NEIL ABERCROMBIE
GOVERNOR
STATE OF HAWAI'I

JOBIE M. K. MASAGATANI
CHAIRMAN DESIGNATE
HAWAIIAN HOMES COMMISSION

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAI'I 96805

February 7, 2013

Mr. Gary Gill, Acting Director
Office of Environmental Quality Control
State Department of Health
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Lower Kula Bypass Waterline Improvements,
Makawao, Kula, Maui, Hawaii
TMK: (2)2-3-004:032 and 013 (por.)

The Department of Hawaiian Home Lands hereby transmits the enclosed Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed Lower Kula Bypass Waterline Improvements for publication in the next available edition of the Environmental Notice. This waterline project is situated at TMK (2)2-3-004:032 and 013 (por.), in the Makawao District on the Island of Maui.

Enclosed you will find a Publication Form and two (2) copies of the DEA-AFONSI. We authorize our consultant, Munekiyo and Hiraga, Inc. to forward to you other required documents in electronic format.

Should you have any questions, please call Stewart Matsunaga, Project Manager, Land Development Division, at 620-9283.

Aloha,

Jobie M. K. Masagatani
Chairman Designate
Hawaiian Homes Commission

Enclosure

AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (JULY 2012 REVISION)

Project Name **Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Maui, Hawaii**
Island: **Maui**
District: **Makawao**
TMK: **(2)2-3-004:032 and 013 (por.)**
Permits:
Proposing/Determination Agency:
State of Hawaii, Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, Hawaii 96805
Contact: Stewart Matsunaga
(808)620-9270
Consultant:
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Contact: Mitsuru "Mich" Hirano, AICP
(808)244-2015
Status (check one only):

_**x**_DEA-AFNSI	Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqc@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.
__FEA-FONSI	Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
__FEA-EISPN	Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqc@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.
__Act 172-12 EISPN	Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqc@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
__DEIS	The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
__FEIS	The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
__ Section 11-200-23 Determination	The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

__Section 11-200-27
Determination

The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

__Withdrawal (explain)

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

The proposed project is located in Kula, Maui approximately 0.5 mile east of the intersection of Kula Highway and Omaopio Road. The proposed project involves installing an 18-inch ductile iron bypass waterline from the 2 million gallon Kula Kai Water Tank and connecting to an existing 12-inch waterline at the Kula Kai Booster Pump Station located approximately 1,274 feet to the southwest at elevation 2,730 feet mean sea level (msl). The new 18-inch waterline will supplement an existing 18-inch waterline currently servicing the tank. Water from the existing 18-inch waterline is shared at times during high demand with the Upper Kula Water System to provide additional source supply to the upper system. The new waterline will directly supply the booster pumping station to provide water to the upper system when needed, thereby eliminating the need to share water using the existing waterline. The new waterline will be designed and constructed by the Department of Hawaiian Home Lands and will be turned over to the County of Maui, Department of Water Supply (DWS) upon completion. The County of Maui has a 15-foot easement for the existing and new waterline from the landowner, Haleakala Ranch.

Draft Environmental Assessment

DEPARTMENT OF HAWAIIAN HOME LANDS LOWER KULA BYPASS WATERLINE IMPROVEMENTS, MAUI, HAWAII

(TMK (2)2-3-004:032 AND 013 (POR.))

Prepared for:

State of Hawaii,
Department of Hawaiian Home Lands

January 2013

MUNEKIYO & HIRAGA, INC.

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List of Acronyms

AAS	Archaeological Assessment Survey
AG	Agricultural
ALISH	Agricultural Lands of Importance to the State of Hawaii
AMP	Archaeological Monitoring Plan
BLNR	Board of Land and Natural Resources
BMP	Best Management Practice
BWS	Board of Water Supply
CDP	Census Designated Place
CIA	Cultural Impact Assessment
CML	Central Maui Landfill
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DA	U.S. Department of the Army
DEM	Department of Environmental Management
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOH	Department of Health
DP	Department of Planning
DPR	Department of Parks and Recreation
DPW	Department of Public Works
DWS	Department of Water Supply
EA	Environmental Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Findings of No Significant Impact
Ft.	Feet
GPD	Gallons per Day
GPM	Gallons per Minute
HAR	Hawaii Administrative Rules
HCZMP	Hawaii Coastal Zone Management Program
HDOT	Hawaii Department of Transportation (also see SDOT)
HRS	Hawaii Revised Statutes
LSB	Land Study Bureau
MCC	Maui County Code
MECO	Maui Electric Company, Ltd
MG	Million Gallons
MGD	Million Gallons per Day
MIP	Maui Island Plan
MPC	Maui Planning Commission or Molokai Planning Commission
MPD	Maui Police Department

