basis includes the use of FRP tanks since these are considerably lighter than concrete tanks, and can generally be accommodated by standard excavation equipment. With the shallow water table, anti-buoyancy provisions must be included in the design and construction to ensure that the buried tanks are adequately protected from flotation and hydrodynamic forces.

The treated effluent would then be pumped from the outlet of the treatment unit to the existing UIC inlet connection point. A preliminary layout of the proposed equipment locations and piping alignments has been presented in **Figure 4**. As shown in the preliminary equipment layout, primary tank #3 (PT-3) is located approximately 5 feet from the Kahoolawe Building. As such the unit does not meet the minimum DOH-WWB setback requirement of 10 feet from buildings. A variance from DOH-WWB would be required in order to place the units inside the minimum setback distance.

Treatment Unit 3

The third treatment unit would be situated west of the Kauai Buildings and south of the parking lot. The treatment unit would be placed within the landscaped area south of the parking lot to avoid vehicle loading imposed on the tank. The treatment unit has been sized to replace cavitette units A6, A7, A8 and A9. Primary settling tanks will be placed generally in the same locations as the existing aeration units and have been sized based on 1.5-times the design flow rate. The peak design flow rate for this treatment unit is estimated at 3,780 gpd and includes a 6,000 gal FRP tank, equipped with the bioreactor media and fine bubble air diffusers.

The treated effluent would then be pumped from the outlet of the treatment unit to the existing UIC inlet connection. A preliminary layout of the proposed equipment locations and piping alignments is presented in **Figure 5**.

C. Option 2 – Centralized Wastewater Treatment Unit

Option 2 includes the installation of a more centralized wastewater treatment unit which would replace the existing nine (9) cavitette units. The objective is to place the new treatment unit within the upper parking lot, to provide as much separation from the hotel units as possible, minimize the challenges associated with dewatering, and to provide greater economy of scale as it relates to treatment capacity and maintenance requirements.

In order to maintain the available parking for hotel guests, the design intent is to locate the treatment unit within a traffic rated FRP tank, such as the Xerxes FRP tanks, or within cast-in-place concrete tanks, suitable for housing the treatment equipment. The design basis for

the centralized treatment unit was based on the WSB Clean Pro system, which uses the Moving Bed Biofilm Reactor (MBBR) process. The MBBR process utilizes thousands of polyethylene biofilm carriers operating in mixed motion within an aerated basin. Each individual carrier increases productivity by providing additional surface area to support the growth of heterotrophic and autotrophic bacteria within its cells. The technology provides cost-effective treatment with minimal maintenance since the MBBR processes self maintain an optimum level of productive biofilm. Additionally, the biofilm attached to the mobile carriers within the system automatically respond to load fluctuations.

The treatment system will include Pre-treatment tanks for retention of the primary and secondary sludge, followed by an aerobic bioreactor chamber with the polyethylene carriers which break down the organic carbon and nitrogen compounds in the wastewater. The last step in the process is the final clarifying chamber, providing separation of the secondary sludge, which is then returned to the pre-treatment or primary tank. The effluent would then be either pumped or flow by gravity to the existing underground injection wells. A schematic flow diagram for Option 2 is presented in **Figure 6.**

We are still working closely with the equipment providers to confirm the required footprint for the treatment equipment however we have included a preliminary layout of the anticipated tank requirements, for comparison with the multiple treatment unit option. As indicated in **Figure 7**, the flow stream has been spilt into two parallel trains, to minimize the overall length and utilize the available area with the parking lot. Each train would include a pre-treatment tank of approximately 10,000 gal for primary settling and pre-treatment. The biological treatment or reactors tanks are estimated to be in the range of 10,000 gal, and would be located west of the pre-treatment tanks. The final clarifiers, also estimated to be in the range of 10,000 gal each, would be situated downstream of the bioreactor tanks, and would ultimately discharge to the effluent pump station.

With the shallow water table, anti-buoyancy provisions must be included in the design and construction to ensure that the buried tanks are adequately protected from flotation and hydrodynamic forces.

As shown in the preliminary equipment layout, the primary tank and the treatment unit tanks are located approximately 12 feet from the north property line. As such the units do not meet the minimum DOH-WWB setback requirement of 25 feet from property lines. A variance from DOH-WWB would be required in order to place the units inside the minimize setback distance.

Within the existing collection and treatment system, the existing cavitette units and lift stations would be decommissioned and/or removed. A new collection system would be installed and it is anticipated that 3 new lift stations and associated force mains would be required to deliver the sewage to the new treatment plant location.

IV. Options Analysis

A. Preliminary Cost Estimates

Preliminary cost estimates have been prepared for each of the options as presented above, for comparison and evaluation purposes. A summary of the major items and estimated costs are presented below. Due to the preliminary nature of this work, typical contingencies have been applied, including 12% for Design and 25% for Construction. Additional information is attached in the appendix. As noted previously, we are working closely with the equipment vendors, to confirm the equipment sizes and approximate costs. Installation of equipment such as these package treatment plants presents a number of challenges in terms of shipping and local equipment that may be available and appropriately sized to maneuver and place the large tanks. In addition, the extent of dewatering and porosity of the surrounding soils is not known and also presents challenges in estimating the impact of dewatering operations to allow the tank excavation and installation. As such, the enclosed estimates of probable construction costs are preliminary in nature and intended for comparison purposes, and are subject to revision based on available information and project conditions.

The estimate of probable construction costs for Option 1, is in the range of $1.45M as summarized below.

Table 8 - Option 1, Preliminary Cost Estimate

Description	Estimated Cost
Treatment Unit 1	$ 307,000
Treatment Unit 2	$ 371,500
Treatment Unit 3	$ 377,000
Subtotal	$ 1,055,500
Engineering (12%)	$ 126,700
Contingency (25%)	$ 263,900
Total Preliminary Estimate	**$ 1,446,100**

The estimate of probable construction costs for Option 2, is in the range of $1.36M as summarized below.

Table 9 - Option 2, Preliminary Cost Estimate

Description	Estimated Cost
Treatment Units	$ 994,500
Engineering (12%)	$ 119,400
Contingency (25%)	$ 248,700
Total Preliminary Estimate	**$ 1,362,600**

B. Implementation Considerations

Option 1, which includes the installation of 3 separate wastewater treatment units provides some advantages in terms of a phased implementation approach and installation of the

various treatment packages. The treatment systems and accompanying infrastructure can be constructed separately, and independently of the remaining cavitette units. The extent of work can also be limited to specific areas within the resort property, minimizing the impact on the overall hotel guests and operations. Timing and scheduling of the construction work may be coordinated with lower occupancy periods and the hotel guests may be accommodated within the resort facilities which are not impacted, or impacted to a lesser extent by the construction activities.

Although the overall construction costs for the multi-unit option are anticipated to be higher than the more centralized treatment unit, if the construction work can be phased over several years, then this may provide some cash-flow advantages for the resort and Owners Association.

With the increased number of treatment units and lift stations, the amount of maintenance, testing and inspection will increase compared to the requirements of the more centralized treatment unit option. Additional testing, inspection, pump repairs and potential for mechanical issues inherently increases within the addition of more facilities.

Option 2 includes the installation of a centralized wastewater treatment facility, potentially located within the upper parking lot. This facility, since it does not conflict with the existing cavitette units, can largely be constructed without interruption in service of the existing treatment units. The new treatment equipment can be installed, tested and commissioned without impacting the existing aeration units. Some interruptions may be expected however, to install the new lift stations which will deliver the raw sewage up to the new treatment facility.

Although it may be possible to phase the two treatment train installations, the additional costs for shipping, dewatering and restoration may off-set any advantages gained in deferring the installation of the second wastewater treatment unit.

As noted above, the overall costs for the centralized treatment system are anticipated to be slightly lower than the multi-unit approach as presented in Option 1. The initial construction costs however, will be higher to construct the required treatment capacity compared to the phased approach.

With fewer treatment system components and fewer lift stations, the ongoing maintenance and operations costs for the centralized plant location are expected to be lower than the multi-unit approach.

With either option as presented above, it is anticipated that the construction costs for the new wastewater treatment facility will exceed the County of Maui Threshold of $ 500,000, triggering the requirement for a *Major* Special Management Area Permit.

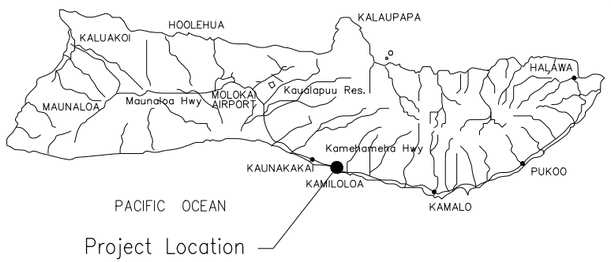
V. Recommendations

A. Recommendations

Based on the above assessments, the following recommendations are provided for consideration by the Hotel Molokai and AOAO:

- Proceed with planning and design of Option 2, to provide a centralized wastewater treatment facility;
- Utilize the existing available landscaped areas to accommodate the lift stations;
- Utilize the existing parking lot area to accommodate the centralized treatment tanks;
- Obtain samples of the existing raw sewage parameters including BOD and TSS which may be provided to the equipment vendors, so that the equipment can be appropriately sized, particularly with respect to the restaurant flow and loads;
- Confirm with DOH-WWB and the County of Maui that a variance could be obtained for the minimum setback requirements;
- Initiate the Major Special Management Area assessment and permit applications, so that this process can be completed within the Corrective Action Plan (CAP) milestones.

Appendix A



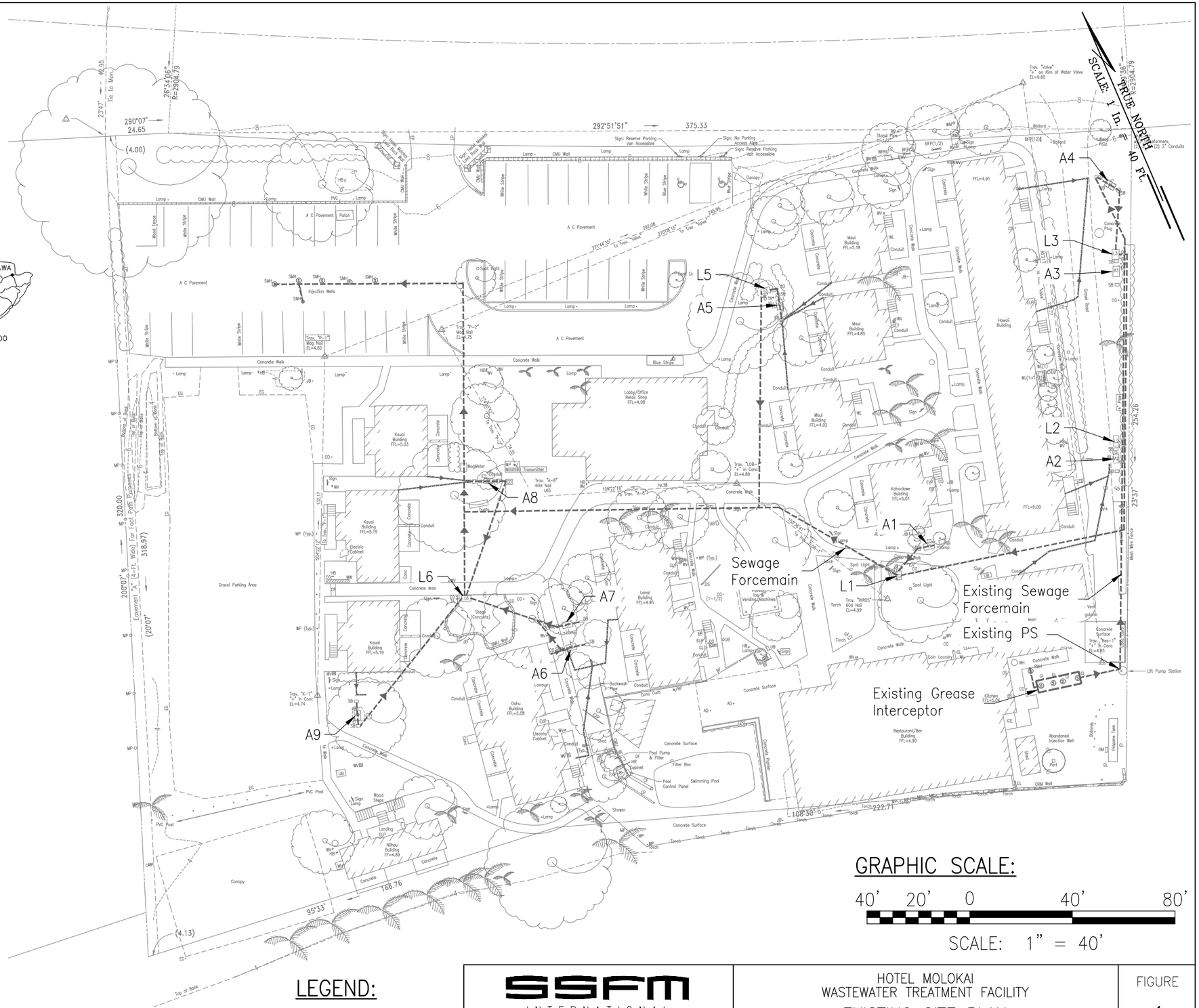
NORTH

0 1 2 3 4 5
SCALE IN MILES

ISLAND OF MOLOKAI

LOCATION PLAN

SCALE: AS SHOWN



GRAPHIC SCALE:

40’ 20’ 0 40’ 80’

SCALE: 1” = 40’

LEGEND:

A1 AERATION UNIT 1

L1 LIFT STATION 1

SSFM INTERNATIONAL

SSFM INTERNATIONAL, INC.
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

HOTEL MOLOKAI
WASTEWATER TREATMENT FACILITY
EXISTING SITE PLAN

SCALE: 1” = 40’ | DATE: JAN. 2019

FIGURE 1

PRINTED: 1/14/19

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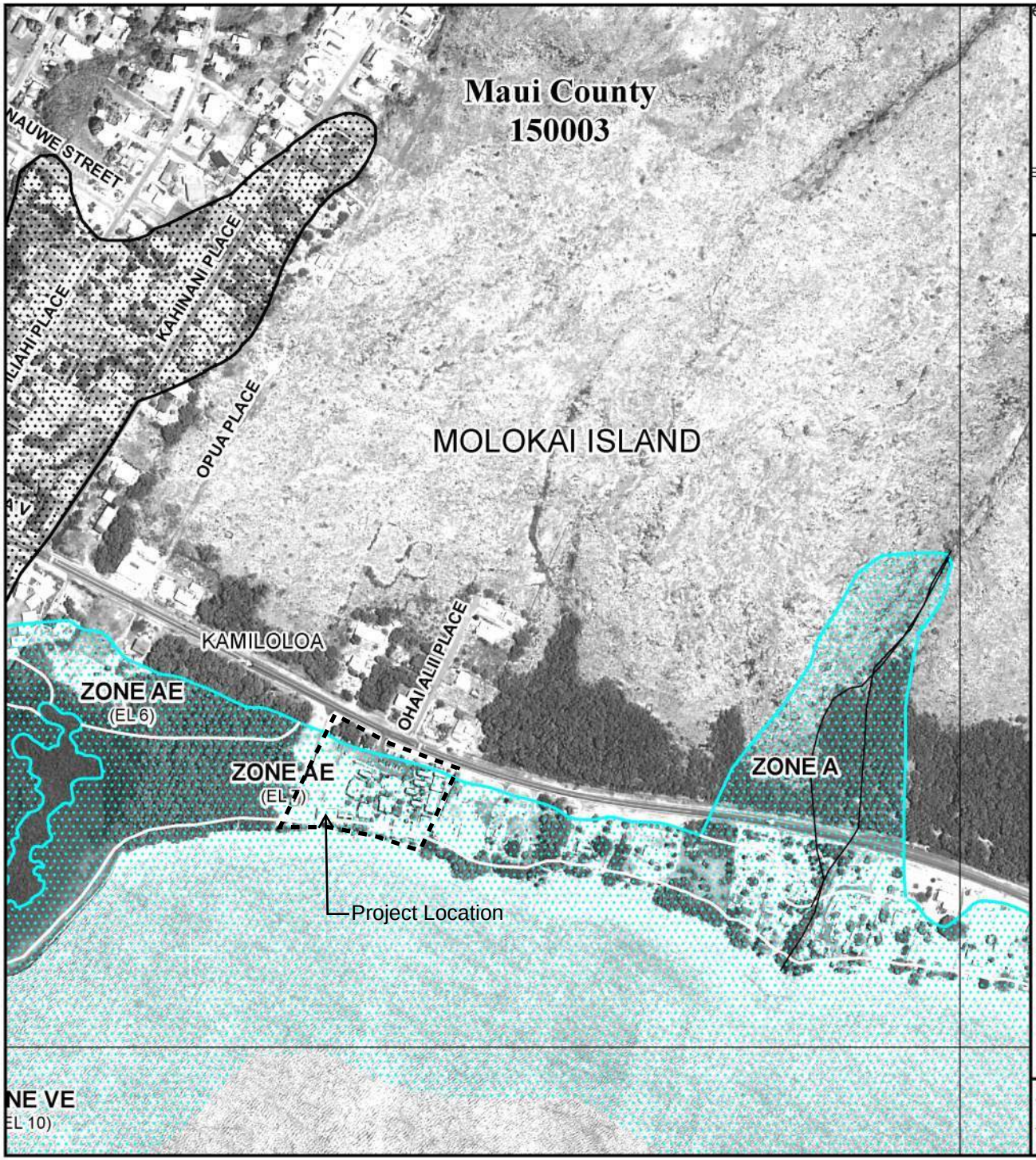


e Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0193F

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 193 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0193	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

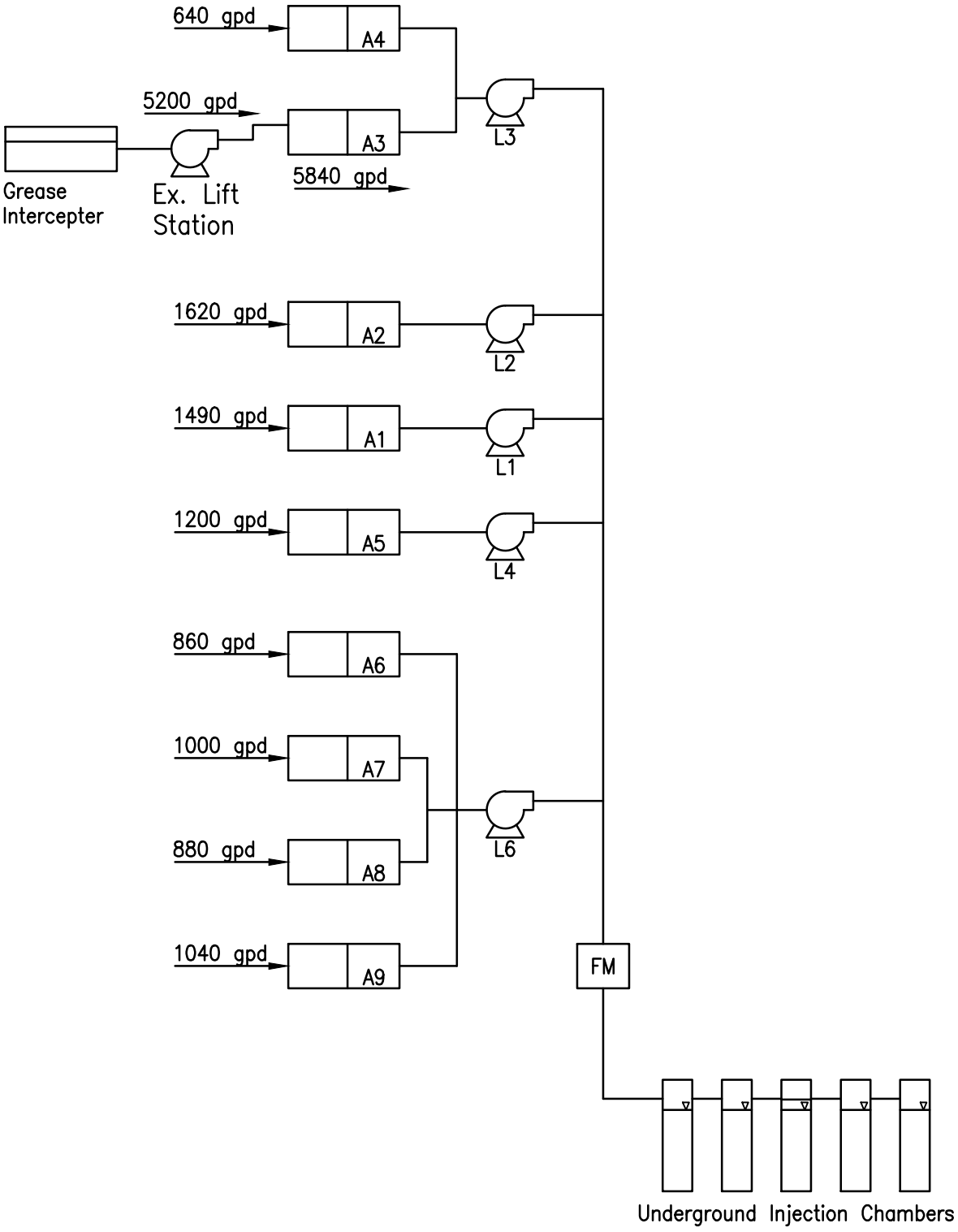
MAP NUMBER
1500030193F

MAP REVISED
NOVEMBER 4, 2015

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Figure 2



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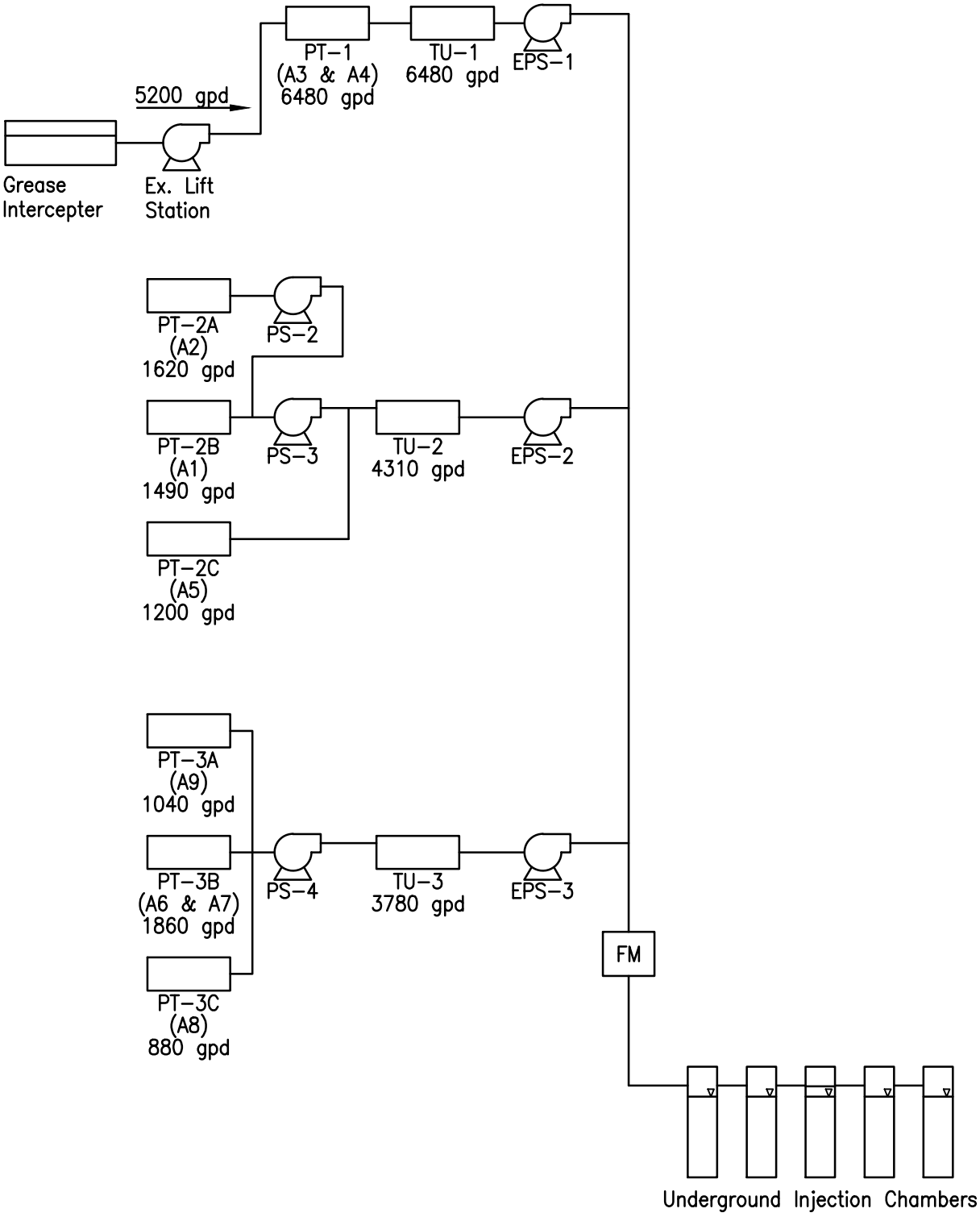
HOTEL MOLOKAI
WASTEWATER TREATMENT FACILITY

EXISTING SCHEMATIC FLOW DIAGRAM

SCALE: NTS | DATE: JAN. 2019

FIGURE 3

PRINTED: 1/14/19



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HOTEL MOLOKAI
WASTEWATER TREATMENT FACILITY

OPTION 1 SCHEMATIC FLOW DIAGRAM

SCALE: NTS

DATE: JAN. 2019

FIGURE
4

PRINTED: 1/14/19

EPS-3
Effluent Pump Station

TU-3
6,000 gal Treatment Unit
3,780 gpd

TU-2
7,000 gal Treatment Unit
FRP Tank
4,310 gpd

Treated Effluent
Forcemain

EPS-2
Effluent Pump Station

Relocate Existing
Magmeter

PT-3C
1,500 gal Primary Tank
FRP

Sewage
Forcemain

PS-4
Sewage Pump Station

PT-3A
1,500 gal Primary Tank
FRP

PT-3B
3,000 gal Primary Tank
FRP

PS-3
Sewage Pump Station

PT-2C
2,000 gal Primary Tank
FRP

Treated Effluent
Forcemain

PT-2B
2,500 gal
Primary Tank

Sewage
Forcemain

Existing Grease
Interceptor

PT-1
10,000 gal Primary Tank
FRP

TU-1
10,000 gal Primary Tank
Traffic Rated Concrete
6,480 gpd

EPS-1
Effluent Pump Station

PS-2
Sewage Pump Station

PT-2A
2,500 gal Primary Tank
Traffic Rated Concrete

Treated
Effluent
Forcemain

Connect to
Existing Sewage
Forcemain

Existing Sewage
Forcemain

Existing PS

TRUE NORTH
SCALE: 1 In. = 40 Ft.

LEGEND:

EFFLUENT FORCEMAIN

SEWAGE FORCEMAIN

GRAPHIC SCALE:

40' 20' 0 40' 80'

SCALE: 1" = 40'

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Honolulu, Hawaii 96817

HOTEL MOLOKAI
WASTEWATER TREATMENT FACILITY
OPTION 1 – SITE PLAN

SCALE: 1" = 40'

DATE: JAN. 2019

FIGURE
5

PRINTED: 1/14/19

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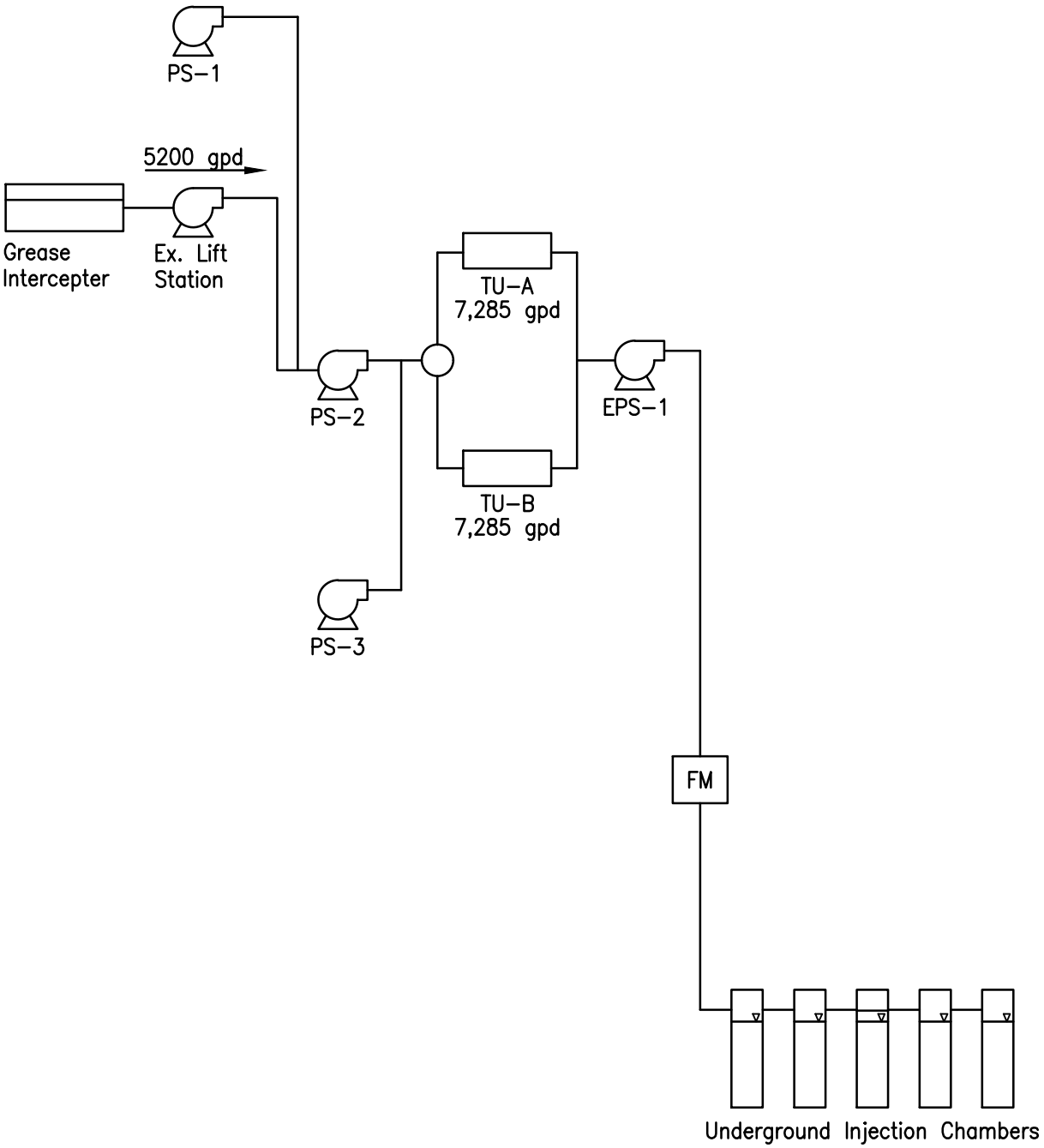

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Honolulu, Hawaii 96817

HOTEL MOLOKAI
WASTEWATER TREATMENT FACILITY

OPTION 2 SCHEMATIC FLOW DIAGRAM

SCALE: NTS | DATE: JAN. 2018

FIGURE 6

PRINTED: 1/14/19

TRUE NORTH
SCALE: 1 In. = 40 Ft.

Bioreactor Tanks

Pretreatment Tanks

Clarifiers

EPS-1
Effluent Pump Station

Treated Effluent Forcemain

Sewage Forcemain

PS-1
Sewage Pump Station

Sewage Forcemain

Connect to Existing Forcemain

PS-3
Sewage Pump Station

PS-2
Sewage Pump Station

Existing Grease Interceptor

A1 A2 A3 A4 A5 A6 A7 A8 A9 L1 L2 L3 L5 L6

LEGEND:

EFFLUENT FORCEMAIN

SEWAGE FORCEMAIN

GRAPHIC SCALE:

40' 20' 0 40' 80'

SCALE: 1" = 40'

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Honolulu, Hawaii 96817

HOTEL MOLOKAI
WASTEWATER TREATMENT FACILITY
OPTION 2 – SITE PLAN

SCALE: 1" = 40'

DATE: JAN. 2019

FIGURE 7

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PRINTED: 1/14/19

Appendix B

Hotel Molokai P/N 2016.197.000
Wastewater System Upgrades 25-Sep-18
Preliminary Budget Estimate

Option 1

Description		**Estimated Cost**
Treatment Unit 1		$ 307,000
Treatment Unit 2		$ 371,500
Treatment Unit 3		$ 377,000
Subtotal		$ 1,055,500
Engineering (12%)		$ 126,700
Contingency (25%)		$ 263,900
Total Preliminary Estimate		**$ 1,446,100**

Option 2

Description		**Estimated Cost**
Treatment Units		$ 994,500
Engineering (12%)		$ 119,400
Contingency (25%)		$ 248,700
Total Preliminary Estimate		**$ 1,362,600**

Hotel Molokai
Wastewater System Upgrades
Preliminary Budget Estimate
Option 1

Item Description	Units	Quantity	Unit Rate	Extension
Treatment Unit 1				
Temporary Pumping	Days	10	$ 600	$ 6,000
Dewatering	Days	10	$ 1,000	$ 10,000
Decommission Existing	Ea	2	$ 2,500	$ 5,000
FRP Primary Tank (12,000gal)	LS	1	$ 45,000	$ 45,000
Cast in place Treatment Tank (12,000 gal)	LS	1	$ 55,000	$ 55,000
Fixed Film Bioreactor (7680 gpd)	LS	1	$ 75,000	$ 75,000
Effluent Pump Station	LS	1	$ 30,000	$ 30,000
Forcemains	ft	350	$ 50	$ 17,500
Shipping Allowance	LS	1	$ 25,000	$ 25,000
Misc Piping	LS	1	$ 3,500	$ 3,500
Restoration	LS	1	$ 15,000	$ 15,000
Electrical Allowance	LS	1	$ 10,000	$ 10,000
Start-up and Commissioning	LS	1	$ 10,000	$ 10,000
Subtotal Unit 1				$ 307,000

Hotel Molokai
Wastewater System Upgrades
Preliminary Budget Estimate
Option 1

Item Description	Units	Quantity	Unit Rate	Extension
Treatment Unit 2				
Temporary Pumping	Days	10	$ 600	$ 6,000
Dewatering	Days	15	$ 1,000	$ 15,000
Decommission Existing	LS	3	$ 2,500	$ 7,500
FRP Primary Tank (3,000gal)	Ea	2	$ 20,000	$ 40,000
FRP Primary Tank (4,000gal)	LS	1	$ 24,000	$ 24,000
FRP Treatment Tank (10,000 gal)	LS	1	$ 35,000	$ 35,000
Fixed Film Bioreactor (6410 gpd)	LS	1	$ 65,000	$ 65,000
Sewage Pump Station	Ea	2	$ 25,000	$ 50,000
Effluent Pump Station	LS	1	$ 30,000	$ 30,000
Forcemains	ft	350	$ 50	$ 17,500
Shipping Allowance	LS	1	$ 25,000	$ 25,000
Misc Piping	LS	1	$ 4,500	$ 4,500
Restoration	LS	1	$ 25,000	$ 25,000
Electrical Allowance	LS	1	$ 15,000	$ 15,000
Start-up and Commissioning	LS	1	$ 12,000	$ 12,000
Subtotal Treatment System 2				$ 371,500

Hotel Molokai
Wastewater System Upgrades
Preliminary Budget Estimate
Option 1

Item Description	Units	Quantity	Unit Rate	Extension
Treatment Unit 3				
Temporary Pumping	Days	10	$ 600	$ 6,000
Dewatering	Days	15	$ 1,000	$ 15,000
Decommission Existing	Ea	3	$ 2,500	$ 7,500
FRP Primary Tank (3,000gal)	Ea	2	$ 20,000	$ 40,000
FRP Primary Tank (5,000gal)	LS	1	$ 28,000	$ 28,000
FRP Treatment Tank (12,000 gal)	LS	1	$ 45,000	$ 45,000
Fixed Film Bioreactor (7280 gpd)	LS	1	$ 75,000	$ 75,000
Sewage Pump Station	Ea	1	$ 25,000	$ 25,000
Effluent Pump Station	LS	1	$ 35,000	$ 35,000
Forcemains	ft	350	$ 50	$ 17,500
Relocate Flow Meter	LS	1	$ 3,500	$ 3,500
Shipping Allowance	LS	1	$ 25,000	$ 25,000
Misc Piping	LS	1	$ 4,500	$ 4,500
Restoration	LS	1	$ 25,000	$ 25,000
Electrical Allowance	LS	1	$ 15,000	$ 15,000
Start-up and Commissioning	LS	1	$ 10,000	$ 10,000
Subtotal Treatment System 3				$ 377,000

Hotel Molokai
Wastewater System Upgrades
Preliminary Budget Estimate
Option 2

Item Description	Units	Quantity	Unit Rate	Extension
Temporary Pumping	Days	20	$ 600	$ 12,000
Dewatering	Days	25	$ 1,000	$ 25,000
Decommission Existing	Ea	9	$ 2,500	$ 22,500
Treatment Unit A	LS	1	$ 250,000	$ 250,000
Treatment Unit B	LS	1	$ 250,000	$ 250,000
Sewage Pump Station	Ea	3	$ 25,000	$ 75,000
Effluent Pump Station	LS	1	$ 30,000	$ 30,000
Forcemains	ft	480	$ 50	$ 24,000
Relocate Flow Meter	LS	1	$ 3,500	$ 3,500
Shipping Allowance	LS	1	$ 75,000	$ 75,000
Misc Piping	LS	1	$ 15,000	$ 15,000
Restoration	LS	1	$ 45,000	$ 45,000
Re-construct parking Lot	sy	700	$ 175	$ 122,500
Electrical Allowance	LS	1	$ 25,000	$ 25,000
Start-up and Commissioning	LS	1	$ 20,000	$ 20,000
Subtotal Option 2				$ 994,500