msl	Mean Sea Level
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OEQC	Office of Environmental Quality Control
PxD	Pane Silty Loam
RGB	Rural Growth Boundary
SDOT	State Department of Transportation
SHPD	State Historic Preservation Division
SLUC	State Land Use Commission
SMA	Special Management Area
STIP	Statewide Transportation Improvement Program
TMK	Tax Map Key
UGB	Urban Growth Boundary
UH	University of Hawaii
UHMC	University of Hawaii Maui College
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WTP	Water Treatment Plant

Executive Summary

Project Name:	Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements
Type of Document:	Draft Environmental Assessment
Legal Authority:	Chapter 343, Hawaii Revised Statutes
Agency Determination:	Anticipated Finding of No Significant Impact
Applicable Environmental Assessment Review "Trigger":	Use of State funds Use of County lands
Location:	Kula, Maui TMK (2)2-3-004:032 and 013(por.)
Applicant:	State of Hawaii Department of Hawaiian Home Lands 91-5420 Kapolei Parkway Kapolei, Hawaii 96805 Contact: Stewart Matsunaga Telephone: (808) 620-9270
Approving Agency:	State of Hawaii Department of Hawaiian Home Lands 91-5420 Kapolei Parkway Kapolei, Hawaii 96805 Contact: Jobie Masagatani Telephone: (808) 620-9270
Consultant:	Munekiyo & Hiraga, Inc. 305 High Street, Suite 104 Wailuku, Hawaii 96793 Contact: Mich Hirano, AICP Telephone: (808) 244-2015
Project Summary:	The State of Hawaii, Department of Hawaiian Home Lands (DHHL), proposes to design and construct the Lower Kula Bypass Waterline Improvements project which is required to provide adequate water service to the DHHL homestead communities located at Keokea and Waiohuli, Maui. The project site is located on Haleakala Ranch pasture land on the northwest face of Haleakala between Kula Highway and

Haleakala Highway. The proposed project involves installing an 18-inch ductile iron bypass waterline from the 2 million gallon Kula Kai Water Tank and connecting to an existing 12-inch waterline at the Kula Kai Booster Pump Station located approximately 1,274 feet to the southwest at elevation 2,730 feet mean sea level (msl). The new 18-inch waterline will supplement an existing 18-inch waterline currently servicing the tank. Water from the existing 18-inch waterline is shared at times during high demand with the Upper Kula Water System to provide additional source supply to the upper system. The new waterline will directly supply the booster pumping station to provide water to the upper system when needed, thereby eliminating the need to share water using the existing waterline. The Kula Kai Water Tank is located on an approximate 1.3-acre site identified by TMK (2)2-3-004:032. The water tank site is owned by the County of Maui. The new waterline will cross agricultural land owned by Haleakala Ranch identified by TMK (2)2-3-004:013 (por.). The new waterline will be funded and constructed by DHHL and will be turned over to the Department of Water Supply upon completion. The County of Maui has a 15-foot easement for the existing and new waterline.

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROJECT LOCATION, CURRENT LAND USE, AND OWNERSHIP

The applicant, State of Hawaii, Department of Hawaiian Home Lands (DHHL), proposes to design and construct an 18-inch bypass waterline from the Kula Kai Water Tank in Kula to connect with an existing 12-inch waterline at the Kula Kai Booster Pump Station located approximately 1,274 feet to the southwest of the tank. The proposed project is located on agricultural grazing land upslope of the Kula Kai subdivision approximately 0.5 mile southeast of Kula Highway and Omaopio Road. See **Figure 1** and **Figure 2**.

The new bypass waterline will run parallel to an existing 18-inch waterline. The Kula Kai Water Tank is located on a 1.3-acre site identified by TMK (2) 2-3-004:032. The water tank site and related improvements are owned by the County of Maui. The new waterline will be located on agricultural land owned by Haleakala Ranch and identified by TMK (2) 2-3-004-13(por.). Once the new waterline is completed, DHHL will turn the improvements over to the County of Maui, Department of Water Supply (DWS). Haleakala Ranch has granted a 15-foot easement to the County of Maui DWS for the existing and new waterline.