HOTEL MOLOKAI
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
KAMILOLOA BEACH, MOLOKAI, HAWAII

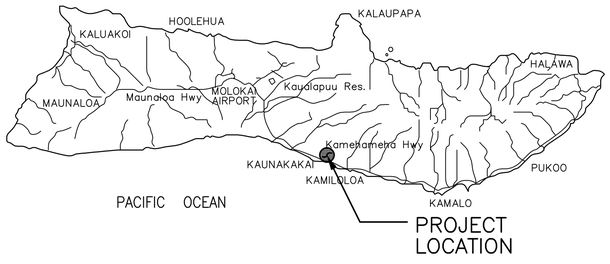
OWNED BY:

AOAO OF HOTEL MOLOKAI
672 OLD MILL ROAD PMB #311
MILLERSVILLE MD 21108

PREPARED BY:

SSFM INTERNATIONAL, INC.
501 SUMNER ST, SUITE 610
HONOLULU, HAWAII 96817
808-531-1308

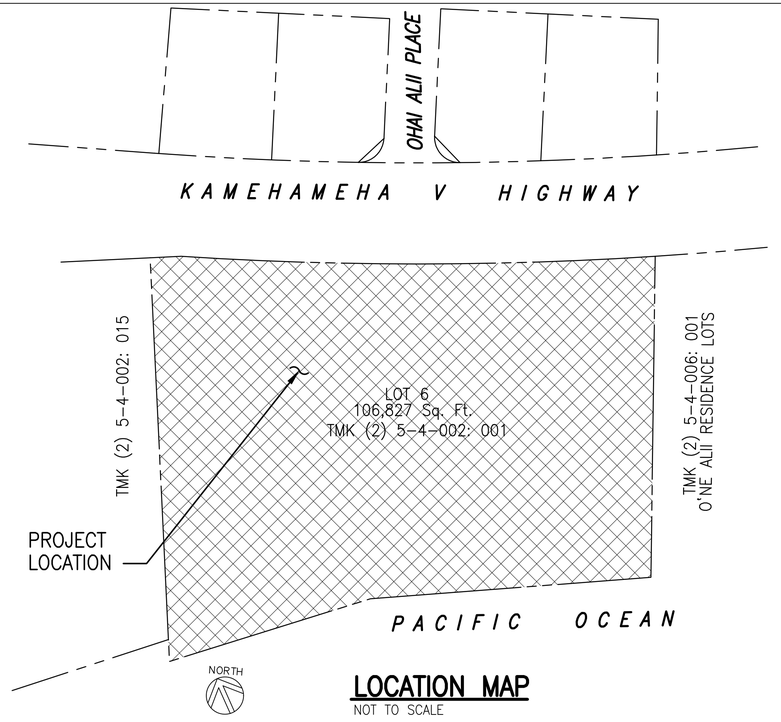
VICINITY MAP



NORTH

VICINITY MAP
NOT TO SCALE

LOCATION MAP



NORTH

LOCATION MAP
NOT TO SCALE

INDEX OF DRAWING

SHEET #	DESCRIPTION
C-001	TITLE SHEET
C-002	CIVIL NOTES 1
C-003	EXISTING CONDITION PLAN
CD100	DEMOLITION, EROSION AND SEDIMENT CONTROL PLAN
CD501	EROSION CONTROL DETAILS
CU100	OVERALL SITE AND UTILITY PLAN
CU101	DETAILED SITE AND UTILITY PLAN 1
CU102	DETAILED SITE AND UTILITY PLAN 2
CU103	DETAILED SITE AND UTILITY PLAN 3
CU104	DETAILED SITE AND UTILITY PLAN 4
CU105	DETAILED SITE AND UTILITY PLAN 5
CU201	SEWERLINE PLAN AND PROFILE 1
CU202	SEWERLINE PLAN AND PROFILE 2
CU203	SEWERLINE PLAN AND PROFILE 3
CU204	SEWERLINE PLAN AND PROFILE 4
CU205	SEWERLINE PLAN AND PROFILE 5
CU206	SEWERLINE PLAN AND PROFILE 6
CU501	LIFT STATION 1 DETAILS
CU502	LIFT STATION 2 DETAILS
CU503	MISCELLANEOUS DETAILS

This work was prepared by me or under my supervision and I accept responsibility for it as a professional engineer. Date of expiration of the license: 4/30/2021 Professional Engineer, Civil, State of Hawaii, U.S.A. (Delete if not applicable)

Signature

expiration date of this license

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

SSFM International, Inc.
SSFM International, Inc.
82 Puiehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

TITLE SHEET

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DATE
JUNE 26, 2020

SHEET NUMBER
C-001
X OF SHEETS

PRINTED: 6/26/20

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GENERAL NOTES

1. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE 2005 HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION, AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENTS OF PUBLIC WORKS, CITY & COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII, UNLESS NOTED OTHERWISE ON PLANS AND/OR PROJECT SPECIFICATIONS.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
3. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF EXISTING UTILITIES FROM ANY DAMAGE.
5. A PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES FROM AFFECTED AGENCIES, OWNER, AND THE CONTRACTOR SHALL BE HELD PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. THE CONTRACTOR SHALL PROVIDE VEHICLE ACCESS TO AND FROM PUBLIC STREETS AT ALL TIMES.
7. ALL EXCAVATION WORK SHALL INCLUDE EXCAVATION CALLED FOR ON THE PLANS AND NOT ITEMIZED IN THE PROPOSAL, AND ANY OTHER INCIDENTAL EXCAVATION WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT.
8. ALL ABANDONED PIPE OPENINGS SHALL BE PLUGGED WITH CLASS DWS 2000 CONCRETE TO A DEPTH OF 1-1/2 TIMES THE DIAMETER OF THE PIPE.
9. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR DIRECTION.
10. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES TO VERIFY THE ACTUAL LOCATIONS OF ALL UTILITIES IN THE PROJECT AREA PRIOR TO EXCAVATING. THE CONTRACTOR SHALL COORDINATE ALL WORK.
11. THE CONTRACTOR SHALL RELOCATE, REMOVE, AND/OR REPLACE ALL EXISTING UTILITIES, ROADWAY PAVEMENT, FENCES, IRRIGATION, AND LANDSCAPING DISTURBED DUE TO WORK RELATED TO THIS PROJECT AS DIRECTED BY THE OWNER.
12. THE CONTRACTOR SHALL RESTORE ALL EXISTING IMPROVEMENTS THAT ARE DAMAGED AS A RESULT OF THE CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC.
13. ALL WORK IN THIS PROJECT SHALL INCLUDE THE WORK CALLED FOR ON THE PLANS AND NOT ITEMIZED IN THE PROPOSAL, AND ANY OTHER INCIDENTAL WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT.
14. CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO BID.
15. DURING NON-WORKING HOURS, ALL TRENCHES AND EXCAVATION MUST BE PLATED WITH NON-SKID STEEL PLATES OR BACKFILLED.
16. 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 PER OSHA STANDARDS, TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT. THE CONTRACTOR SHALL PROPERLY SUPPORT EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDER-PINNING TO FULLY PROTECT THEM FROM DAMAGE.
17. 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 ANY OTHER FACILITIES NOT SHOWN ON PLAN, 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. ALL DAMAGED PORTIONS SHALL BE REPLACED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE AFFECTED UTILITY COMPANY AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARD CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS" AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL". BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.
19. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS OR CERTIFICATES REQUIRED PRIOR TO START OF WORK, INCLUDING PERMIT FOR HYDROTESTING AND DEWATERING DISCHARGE AS ISSUED BY THE STATE DEPARTMENT OF HEALTH.
20. FOR BENCH MARK, SEE SITE AND GRADING PLANS.
21. THE CONTRACTOR SHALL NOTIFY THE ONE CALL CENTER AT (866) 423-7287 AT LEAST 5 DAYS PRIOR TO THE START OF EXCAVATION OR TRENCHING.
22. EXISTING UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT ARE NOT GUARANTEED AS TO THE LOCATION SHOWN OR THAT OTHER OBSTACLES MAY NOT BE ENCOUNTERED IN THE COURSE OF THE WORK. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN THAT NONE EXISTS.
23. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES AT CROSSINGS TO VERIFY INVERT ELEVATIONS PRIOR TO EXCAVATION OF PIPELINE TRENCH.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANING AND REMOVAL OF ALL SILT AND DEBRIS GENERATED, DEPOSITED AND ACCUMULATED WITHIN DOWNSTREAM WATERWAYS, DITCHES, DRAIN PIPES AND ON PUBLIC ROADWAYS. 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.
25. THE CONTRACTOR, AT HIS/HER EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCE AND SHALL TAKE SUPPLEMENTARY MEASURES AS NECESSARY.
26. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION. SHOULD THERE BE OMISSIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE AND INSTALL FITTINGS, APPURTENANCES AND MATERIALS AS REQUIRED TO PROVIDE A COMPLETE FUNCTIONABLE UTILITY SYSTEM CONFORMING TO ALL APPLICABLE STANDARDS AND REQUIREMENTS.

PRIVATE UTILITY NOTES:

1. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE 1994 HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION, AND THE DEPARTMENT OF PUBLIC WORK'S STANDARD DETAILS, SEPTEMBER 1984, AND CURRENT COUNTY PRACTICES.
2. THE CONTRACTOR SHALL NOTIFY THE COUNTY PRIOR TO COMMENCEMENT OF SEWER WORK. THE CONTRACTOR SHALL PAY FOR ALL INSPECTION COSTS.
3. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS RESEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES, INCLUDING AND AFFECTING SEWER LINES, IN THE PRESENCE OF THE WASTEWATER INSPECTOR AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH (DOH) AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES AS REQUIRED BY THE DEPARTMENT OF HEALTH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATION AND PRESS RELEASES.
6. CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. IN AREAS OF UNSTABLE SOIL, THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.
7. TREES SHALL BE SITUATED A MINIMUM OF 6'-0" FROM THE SEWER LINES.
8. SLOPE FOR SEWER LATERALS SHALL BE AT A MINIMUM OF 1.00% UNLESS OTHERWISE NOTED.
9. BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.
10. THE CONTRACTOR SHALL INSTALL "RAINSTOPPER" MANHOLE INSERTS IN ALL SEWER MANHOLES WITH TYPE "SA" FRAME AND COVER.
11. WHEN CONNECTING TO A LIVE SEWER LINE, THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS THAT THE STATE DEPARTMENT OF HEALTH SETS FORTH TO MITIGATE ANY WASTEWATER SPILL THAT MAY OCCUR. THE CONTRACTOR SHALL INFORM THE COUNTY INSPECTOR FIVE (5) WORKING DAYS PRIOR TO THE ACTUAL CONNECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND PENALTIES DUE TO ANY SPILLS RESULTING FROM THE CONNECTION.
12. IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984.
13. AT ALL SEWERLINE AND DRAINLINE CROSSINGS OR SEWERLINE AND WATERLINE CROSSINGS, THE MINIMUM VERTICAL CLEARANCE SHALL BE 18 INCHES, UNLESS OTHERWISE NOTED. IF THE SEWERLINE IS LOCATED ABOVE THE WATERLINE, THE WATERLINE MUST BE CONCRETE JACKETED A MIN. OF 5' ON EACH SIDE OF THE CROSSING.
14. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION. SHOULD THERE BE OMISSIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE AND INSTALL FITTINGS, APPURTENANCES AND MATERIALS AS REQUIRED TO PROVIDE A COMPLETE FUNCTIONABLE UTILITY SYSTEM CONFORMING TO ALL APPLICABLE STANDARDS AND REQUIREMENTS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINE TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES HE DEEMS NECESSARY TO PROTECT THE WATER LINE, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH THE DEPARTMENT OF WATER SUPPLY APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
16. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE AND WATER SERVICE LINE CROSSINGS, THE WATER SERVICE LINE SHALL BE LOCATED ABOVE THE SEWERLINE OR WATERLINE AND MINIMUM VERTICAL CLEARANCE SHALL BE 18 INCHES.
17. AT ALL WATERLINE AND DRAINLINE OR FIRELINE AND DRAINLINE CROSSINGS, THE MINIMUM VERTICAL CLEARANCE SHALL BE 12 INCHES, UNLESS OTHERWISE NOTED.

PUBLIC HEALTH SAFETY AND CONVENIENCE NOTES

1. CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR 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 AND COUNTY GRADING ORDINANCE.
3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SILT OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS AS NECESSARY.
4. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
5. THE CONTRACTOR SHALL OBTAIN A PERMIT, IF REQUIRED, FROM THE DIRECTOR OF HEALTH, IN ACCORDANCE TO CHAPTER 46, PUBLIC HEALTH REGULATIONS, DEPARTMENT OF HEALTH, STATE OF HAWAII, "COMMUNITY NOISE CONTROL," IN WHICH MAXIMUM PERMISSIBLE NOISE LEVELS HAVE BEEN SET. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR THE CONSTRUCTION ACTIVITIES. APPLICATION AND INFORMATION ON VARIANCES ARE AVAILABLE FROM THE ENVIRONMENTAL PROTECTION AND HEALTH SERVICES DIVISION, 1250 PUNCHBOWL ST., HONOLULU, HI 96813 OR BY TELEPHONE (586-4400).

ABBREVIATIONS:

A1-A9	AERATION TANK (#)
A C	ASPHALT CONCRETE
AD	AREA DRAIN
BF	BAMBOO FENCE
BFP	BACK FLOW PREVENTER (INCHES)
BT	BOTTOM OF TANK
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
CONC	CONCRETE
CP	CONCRETE PATCH
CRM	CONCRETE RUBBLE MASONRY
DF	DRINKING FOUNTAIN
EB	ELECTRIC BOX
EG	EDGE OF GRAVEL
ELP	ELECTRIC PANEL
EO	ELECTRICAL OUTLET
EP	EDGE OF PAVEMENT
EXP	EXPOSED PIPE
FFL	FINISH FLOOR
GI	GREASE INTERCEPTOR
GL	GAS LINE
GM	GAS METER
GV	GAS VALVE
HB	HOSE BIB
HR	HAND RAIL
ICE	ICE MAKER
ICV	IRRIGATION CONTROL VALVE
INV	INVERT
JB	JUNCTION BOX
JP	JOINT POLE (CABLE/ELEC/TELE)
L1-L6	LIFT STATION (#)
MP	METAL POST
PVC	POLYVINYL CHLORIDE PIPE
SB	SEWER BOX
SMH	SANITARY MANHOLE
TA	TANK ALARM
TP	TOP OF PIPE
TS	TOP OF STEM (WV)
TT	TOP OF TANK
TWL	TOP OF WATERLINE (WM)
UB	UTILITY BOX (UNKNOWN UTILITY)
WH	WATER HEATER
WL	WATERLINE (PIPE)
WP	WOOD POST
WM	WATER METER
WV	WATER VALVE
WW	WOOD WALL

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.

SSFM International
SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT: HOTEL MOLOKAI
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

CIVIL NOTES 1

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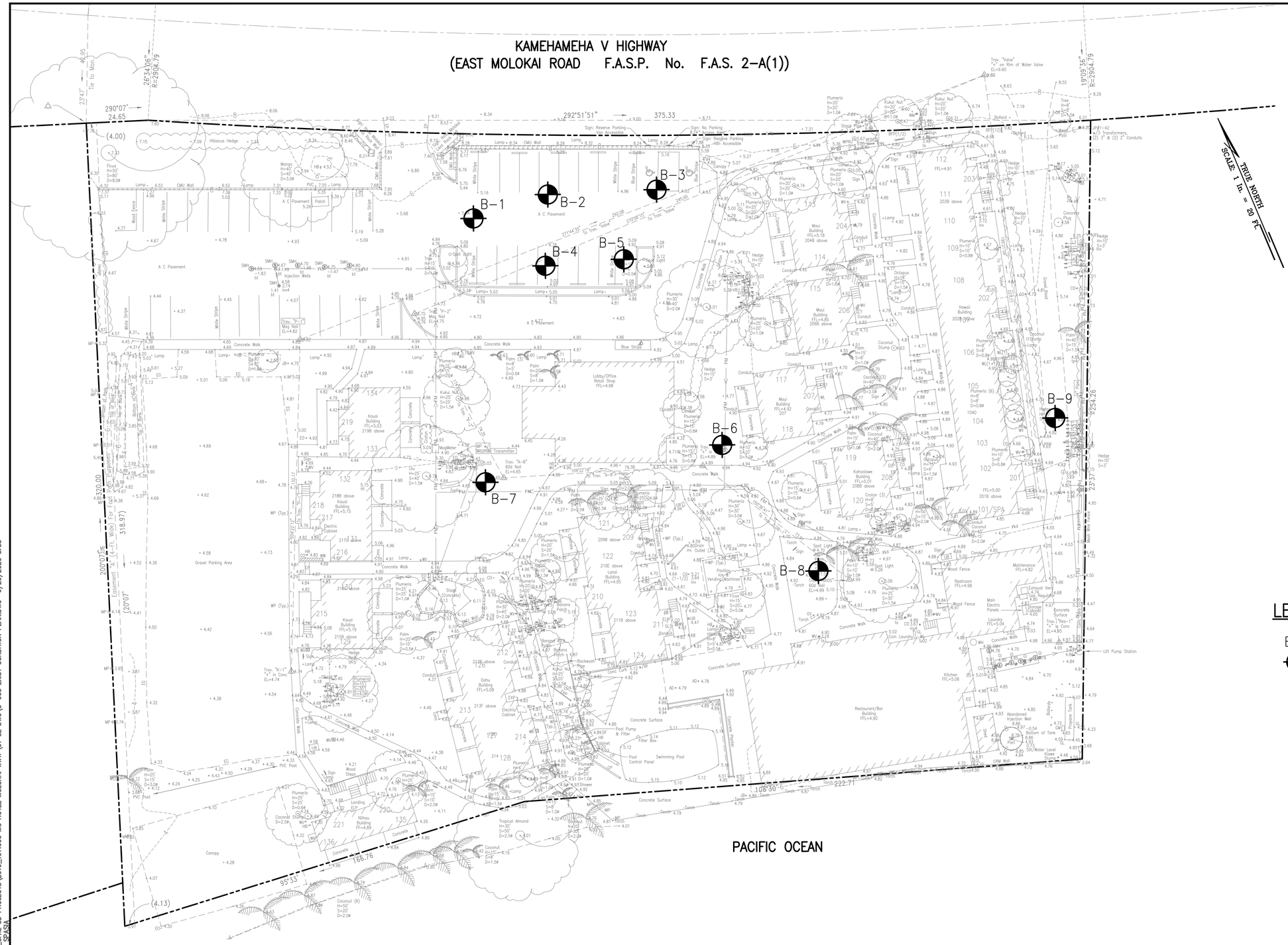
DATE JUNE 26, 2020

SHEET NUMBER C-002

X OF SHEETS

W:_CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\C-002 CIVIL NOTES 1.DWG 2/10/2020 6:55 PM CCANAMO

KAMEHAMEHA V HIGHWAY
(EAST MOLOKAI ROAD F.A.S.P. No. F.A.S. 2-A(1))



LEGEND:

B-1 — APPROX. LOCATION OF BORINGS BASED ON "GEOTECHNICAL ENGINEERING EXPLORATION, HOTEL MOLOKAI WASTEWATER TREATMENT PLANT, ISLAND OF MOLOKAI, HAWAII," BY GEOLABS, INC. DATED JUNE 22, 2020

EXISTING CONDITION PLAN
SCALE: 1" = 20'

GRAPHIC SCALE:
20' 10' 0 20' 40'
SCALE: 1" = 20'

This work was prepared by me or under my supervision and I am responsible for its accuracy. Any revisions, (Description of construction activity) to this document after the Completion Certification of the Project Architect/Engineer, Surveyor, and Landscape Architect(s) shall be the responsibility of the person making those revisions.

Signature | expiration date of this license

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

SSFM International Inc.
SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

EXISTING CONDITION PLAN

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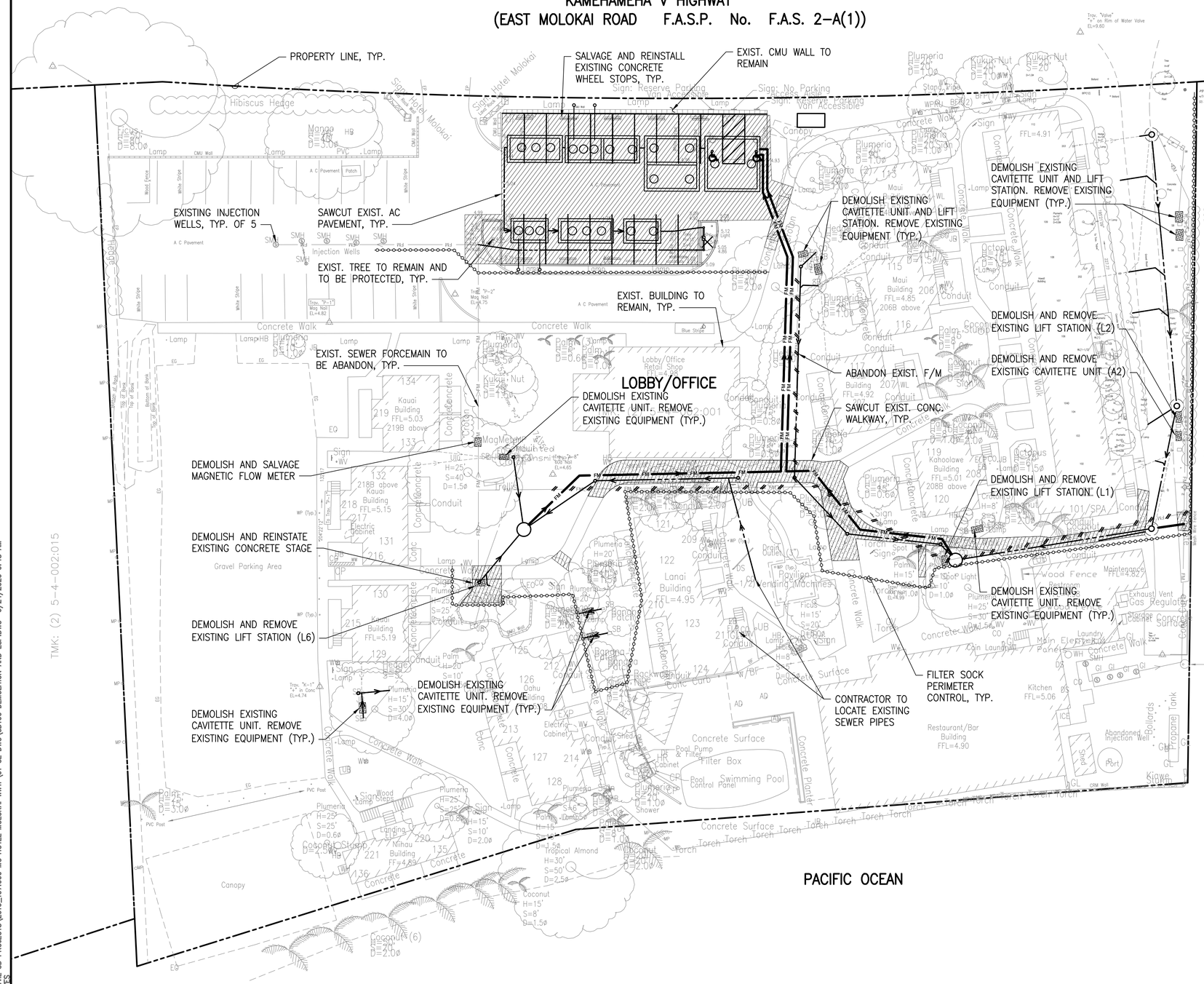
DATE
JUNE 26, 2020

SHEET NUMBER
C-003
OF SHEETS

PRINTED: 6/26/20

C:_CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\C-003 EXIST CONDITION PLAN.DWG 6/26/2020 3:35 PM SPASAI

KAMEHAMEHA V HIGHWAY
(EAST MOLOKAI ROAD F.A.S.P. No. F.A.S. 2–A(1))



BEST MANAGEMENT PRACTICES (BMPS):

1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED UNTIL COMPLETION OF THE PROJECT AND THE GROUND COVER FULLY ESTABLISHED. CHECK AND REPAIR ALL EROSION CONTROL MEASURES AS NECESSARY.
2. PRE–CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN TWENTY (20) CALENDAR DAYS PRIOR TO SITE DISTURBANCE.
3. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN FIVE (5) CALENDAR DAYS.
4. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING.
5. GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF ROADWAYS FROM MUD, DIRT, AND DEBRIS.

LEGEND:

- PROPERTY LINE
- DEMOLISH EXISTING CONCRETE WALKWAY, AC PAVEMENT AND CURB
- FILTER SOCK PERIMETER CONTROL SEE DET. 1/CD501
- DEMOLISH AND REMOVE EXISTING UTILITIES
- DEMOLISH AND REMOVE EXISTING LIFT STATION, AND CAVITETTE UNIT
- TREE REMOVAL

GRAPHIC SCALE:

20' 10' 0 20' 40'

SCALE: 1" = 20'

DEMOLITION, EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

DEMOLITION, EROSION AND SEDIMENT CONTROL PLAN

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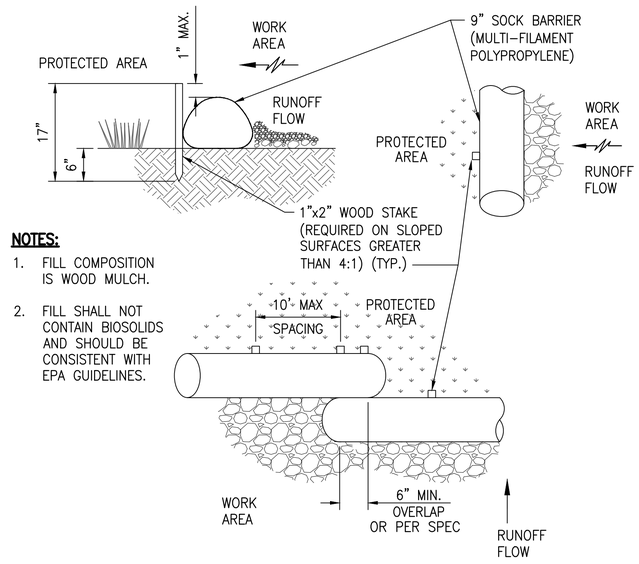
DATE: JUNE 26, 2020

SHEET NUMBER: CD100

OF SHEETS

PRINTED: 6/26/20

C:\CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CD100 DEMOLITION AND ESP.DWG 6/24/2020 9:48 AM



NOTES:

1. FILL COMPOSITION IS WOOD MULCH.
2. FILL SHALL NOT CONTAIN BIOSOLIDS AND SHOULD BE CONSISTENT WITH EPA GUIDELINES.

1 / CD501 FILTER SOCK–PERIMETER PROTECTION

NOT TO SCALE

C:\CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CD501 EROSION CONTROL DETAILS.DWG 2/10/2020 6:57 PM CCNAMIO

PRINTED: 6/26/20

This work was prepared by me or under my supervision and to the best of my knowledge and belief, is in accordance with the applicable Standards of the Board of Architecture, Engineering, Surveying and Landscape Architecture (Landscape Architects)

signature | expiration date of this license

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REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

EROSION CONTROL DETAILS

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CD501

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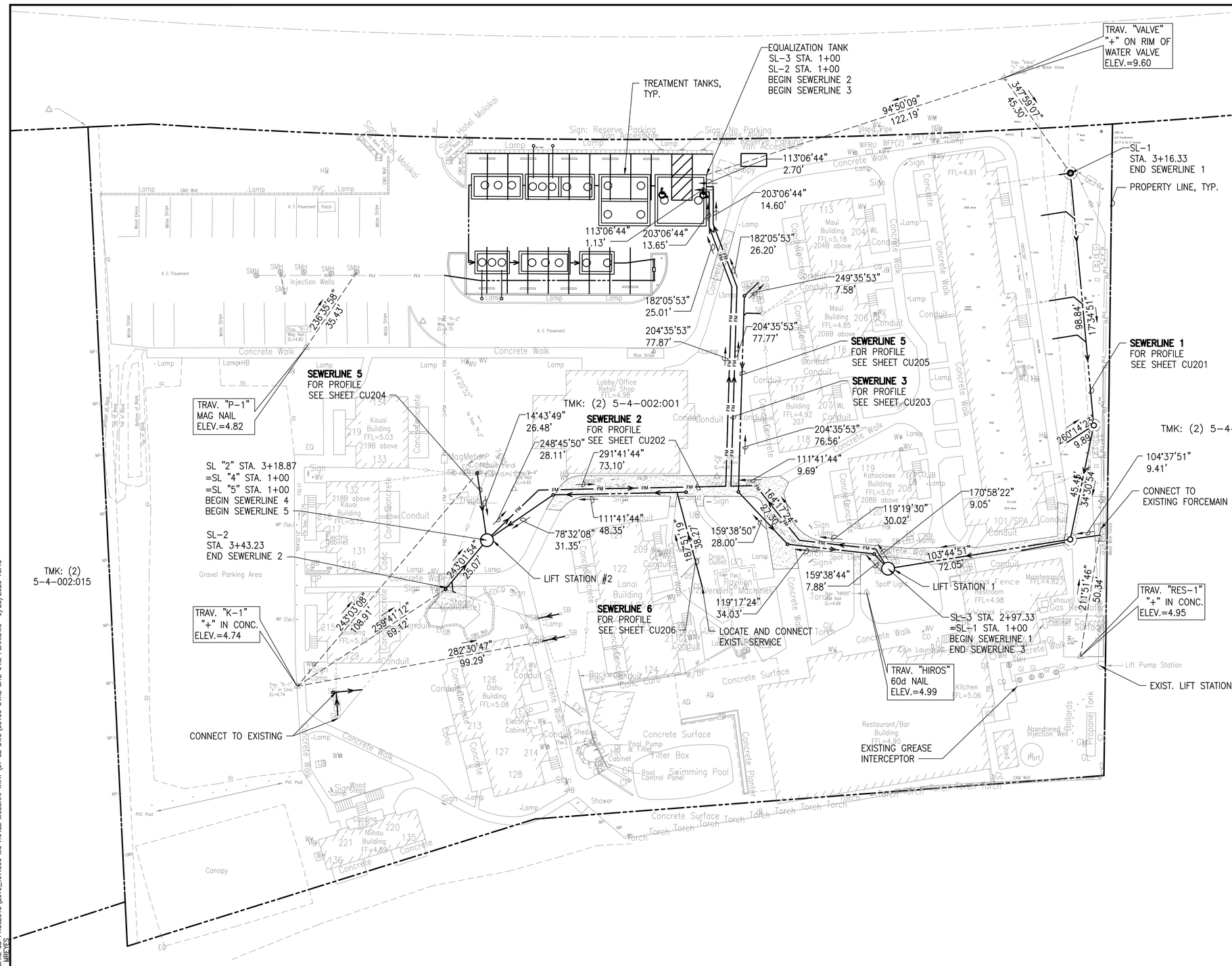

KEY PLAN
NOT TO SCALE

LEGEND:

FM ——— SEWER FORCEMAIN

——— SEWERLINE

OVERALL SITE AND UTILITY PLAN
SCALE: 1" = 20'

GRAPHIC SCALE:

20' 10' 0 20' 40'

SCALE: 1" = 20'

This work was prepared by me or under my supervision and I approve it for use by me, or my employer, for the stated purpose within the Standards of Practice for Land Surveying in the State of Hawaii. Any unauthorized use, alteration, or modification of these documents is prohibited (subsection 16-115-26 HAR).

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

OVERALL SITE AND UTILITY PLAN

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DATE
JUNE 26, 2020

SHEET NUMBER
CU100

OF SHEETS

PRINTED: 6/26/20

C:\CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU100 OVRL SITE UTIL PLAN.DWG 6/25/2020 10:15 PM MRS PS

6" GOOSENECK VENT PIPE WITH ACTIVATED CARBON ODOR CONTROL CANISTER

REINSTALL EXISTING CONCRETE WHEEL STOPS, TYP.

ACCESSIBLE PAVEMENT MARKING SEE DETAIL 3/CU503

Sign: Reserve Parking Van Accessible

REINSTATE ADA PARKING STALLS

Sign: No Parking

Access Aisle

Sign: Reserve Parking Van Accessible

SCALE: 1 in. = 5 Ft

TRUE NORTH

KEY PLAN
NOT TO SCALE

Lamp

CMU Wall

3.00' TYP.

13.72'

18.00' TYP.

TREATMENT TANKS, TYP.

4" WIDE WHITE PAVEMENT STRIPE FOR ACCESS AISLE

WWTP CONTROL UNIT

Canopy

CANOPY TO BE RELOCATED

CONNECT TO EQUALIZATION TANK

MBBR TANK #1

PRIMARY CLARIFER

ONLINE SLUDGE STORAGE TANK

INTERMEDIATE CLARIFER TANK

8.00' TYP.

OFFLINE STORAGE TANK

3.00'

45°

EQUALIZATION TANK

8.00' ACCESSIBLE STALL

8.00' ACCESSIBLE AISLE

8.00' ACCESSIBLE STALL

4" SOLID WHITE PAVEMENT STRIPE FOR PARKING STALL, TYP.

Plumeria
H=25'
S=20'
D=1.0ø

REMOVE AND REPLACE CONCRETE WALKWAY

FM

MEBR TANK #2

FINAL CLARIFER TANK

FINAL EFFLUENT PUMP TANK

2.50'

STEEL BOLLARDS, SEE DETAIL 2/CU503

RELOCATE EXISTING FLOW METER, SEE DETAIL 1/CU503

SEWERLINE-3
FOR PROFILE
SEE SHEET CU203

Hed
H=1
S=2

Concrete Walk

SEWERLINE 2
FOR PROFILE
SEE SHEET CU202

Plumeria
H=30'
S=40'
D=2.0ø

CO
EO
SB
JB
TA
EO
JB
EO
COTG-7

CONNECT TO EXISTING

SB

SEWERLINE 6
FOR PROFILE
SEE SHEET CU204

Plume
H=25
S=20'
D=1.0

6" GOOSENECK VENT PIPE WITH ACTIVATED CARBON ODOR CONTROL CANISTER

A C Pavement

LEGEND:

- FM — SEWER FORCEMAIN
- SEWERLINE
- CLEAN-OUT TO GRADE

DETAILED SITE AND UTILITY PLAN 1

SCALE: 1" = 5'

GRAPHIC SCALE:

5' 0 5' 10'

SCALE: 1" = 5'

PRINTED: 6/26/20

C:\CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU101 DET SITE UTIL PLAN.DWG 6/26/2020 1:47 PM MREYES

This work was prepared by me or under my supervision and I am a duly licensed professional engineer under the laws of the State of Hawaii. (Description of certification: Bachelor of Science in Civil Engineering, Bachelor of Architecture, Registered Professional Engineer, Certified Architect, Licensed Architect)

signature | expiration date of this license

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

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MOLOKAI, MAUI, HAWAII

DETAILED SITE AND UTILITY PLAN 1

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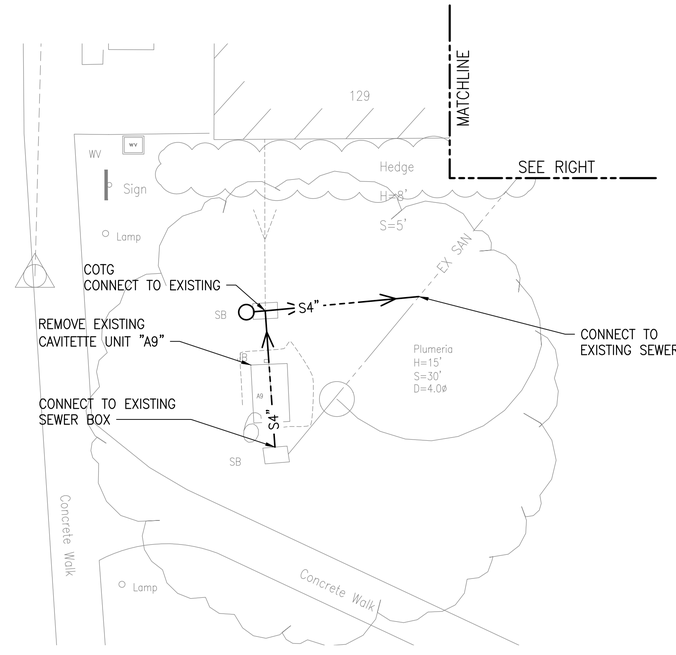
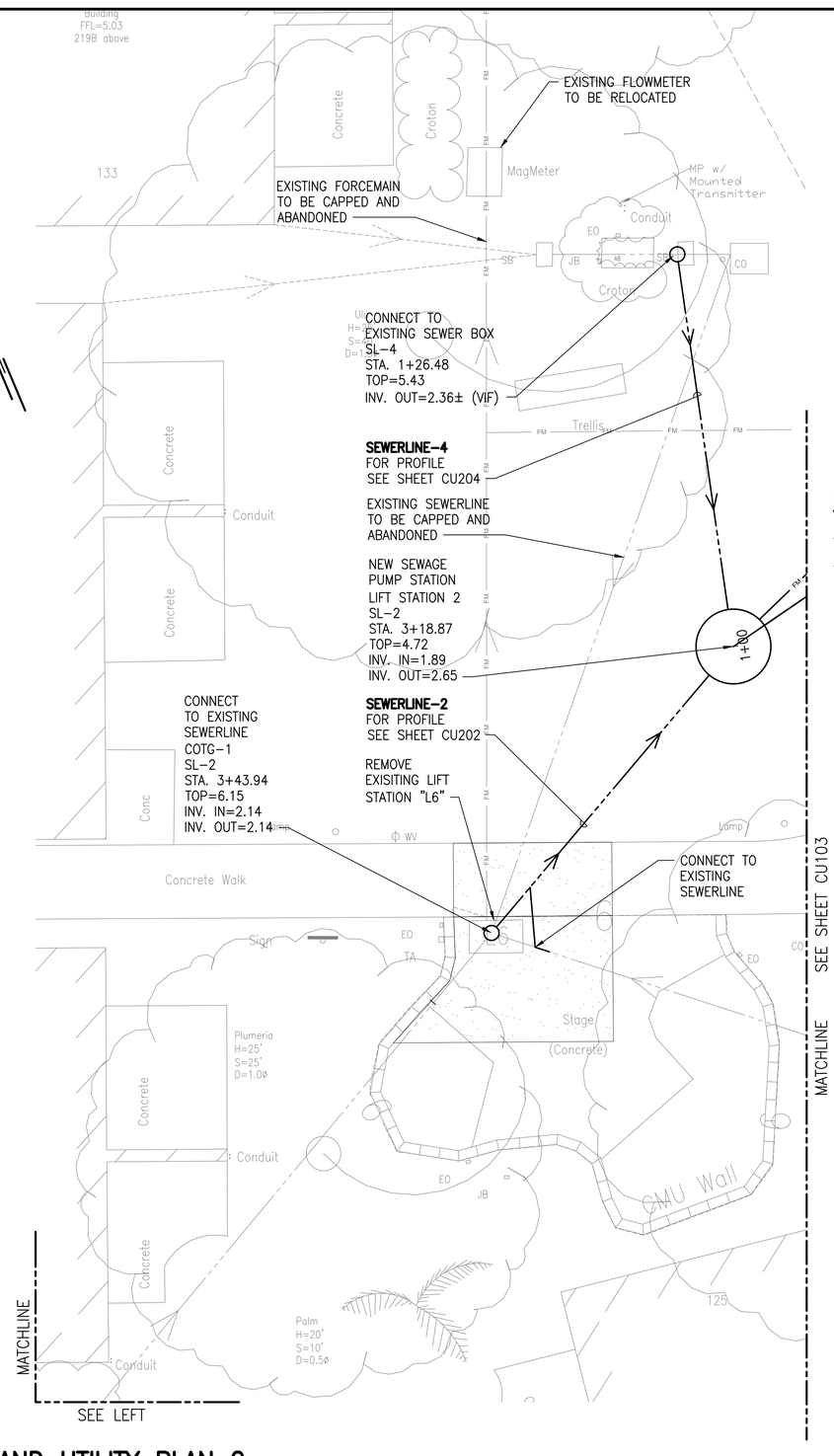
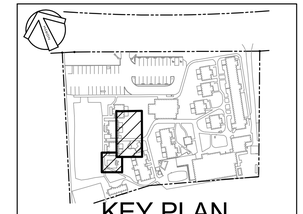
SHEET NUMBER
CU101

OF SHEETS







SCALE: 1 In. = 5 Ft.
TRUE NORTH

LEGEND:

- FM — SEWER FORCEMAIN
- SEWERLINE
- SEWAGE PUMP STATION

GRAPHIC SCALE:

5' 0 5' 10'

SCALE: 1" = 5'

DETAILED SITE AND UTILITY PLAN 2

SCALE: 1" = 5'

This work was prepared by me or under my supervision and to the best of my knowledge and belief, it conforms to accepted engineering practices. (Description of construction activities, Definitions of the Terms and Conditions, Standards of Care, Limitations of Liability, Warranties, Guarantees, and Limitations of Liability, Indemnities, Damages, and Limitations of Liability)

Signature

expiration date of this license

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

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

DETAILED SITE AND UTILITY PLAN 2

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DATE
JUNE 26, 2020

SHEET NUMBER
CU102

OF SHEETS

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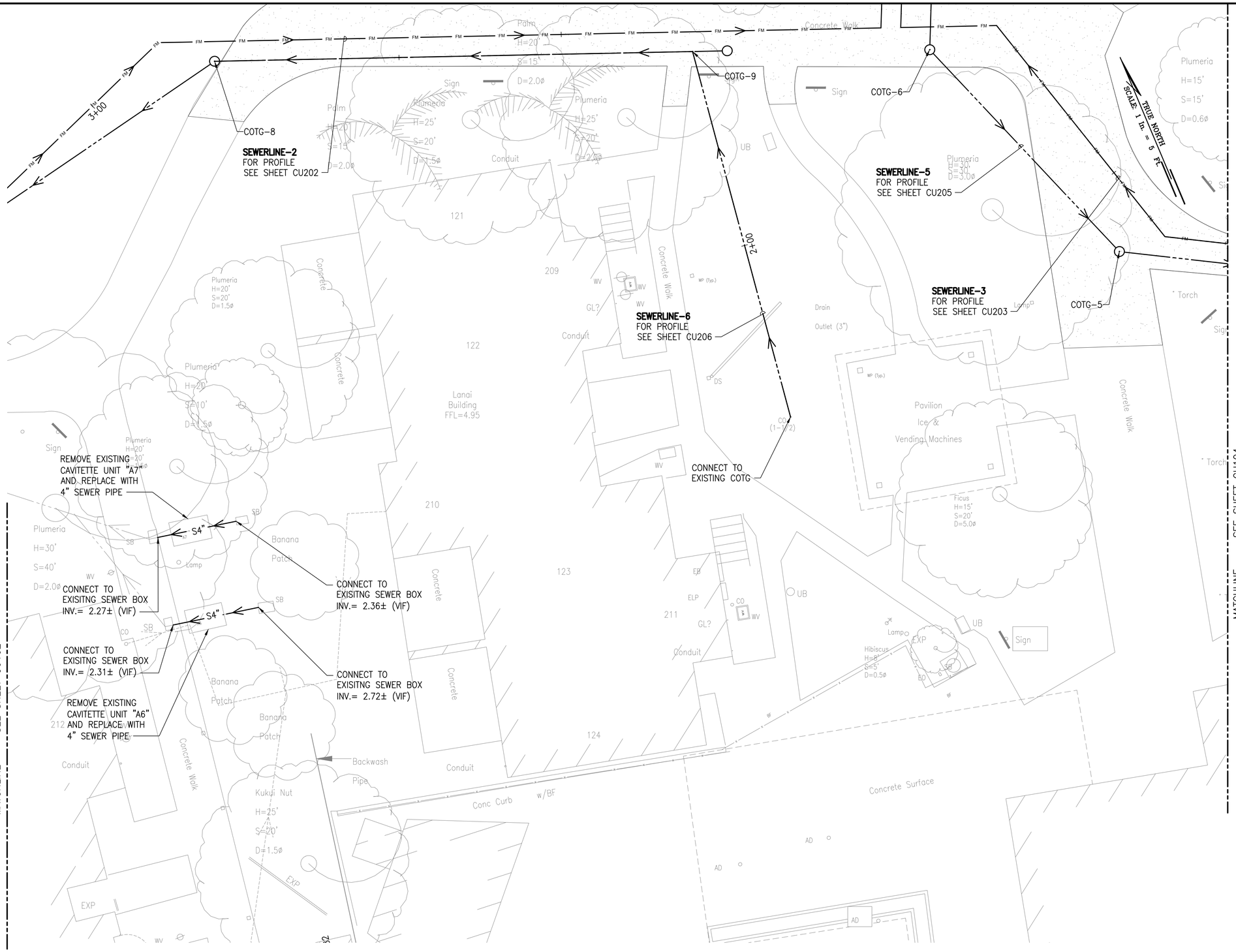

KEY PLAN
NOT TO SCALE

LEGEND:

- FM — SEWER FORCEMAIN
- SEWERLINE
- SEWAGE PUMP STATION

DETAILED SITE AND UTILITY PLAN 3

SCALE: 1" = 5'

GRAPHIC SCALE:

5' 0 5' 10'

SCALE: 1" = 5'

This work was prepared by me or under my supervision and I am a duly licensed professional engineer under the laws of the State of Hawaii. (Section 464-8, Definition of "Practice of Engineering", Hawaii Revised Statutes, as amended, and Section 16-115-3, Hawaii Administrative Rules, as amended)

signature | expiration date of this license

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

SSFM International

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

DETAILED SITE AND UTILITY PLAN 3

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DATE
JUNE 26, 2020

SHEET NUMBER
CU103

OF SHEETS

PRINTED: 6/26/20

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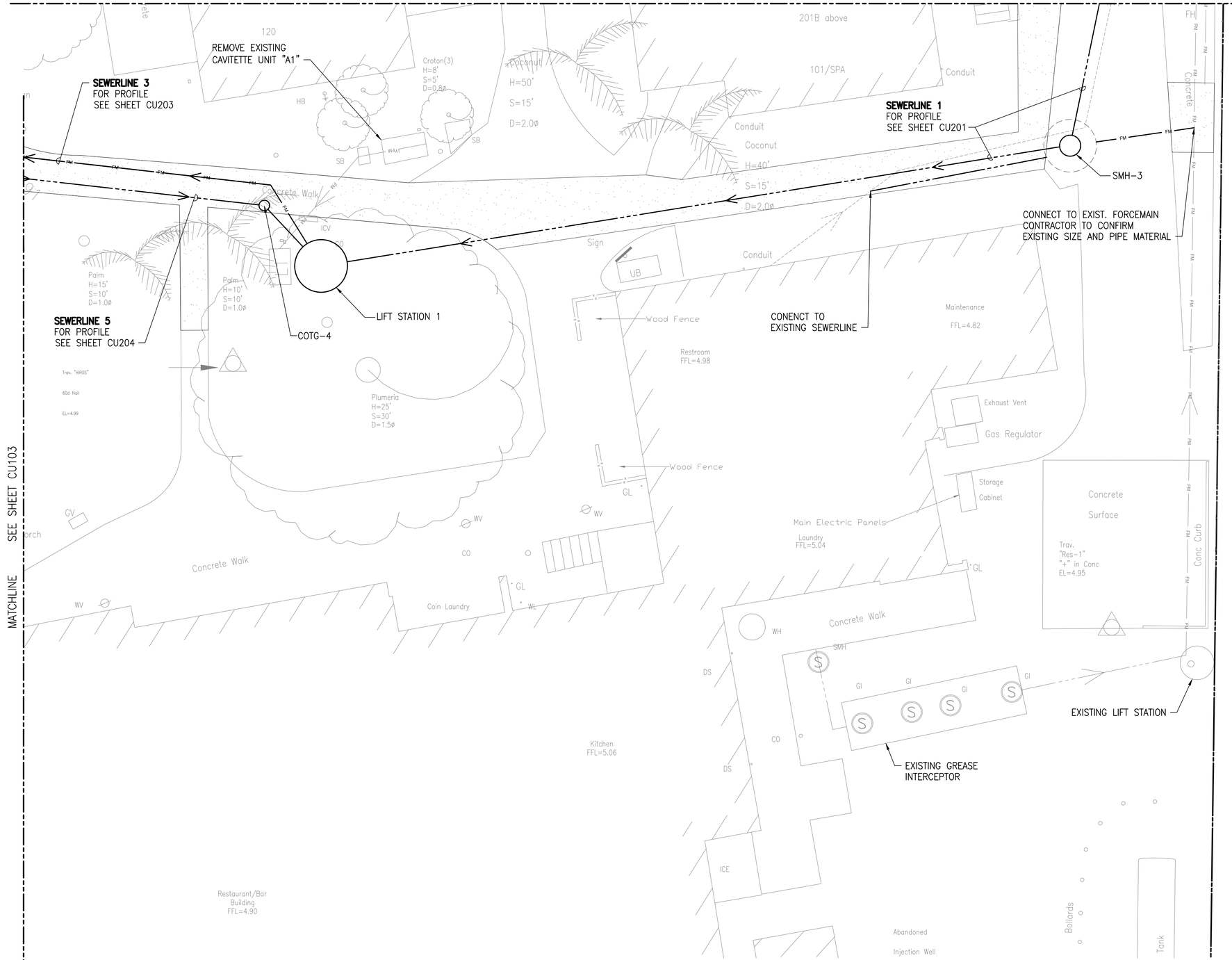
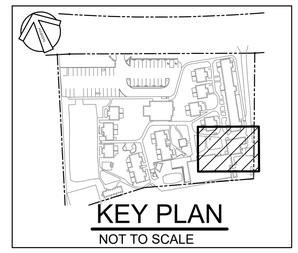
MATCHLINE SEE SHEET CU105

MATCHLINE SEE SHEET CU103





TRUE NORTH
SCALE: 1 In. = 5 Ft.

LEGEND:

- FM — SEWER FORCEMAIN
- SEWERLINE
- SEWAGE PUMP STATION
- CLEAN-OUT TO GRADE
- SEWER MANHOLE

DETAILED SITE AND UTILITY PLAN 4

SCALE: 1" = 5'

GRAPHIC SCALE:

5' 0 5' 10'

SCALE: 1" = 5'

This work was prepared by me or under my supervision and I am a duly licensed professional engineer under the laws of the State of Hawaii. (Definition of "Professional Engineer" and "Responsible Charge" per Rules Relating to Examinations, Standards, and Definitions of the Board of Architecture, Engineering, Surveying and Landscape Architects)

signature

expiration date of this license

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

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

DETAILED SITE AND UTILITY PLAN 4

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DATE
JUNE 26, 2020

SHEET NUMBER
CU104

OF SHEETS

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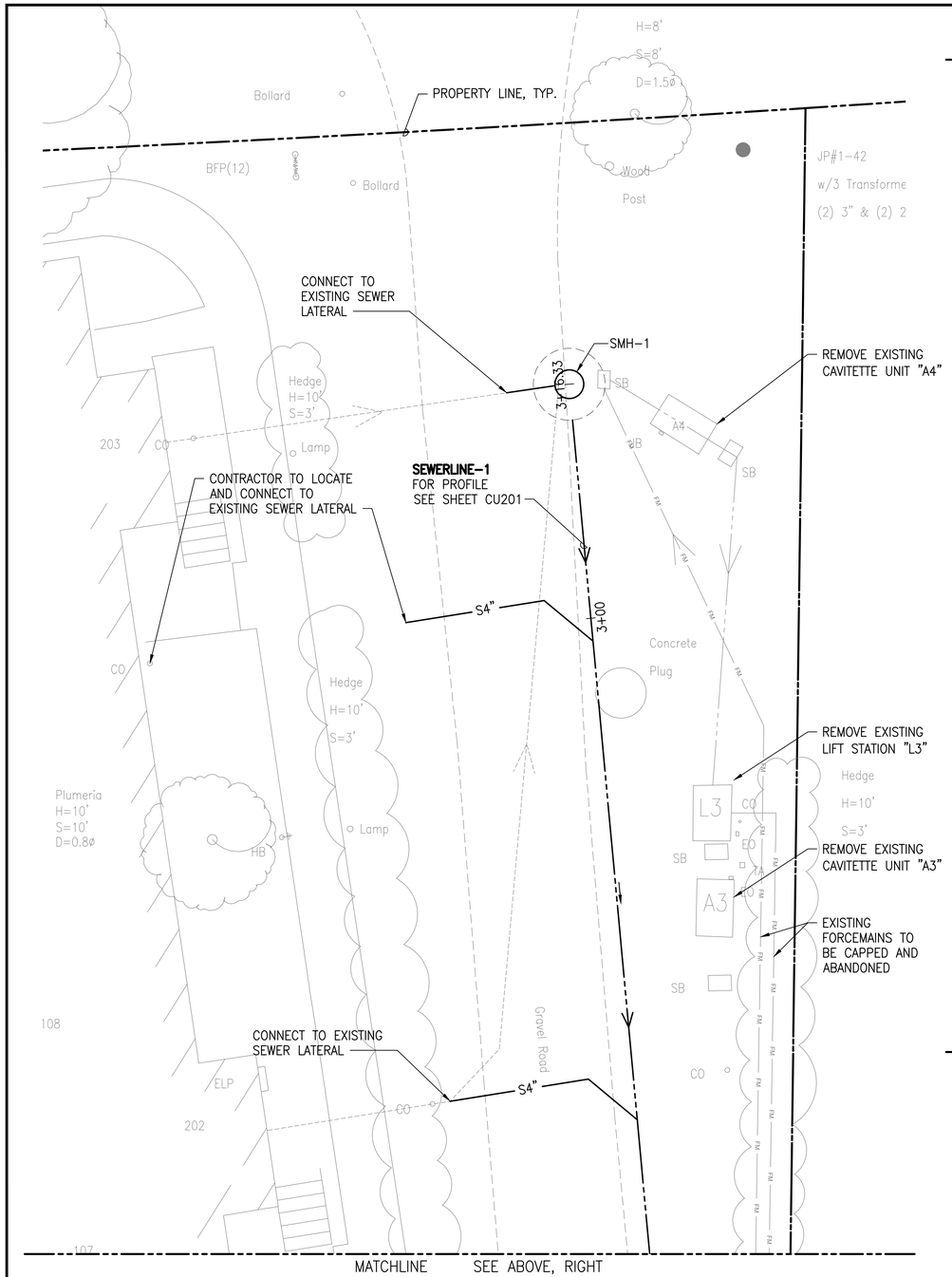
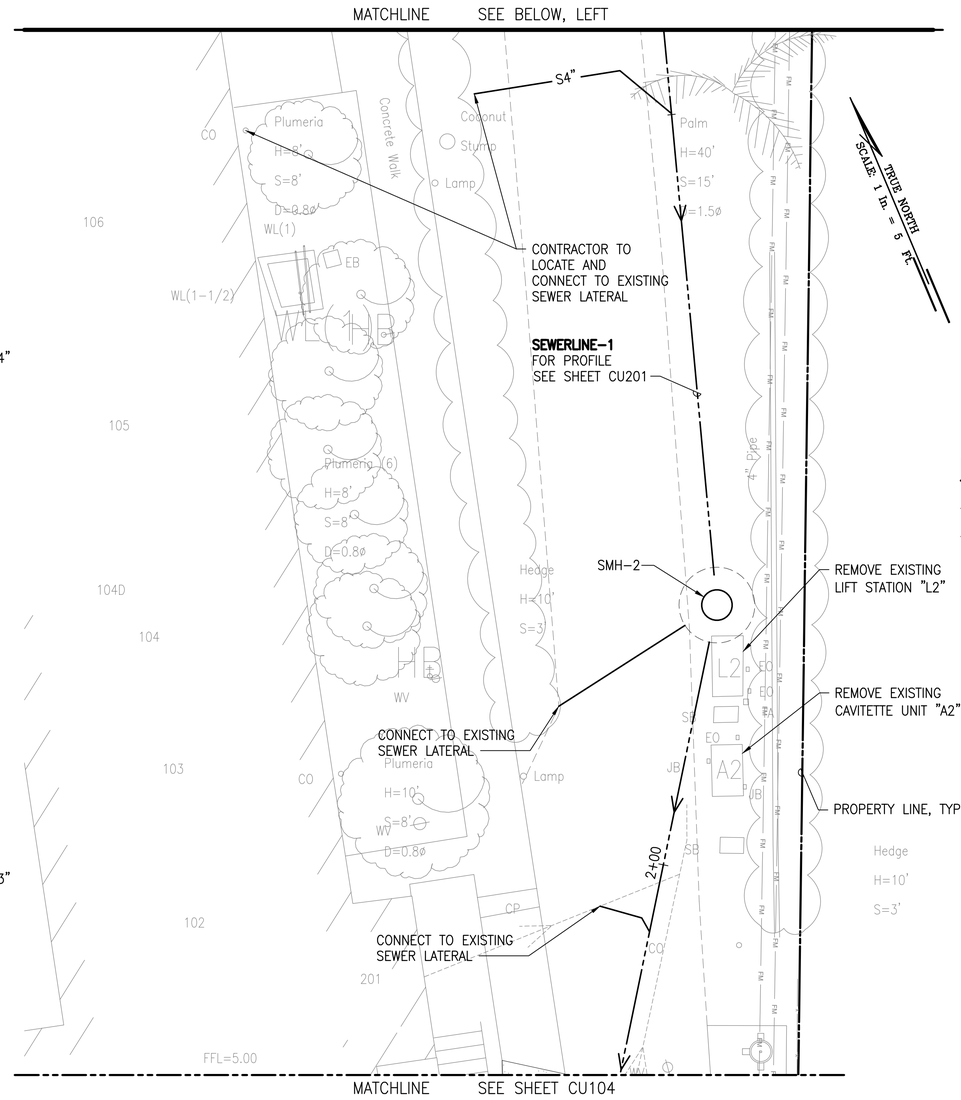
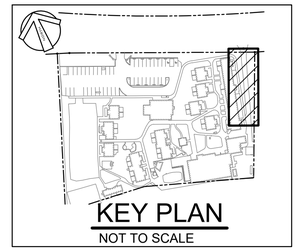
PRINTED: 6/26/20







LEGEND:

- FM — SEWER FORCEMAIN
- SEWERLINE
- SEWER MANHOLE

DETAILED SITE AND UTILITY PLAN 5

SCALE: 1" = 5'

GRAPHIC SCALE:

5' 0 5' 10'

SCALE: 1" = 5'

This work was prepared by me or under my supervision and I accept responsibility for it as a design professional. (Description of construction documents, i.e. Preliminary, Permit, Construction Drawings, Addendum, Revisions, and Record Drawings as applicable)

signature — expiration date of this license

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

SSFM International Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

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DATE
JUNE 26, 2020

SHEET NUMBER
CU105

OF SHEETS

C:\CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU105 DET SITE UTIL PLAN.DWG 6/24/2020 3:31 PM
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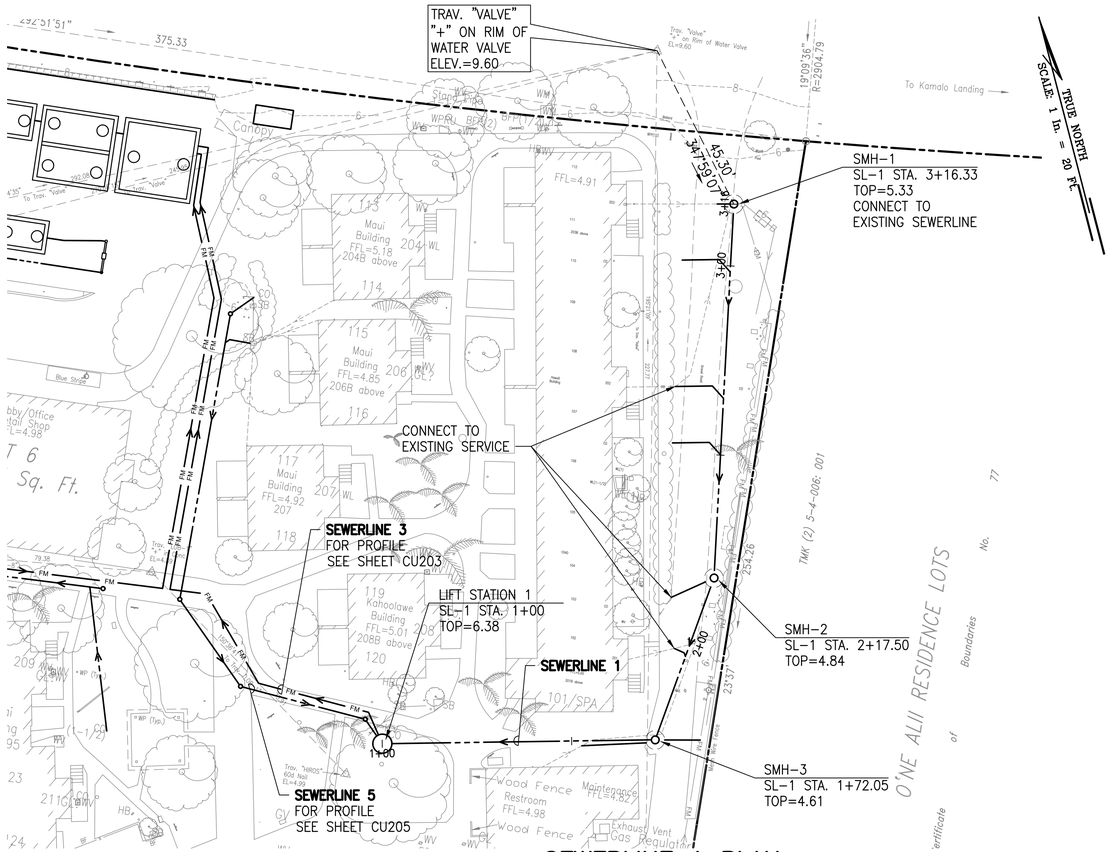
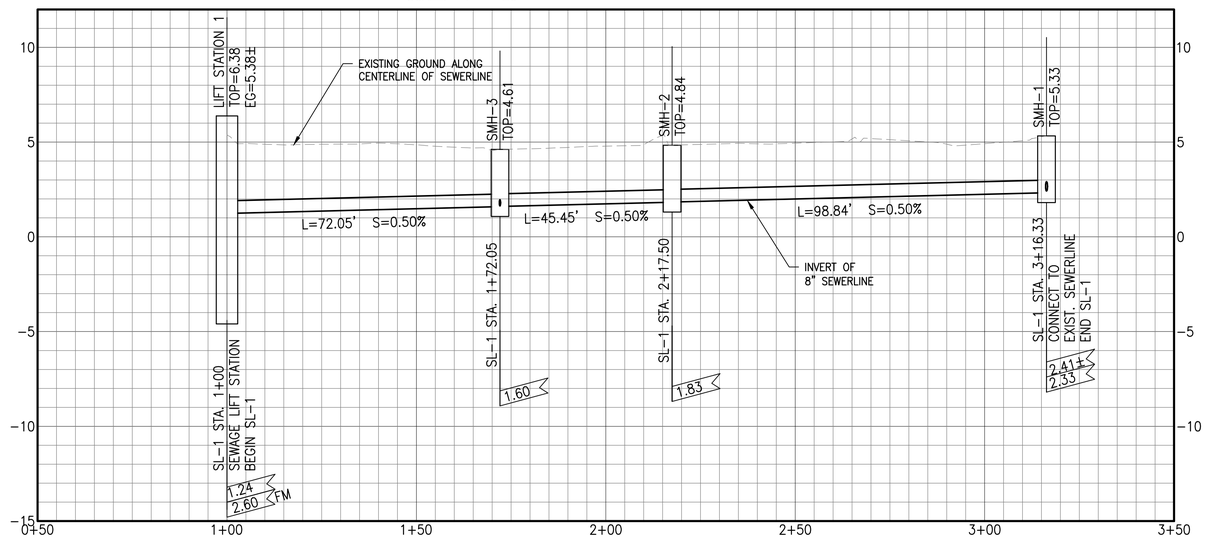
PRINTED: 6/26/20



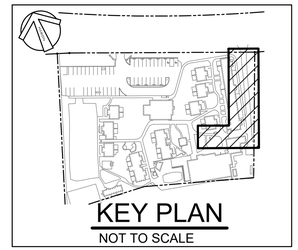
SEWERLINE 1 PLAN

SCALE: 1" = 20'



SEWERLINE 1 PROFILE

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



GRAPHIC SCALES:

20' 10' 0 20' 40'
SCALE: 1" = 20'

4' 3' 2' 1' 0 4' 8'
SCALE: 1" = 4'

This work was prepared by me or under my supervision and I certify that to the best of my knowledge, information and belief, I am duly licensed professional engineer under the laws of the State of Hawaii. (Structural, Civil, Mechanical, Electrical, Fire Protection, Plumbing, Landscape Architects)
Signature
expiration date of this license
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

SSFM International

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

SEWERLINE PLAN AND PROFILE 1

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DATE
JUNE 26, 2020

SHEET NUMBER
CU201
OF SHEETS

PRINTED: 6/26/20

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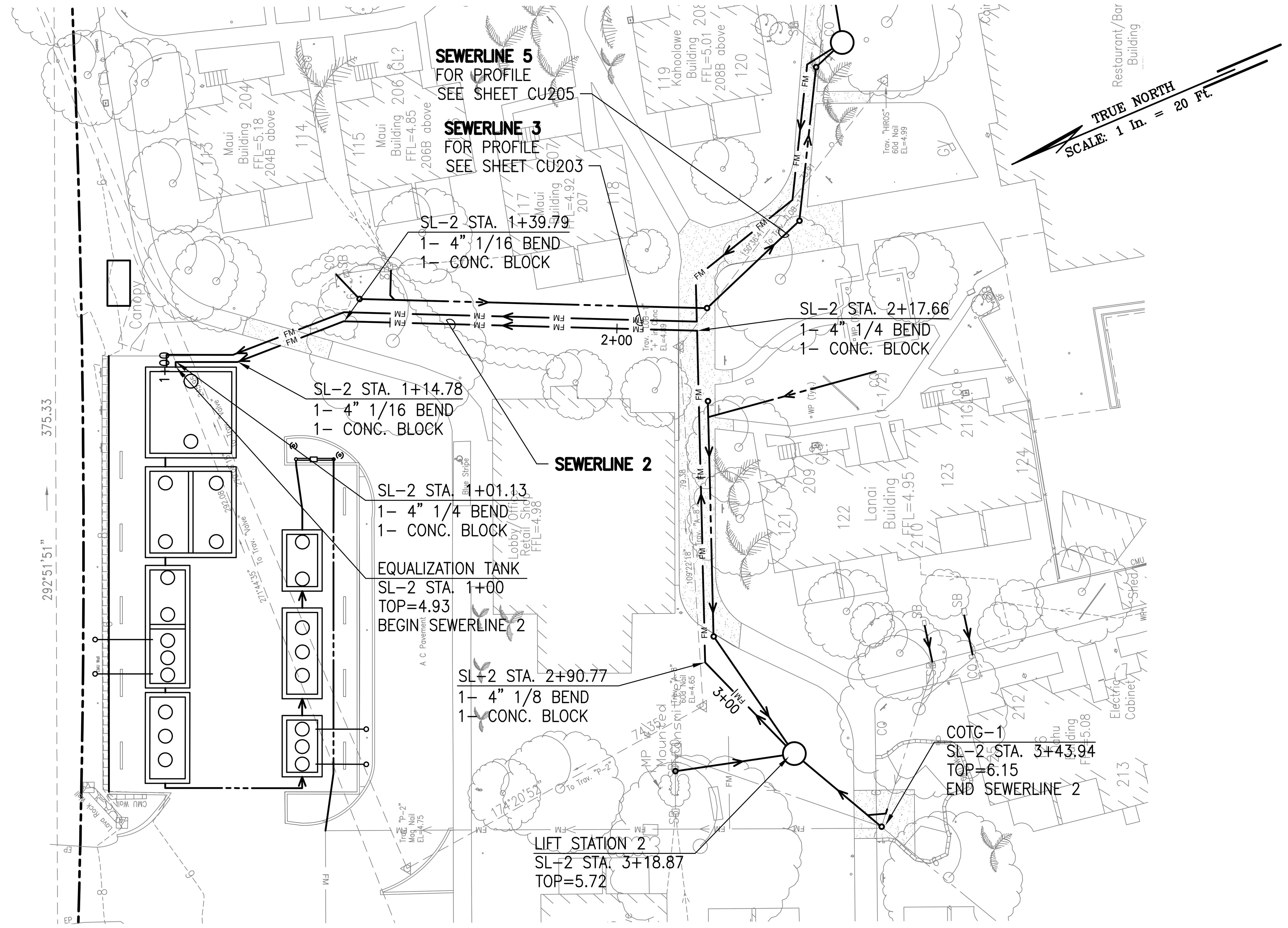
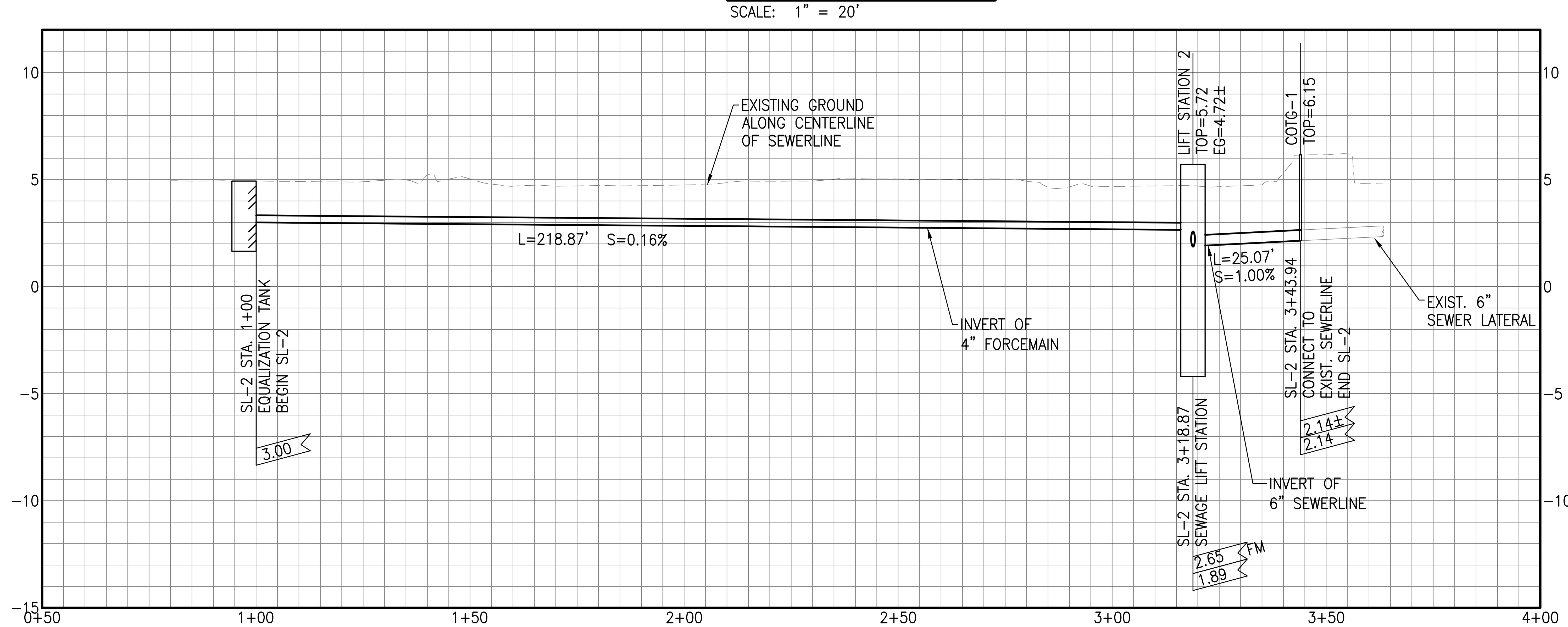


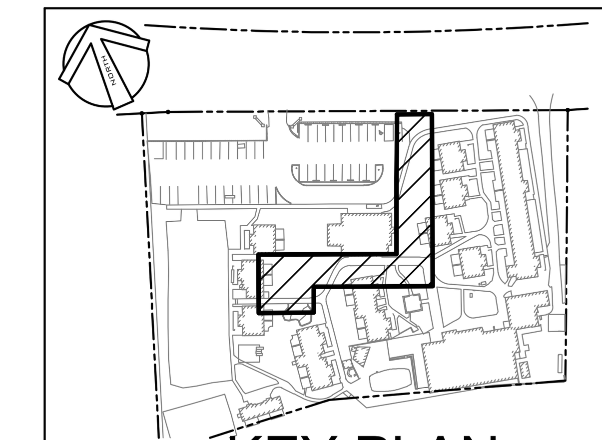
SEWERLINE 2 PLAN

SCALE: 1" = 20'



SEWERLINE 2 PROFILE

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



KEY PLAN
NOT TO SCALE

GRAPHIC SCALES:

20' 10' 0 20' 40'
SCALE: 1" = 20'

4' 3' 2' 1' 0 4' 8'
SCALE: 1" = 4'

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.

SSFM International
SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

SEWERLINE PLAN AND PROFILE 2

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DATE
JUNE 26, 2020

SHEET NUMBER
CU202
OF SHEETS

PRINTED: 6/26/20

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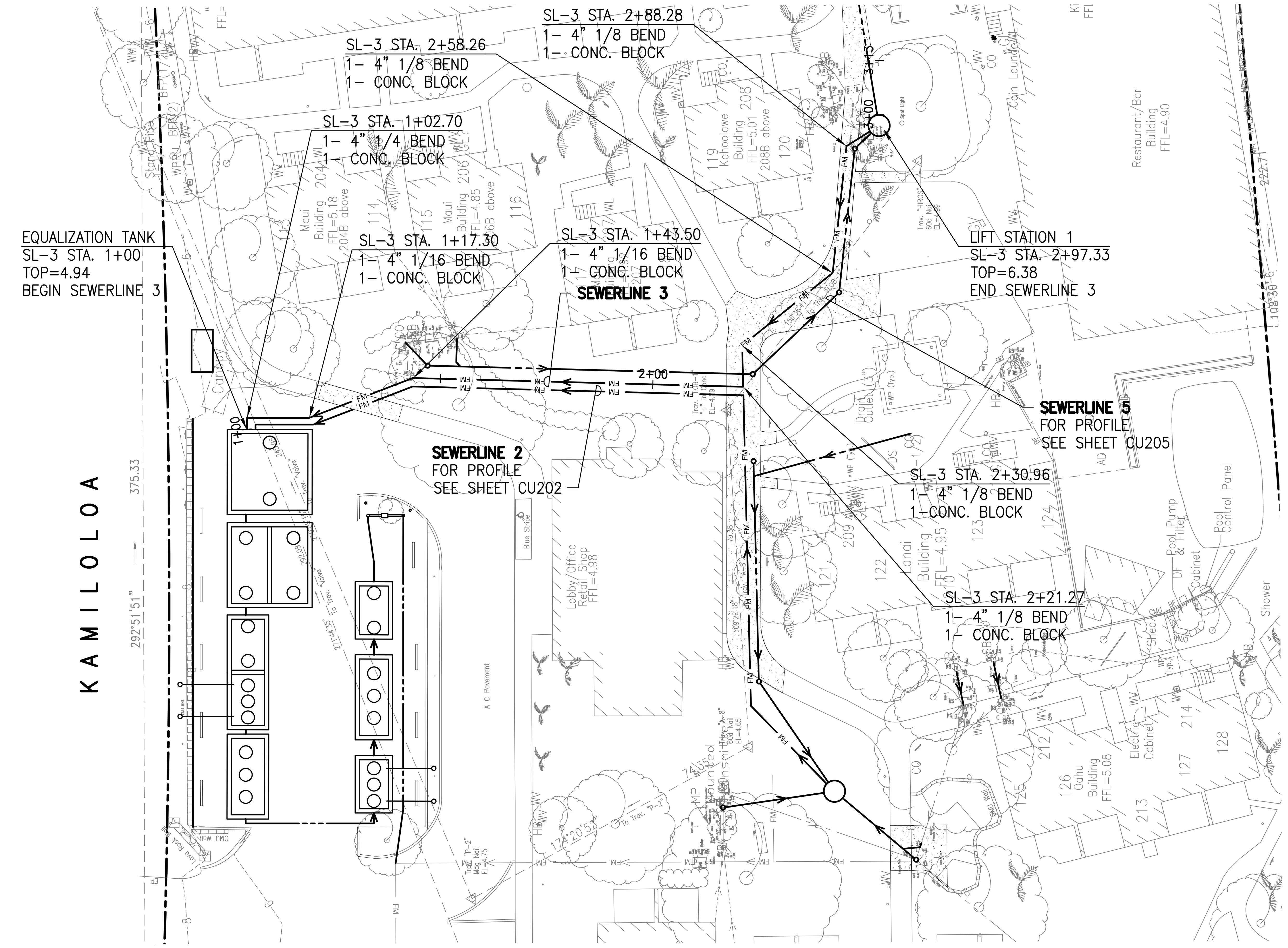
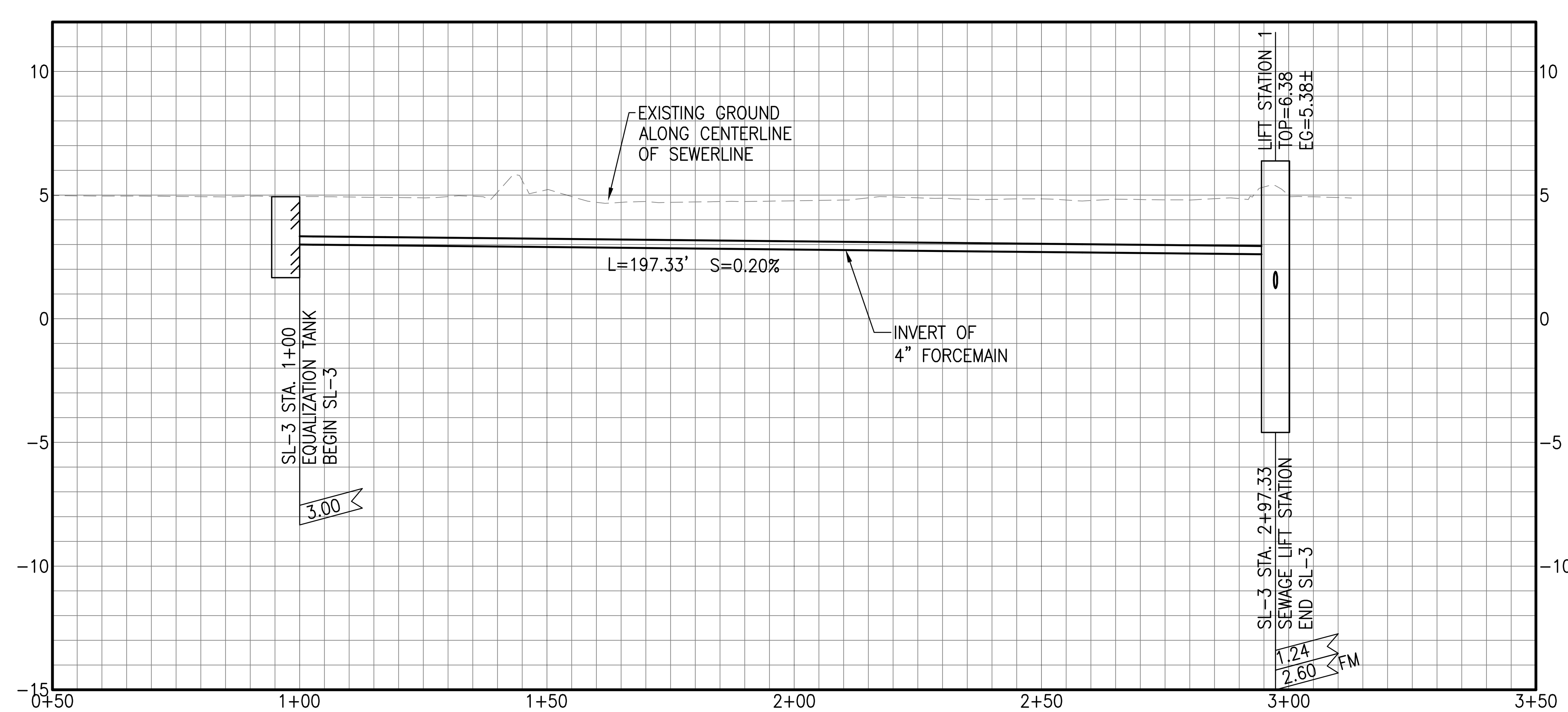


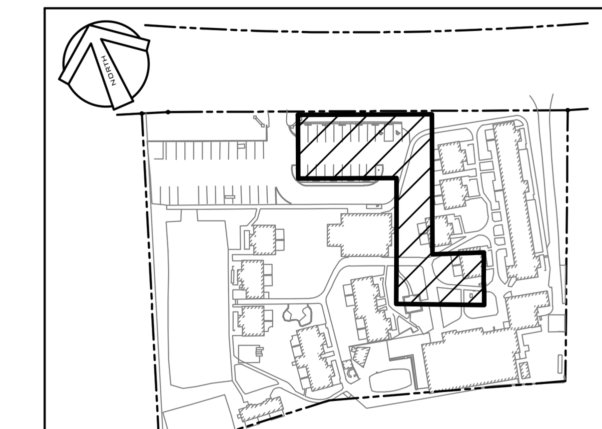
SEWERLINE 3

SCALE: 1" = 20'



SEWERLINE 3

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



KEY PLAN

NOT TO SCALE

GRAPHIC SCALES:

20' 10' 0 20' 40'

SCALE: 1" = 20'

4' 3' 2' 1' 0 4' 8'

SCALE: 1" = 4'

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.

SSFM International

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:

HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

SEWERLINE PLAN AND PROFILE 3

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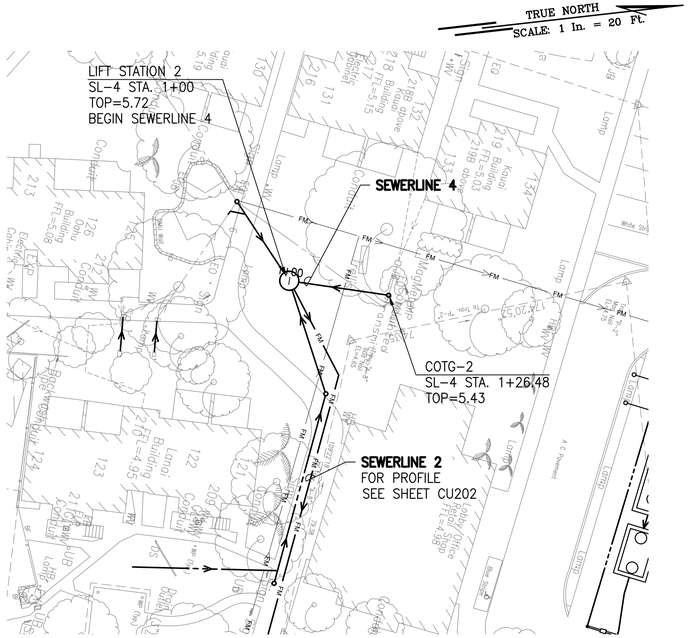
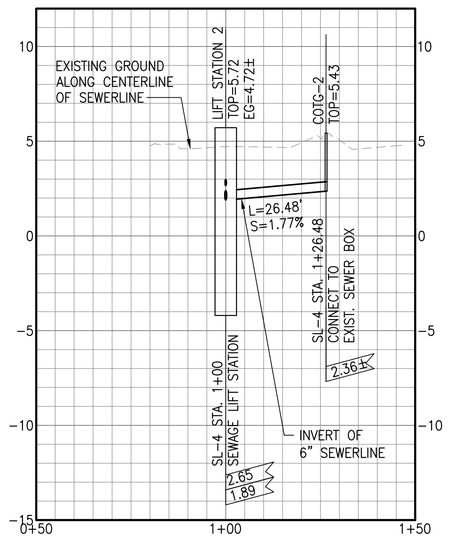
DATE
JUNE 26, 2020

SHEET NUMBER
CU203
OF SHEETS



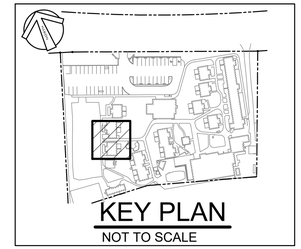
SEWERLINE – 4 PROFILE

SCALE: HORIZ 1" = 20'



SEWERLINE – 4 PROFILE

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



This work was prepared by me or under my supervision and I am responsible for its accuracy. I will keep the engineer of record informed of any changes occurring in my address. (Sections 16-115-22 and 16-115-23, Hawaii Administrative Rules, Definition of "Responsible Charge" and Guidelines for Preparation of Submittals, Standards, and Procedures)

signature — expiration date of this license

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

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

SEWERLINE PLAN AND PROFILE 4

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DATE
JUNE 26, 2020

SHEET NUMBER
CU204
OF SHEETS

GRAPHIC SCALES:

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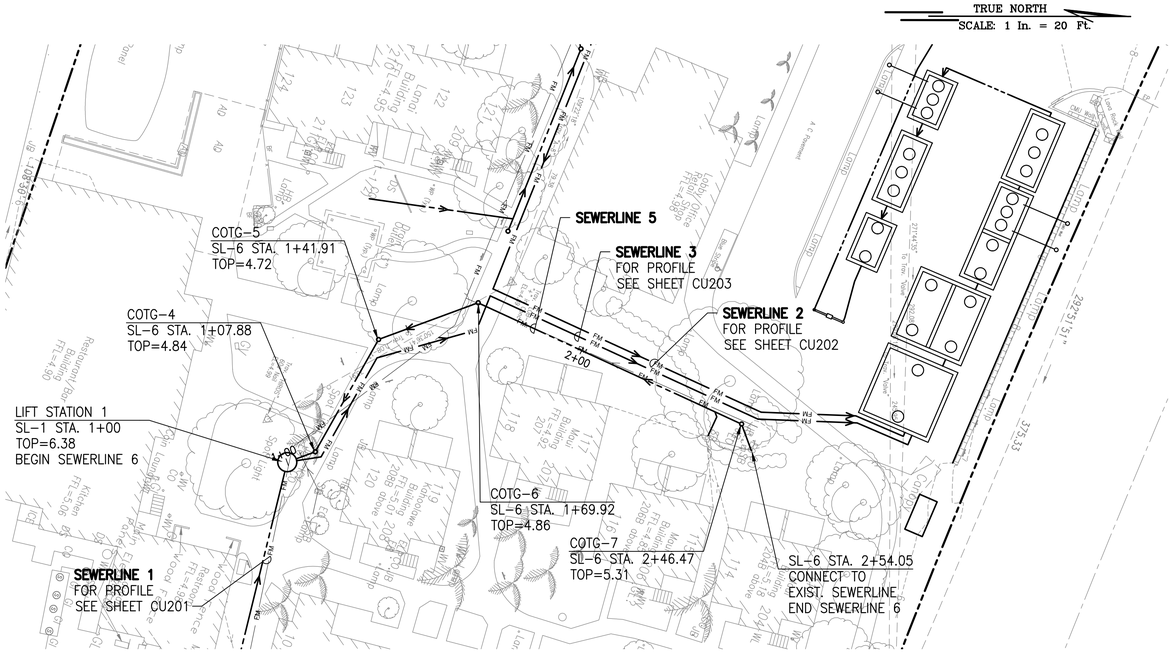
SCALE: 1" = 20'

4' 3' 2' 1' 0 4' 8'
SCALE: 1" = 4'

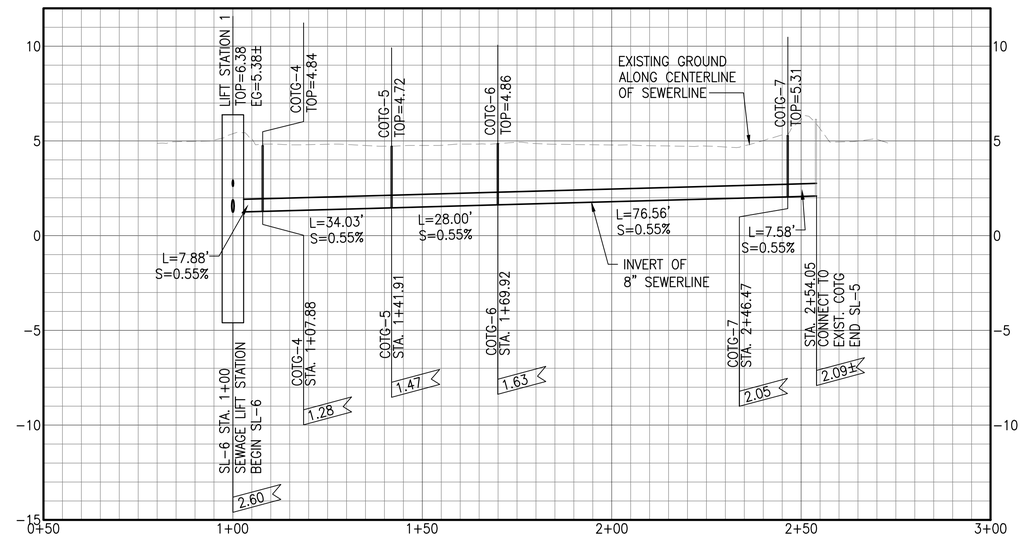
W:_CIVIL 3D PROJECTS\2018_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU204 UTIL PLAN PROF.DWG 6/24/2020 3:46 PM

PRINTED: 6/26/20



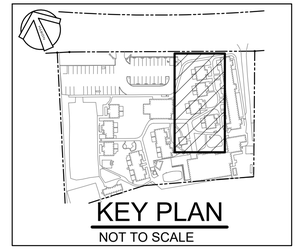
SEWERLINE – 5 PLAN

SCALE: HORIZ 1" = 20'



SEWERLINE – 5 PROFILE

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



GRAPHIC SCALES:

20' 10' 0 20' 40'
SCALE: 1" = 20'

4' 3' 2' 1' 0 4' 8'
SCALE: 1" = 4'

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W:_CIVIL 3D PROJECTS\2018_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU205 UTIL PLAN PROF.DWG 6/25/2020 10:10 PM

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signature | expiration date of this license

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

SSFM International

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

SEWERLINE PLAN AND PROFILE 5

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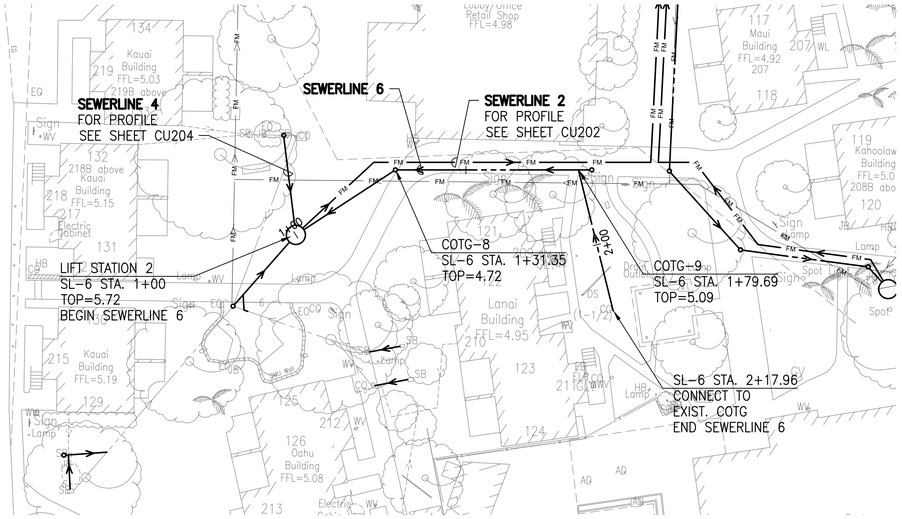
DATE
JUNE 26, 2020

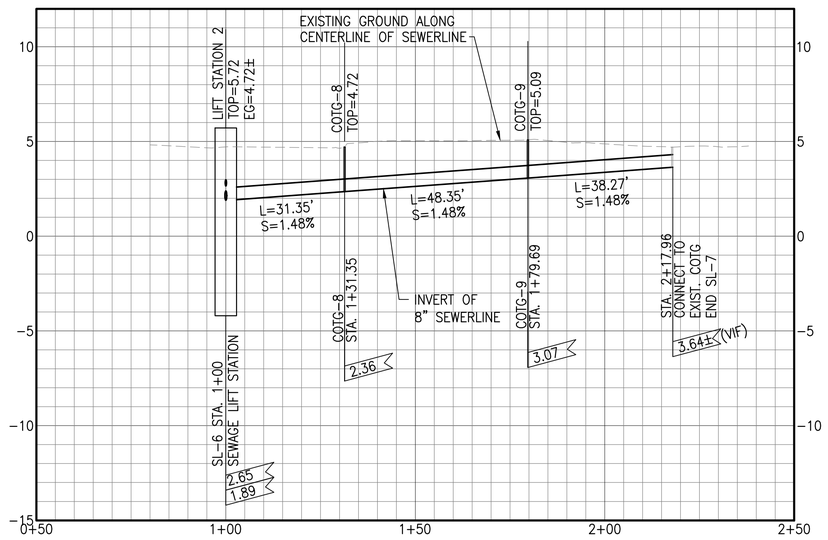
SHEET NUMBER
CU205

OF SHEETS



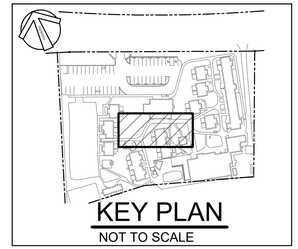
SEWERLINE – 6 PLAN

SCALE: HORIZ 1" = 20'



SEWERLINE – 6 PROFILE

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



GRAPHIC SCALES:

20' 10' 0 20' 40'
SCALE: 1" = 20'

4' 3' 2' 1' 0 4' 8'
SCALE: 1" = 4'

This work was prepared by me or under my supervision and I accept responsibility for its content per the requirements of Section 464-3, Definitions of the Board of Architecture Rules, Title 16, Department of Commerce and Consumer Affairs, State of Hawaii (Landscape Architects)

signature

expiration date of this license

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

SSFM International, Inc.
82 Pulehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

SEWERLINE PLAN AND PROFILE 6

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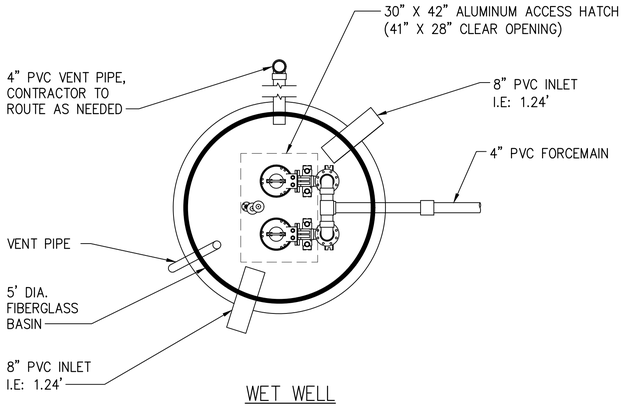
DATE
JUNE 26, 2020

SHEET NUMBER
CU206

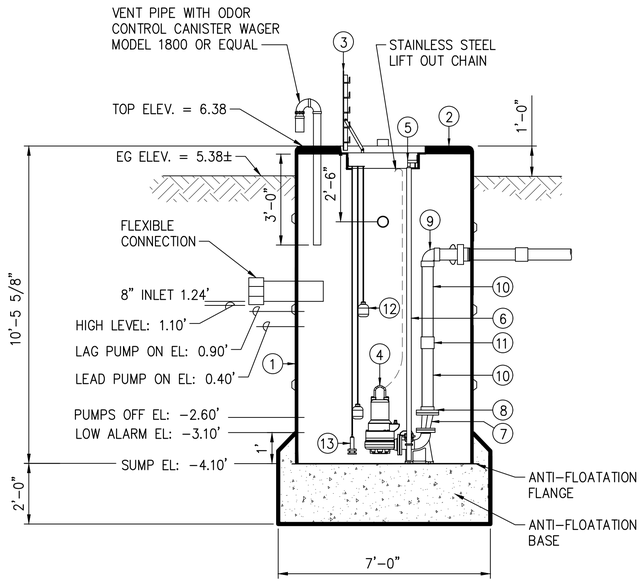
OF SHEETS

PRINTED: 6/26/20

W:_CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU206 UTIL PLAN PROF.DWG 6/26/2020 3:01 PM SAMANO



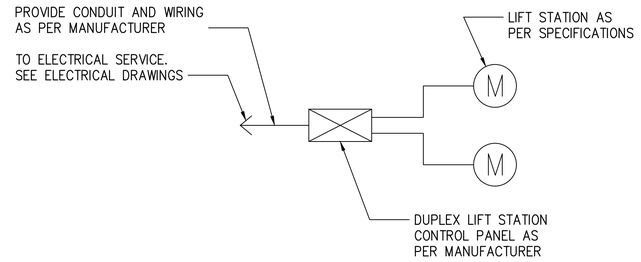
WET WELL



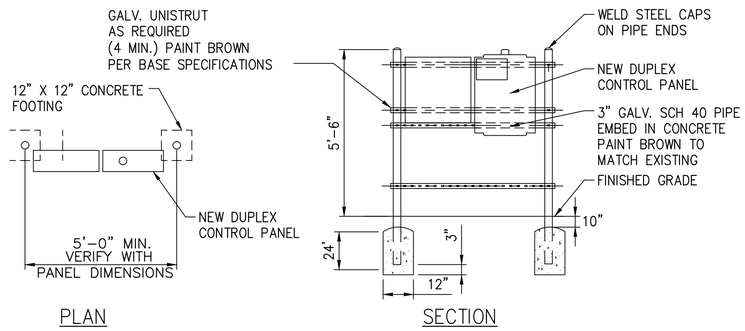
SIDE VIEW

SYSTEM CHARACTERISTICS	
DESCRIPTION	VALUE
DUTY POINT	120 gpm @ 17' TDH
PUMP TYPE	SUBMERSIBLE NON-CLOG PUMP
MOTOR SIZE	2.9 HP, 8A, EXPLOSION PROOF
MAX PUMP RUN SPEED	1750 rpm
AVAILABLE POWER	208 V , 3 Ph
WET WELL LINER/COATING	EPOXY COATING, SEE NOTE BELOW
ACCESS HATCH LOADING CRITERIA	INCIDENTAL H-20

		PARTS LIST
ITEM	QTY	DESCRIPTION
1	1	5 FT FIBERGLASS LIFT STATION
2	1	FIBERGLASS TOP
3	1	ALUMINUM SINGLE DOOR HATCH WITH A CLEAR OPENING OF 41 x 28 WITH PADLOCK HASP.
4	2	NON-CLOG SUBMERSIBLE SEWAGE PUMP 3" DISCHARGE, 2 HP,THERMAL SENSORS, SEAL FAIL, STANDARD CABLE LENGTH 30FT, EXTERIOR COATED WITH HIGH SOLIDS POLY AMIDE EPOXY
5	2	UPPER GUIDE RAIL BRACKET, FOR 1.5" GUIDE RAILS
6	4	1-1/2" DIA 304SS GUIDE RAIL PIPE
7	2	4" X 3" ECCENTRIC REDUCER
8	7	4" PVC VAN STONE FLANGE
9	3	4" PVC SCH80 90DEG ELBOW
10	4	4" PVC SCH80 PIPE LENGTH TO SUIT
11	4	4" PVC SCH80 COUPLING
12	2	INTERNALLY WEIGHTED NON-MECURY MECHANICAL FLOAT
13	1	PRESSURE TRANSDUCER
14	5	FLEXIBLE RESILIENT PIPE CONNECTOR MEETING ASTM C-923 FOR 8" CORE HOLE, 4" DIP



LIFT STATION CONTROL SCHEMATIC



PLAN SECTION

PUMP CONTROLS

1. A PUMP CONTROL PANEL SHALL BE PROVIDED TO START AND STOP OF THE PUMPING UNITS, AND PROVIDE ALARM CONTACTS.

2. THE DUPLEX PUMP CONTROL PANEL SHALL FEATURE A " #1 LEAD – #2 LEAD SWITCH WHICH WILL ENABLE EITHER PUMP TO BE DESIGNATED LEAD PUMP OR OTHERWISE HAVE THE LEAD PUMP ALTERNATE WITH EACH CYCLE.

3. EACH PUMP IS TO BE PROVIDED WITH A "HAND-OFF-AUTOMATIC" SWITCH. IN THE "AUTOMATIC" POSITION THE PUMPING UNITS ARE TO BE AUTOMATICALLY CONTROLLED BY WET WELL LEVEL. IN THE " OFF" POSITION THE PUMPS WILL NOT OPERATE. IN THE "HAND" POSITION THE PUMPS WILL START AND RUN REGARDLESS OF THE WET WELL LEVEL.

4. THE PUMP CONTROL PANEL IS TO INCLUDE THE FOLLOWING FEATURES AND EQUIPMENT:
- PUMP MOTOR STARTERS EQUIPPED WITH OVERLOAD PROTECTION AND REMOTE OVERLOAD CONTACT FOR ALARM OUTPUT; SIZED FOR AND COMPATIBLE WITH THE SUBMERSIBLE SEWAGE PUMP MOTORS. THE OVERLOAD RE-SETS ARE TO BE EXTENDED TO THE FACE OF THE CONTROL PANEL.
- AN INDIVIDUAL DISCONNECT FOR EACH PUMPING UNIT. THE DISCONNECTS ARE TO PERMIT LOCKING AND/OR TAGGING OUT AND ARE TO BE INTERLOCKED WITH THE CONTROL PANEL DOOR.
- AN ELAPSED TIME METER FOR EACH PUMPING UNIT.
- AN AMPERAGE METER FOR EACH PUMPING UNIT.
- A POWER FAILURE RELAY FOR ALARM OUTPUT
- A PHASE MONITOR OR SIMILAR DIAGNOSTIC DEVICE COMPLETE WITH INDICATOR LIGHTS FOR EACH PHASE
- A SEPARATE TERMINAL BLOCK FOR CONNECTION OF ALARM CONTACT.

WET WELL LEVEL CONTROL

1. WET WELL LEVEL CONTROL IS TO BE ACTUATED THROUGH THE USE OF THE PRESSURE TRANSDUCER.

2. HIGH AND LOW LEVEL ALARMS ARE TO BE ACTUATED THROUGH THE USE OF MERCURY FLOAT SWITCHES.

ALARMS

1. THE ALARM OUTPUT IS TO INCLUDE THE FOLLOWING AS A MINIMUM:
- POWER FAILURE ALARM ACTUATED BY A POWER FAILURE RELAY. THE POWER FAILURE ALARM SHALL ALSO BE ACTUATED BY THE PHASE MONITOR
- HIGH LEVEL ALARM (ACTUATED BY FLOAT SWITCH)
- OVERLOAD ALARMS FOR EACH PUMPING UNIT ACTUATED BY AN AUXILIARY CONTACT ON THE OVERLOAD RELAY
- THERMAL ALARMS FOR EACH PUMPING UNIT
- LEAK SEAL DETENTION ALARM FOR EACH PUMPING UNIT

POWER AND CONTROL WIRING

1. CONDUITS SHALL BE PROVIDED FROM THE ELECTRICAL KIOSK TO THE WET WELL FOR THE PUMP POWER CABLES, THE PUMP MOISTURE AND TEMPERATURE ALARM WIRING, THE PRESSURE TRANSDUCER AND THE FLOAT SWITCH CABLES. CONDUITS SHALL BE OVERSIZED TO ALLOW EASY INSTALLATION AND REMOVAL OF CABLES.

2. POWER AND CONTROL WIRING IS TO BE CONNECTED ON A TERMINAL BLOCK IN AN EXPLOSION PROOF JUNCTION BOX IN AN EASILY ACCESSIBLE LOCATION WITHIN THE WET WELL. CONDUIT SEAL FITTINGS ARE TO BE PROVIDED WHERE THE CONDUITS ENTER WET WELL FORM THE KIOSK.

3. PROVIDE EXPLOSION PROOF SEALS AND FITTINGS FOR ALL NEW WIRING AND CONDUITS AS PER NATIONAL ELECTRICAL CODE.

4. COORDINATE ALL CONNECTION WORK TO THE CONTROL PANEL WITH THE ELECTRICAL CONTRACTOR.

This work was prepared by me or under my supervision and I am responsible for its accuracy. Any changes, corrections or additions to this work subsequent to my signature and seal shall be the responsibility of the person making such changes, corrections or additions. (Unless otherwise indicated)

signature | expiration date of this license

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

SSFM International, Inc.
82 Puehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

LIFT STATION 1 DETAILS

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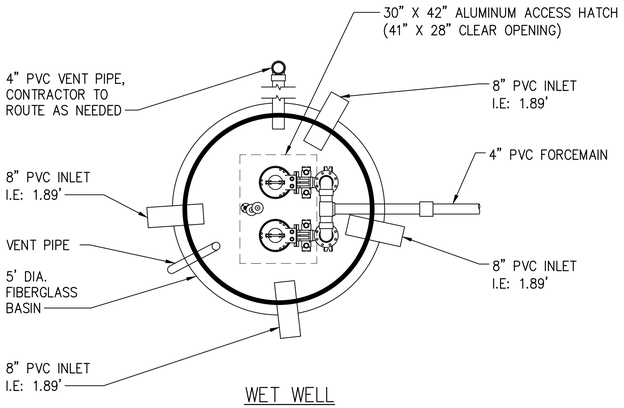
DATE
JUNE 26, 2020

SHEET NUMBER
CU501

X OF SHEETS

PRINTED: 6/26/20

W:_CIVIL 3D PROJECTS\2018_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU501 LIFT STATION 1 DETAILS.DWG 6/24/2020 3:27 PM SAMANO



WET WELL

SYSTEM CHARACTERISTICS	
DESCRIPTION	VALUE
DUTY POINT	120 gpm @ 17' TDH
PUMP TYPE	SUBMERSIBLE NON-CLOG PUMP
MOTOR SIZE	2.9 HP, 8A, EXPLOSION PROOF
MAX PUMP RUN SPEED	1750 rpm
AVAILABLE POWER	208 V , 3 Ph
WET WELL LINER/COATING	EPOXY COATING, SEE NOTE BELOW
ACCESS HATCH LOADING CRITERIA	INCIDENTAL H-20

		PARTS LIST
ITEM	QTY	DESCRIPTION
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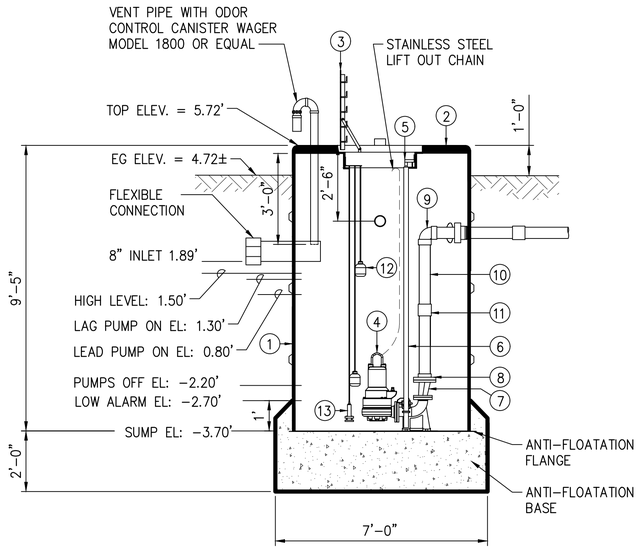
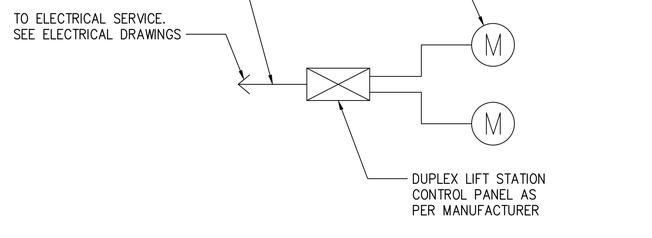
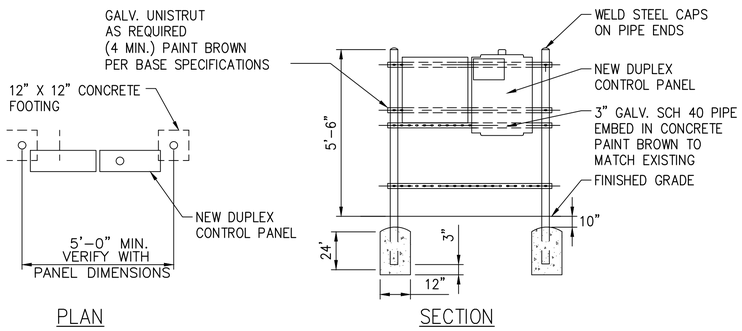


SIDE VIEW



LIFT STATION CONTROL SCHEMATIC



PLAN SECTION

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3. PROVIDE EXPLOSION PROOF SEALS AND FITTINGS FOR ALL NEW WIRING AND CONDUITS AS PER NATIONAL ELECTRICAL CODE.

4. COORDINATE ALL CONNECTION WORK TO THE CONTROL PANEL WITH THE ELECTRICAL CONTRACTOR.

This work was prepared by me or under my supervision and to the best of my knowledge and belief, conforms to accepted engineering practice standards of the State of Hawaii. Any deviations shall be reported immediately to the Engineer of Record (unless exempted).

signature | expiration date of this license

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

SSFM International, Inc.
82 Puehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT
SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

LIFT STATION 2 DETAILS

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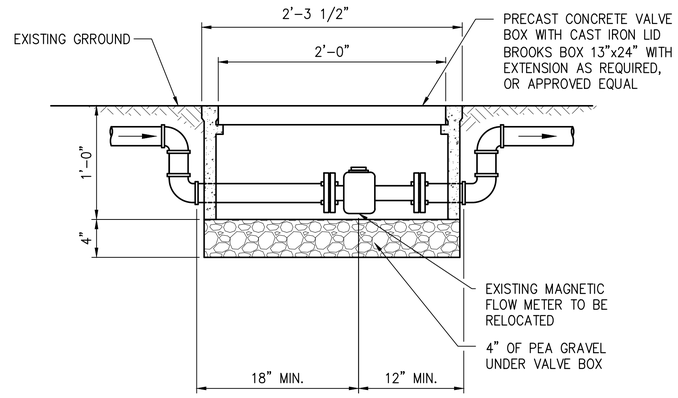
DATE
JUNE 26, 2020

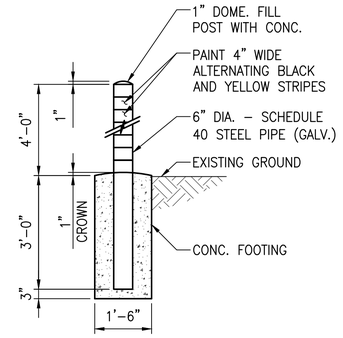
SHEET NUMBER
CU502
X OF SHEETS

PRINTED: 6/26/20

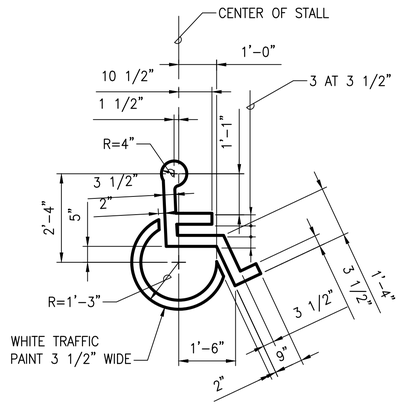
W:_CIVIL 3D PROJECTS\2016_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU502 LIFT STATION 2 DETAILS.DWG 6/17/2020 4:46 PM SAMANO



1 CU503 FLOW METER DETAIL
SCALE: 1-1/2" = 1'-0"



2 CU503 BOLLARD DETAIL
SCALE: 1/2" = 1'-0"



3 CU503 ACCESSIBLE PAVEMENT MARKING DETAIL
SCALE: 1/2" = 1'-0"

This work was prepared by me or under my supervision and I accept responsibility for it's content and for any subsequent changes thereto. (Description of responsibility shall be limited to the Professional Engineer's Definition of the Terms of Architecture, Engineering, Surveying, Landscape Architecture, Interior Architecture, Space Planning, Architectural Acoustics, Structural Architecture, Specialty Architecture, and Landscape Architecture)

signature expiration date of this license

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

SSFM International, Inc.
82 Puehu Place, Suite 201
Kahului, Hawaii 96732

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

PROJECT:
HOTEL MOLOKAI
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
TMK: (2) 5-4-002: 001
MOLOKAI, MAUI, HAWAII

MISCELLANEOUS DETAILS

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DATE
JUNE 26, 2020

SHEET NUMBER
CU503

X OF SHEETS

C:\CIVIL 3D PROJECTS\2018_197.000 MC HOTEL MOLOKAI WWTF\01 CE DWG\CU503 SEWER DETAILS 3.DWG 6/16/2020 7:48 PM MRETES

PRINTED: 6/26/20