The project site is surrounded by agricultural land used for cattle grazing. The Kula Kai Subdivision, a single-family residential development, and the Kula Malu Subdivision are located respectively to the west and north of the project site. Access to the project site is through an agricultural road from the Kula Kai Subdivision off of Ka Drive via Lower Kula Road and Kula Highway.

The lands underlying the water tank site and the existing and proposed waterlines are classified as "Agricultural" by the State Land Use Commission. The water tank site is designated "Public/Quasi-Public" by the Pukalani-Makawao-Kula Community Plan and zoned "Interim" district by the County of Maui. The lands underlying the existing and proposed waterlines are designated "Agricultural" by the Pukalani-Makawao-Kula Community Plan, and zoned "AG, Agricultural" district by the County of Maui.

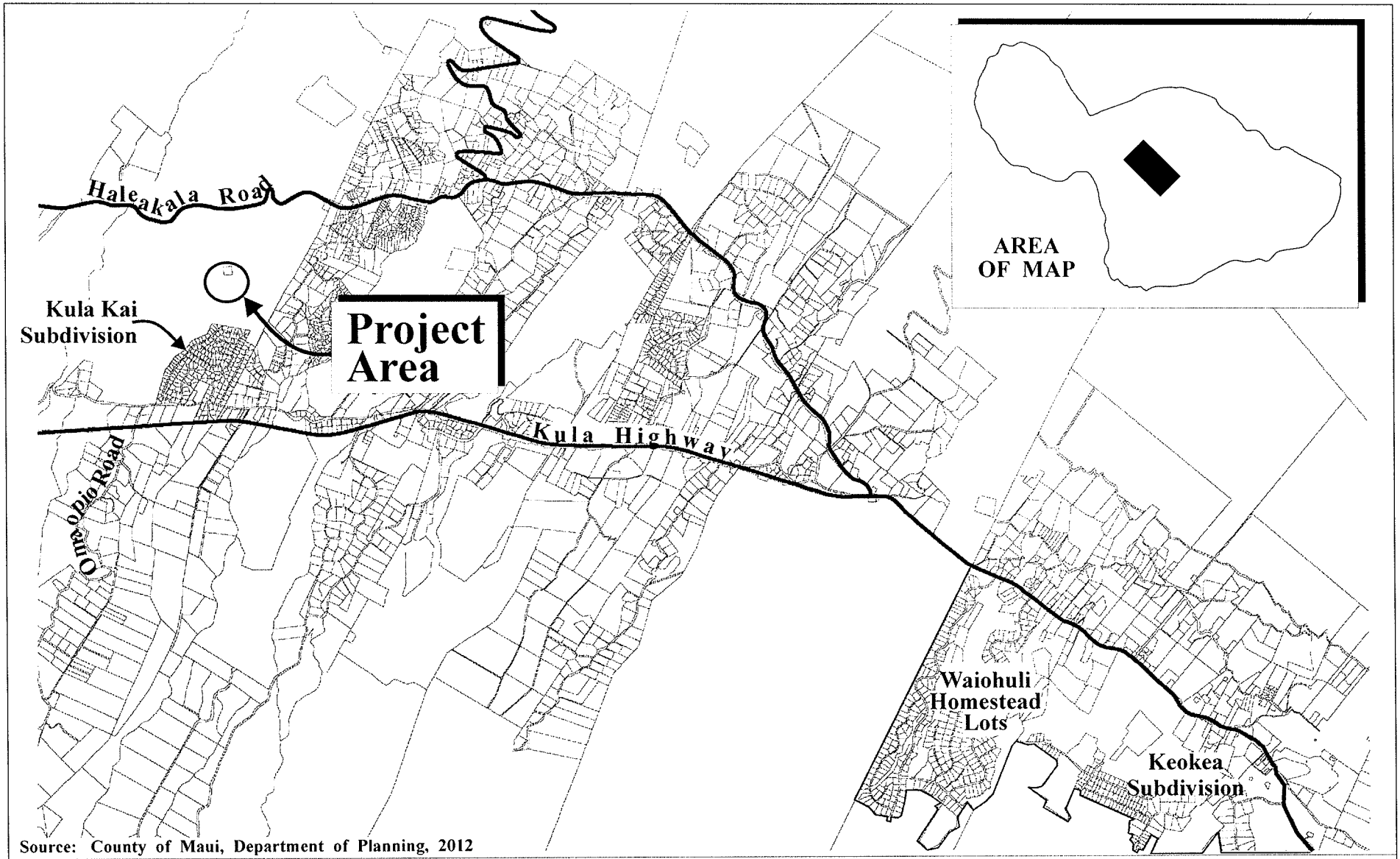


Figure 1

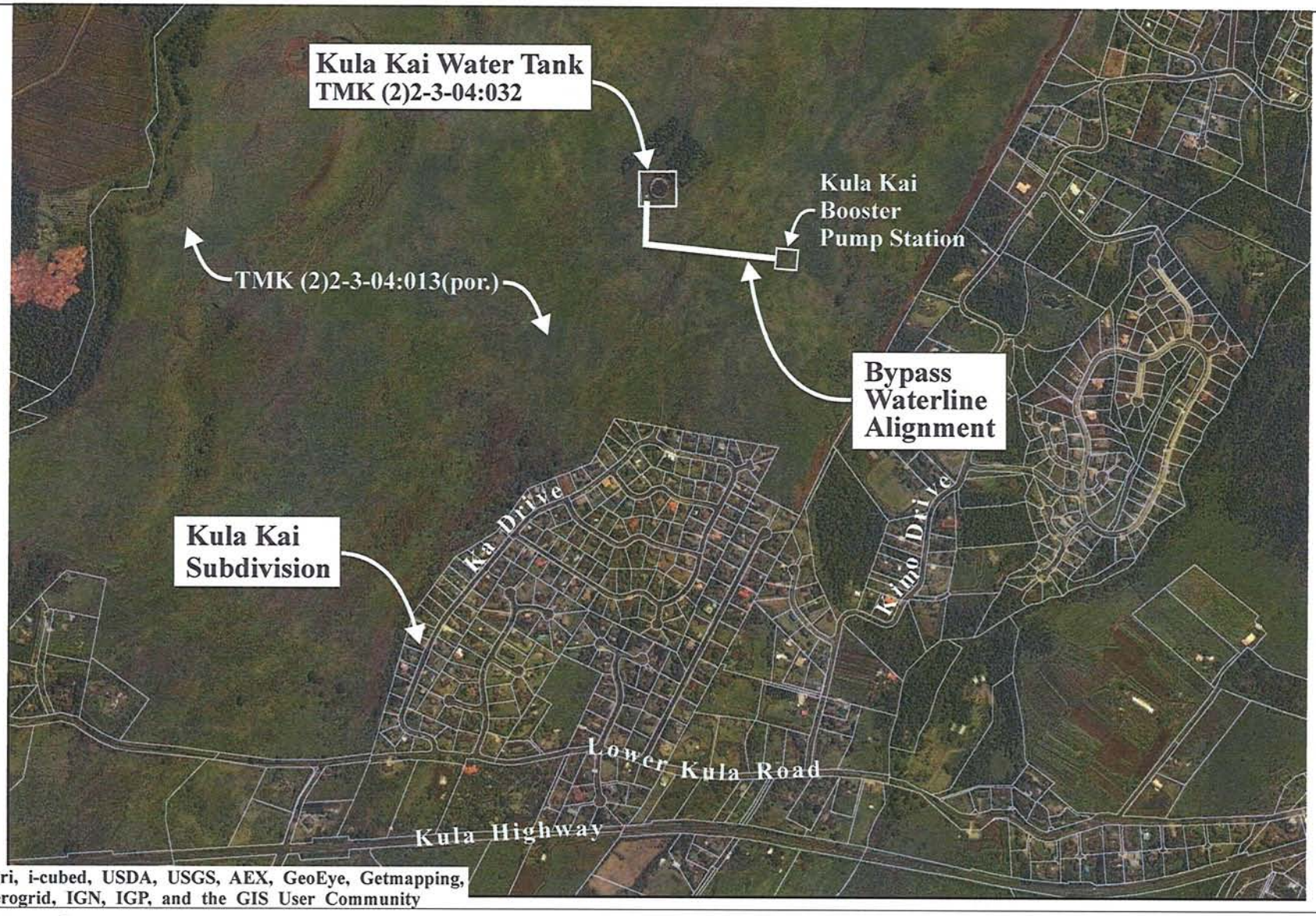
Lower Kula Bypass Waterline
Regional Location Map

2083.50
0 Feet
1041.75 4167

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka\DHHL LKulaWL\regional location



Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Figure 2

Lower Kula Bypass Waterline
Property Location Map

0 521 Feet
260.5 1,042

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

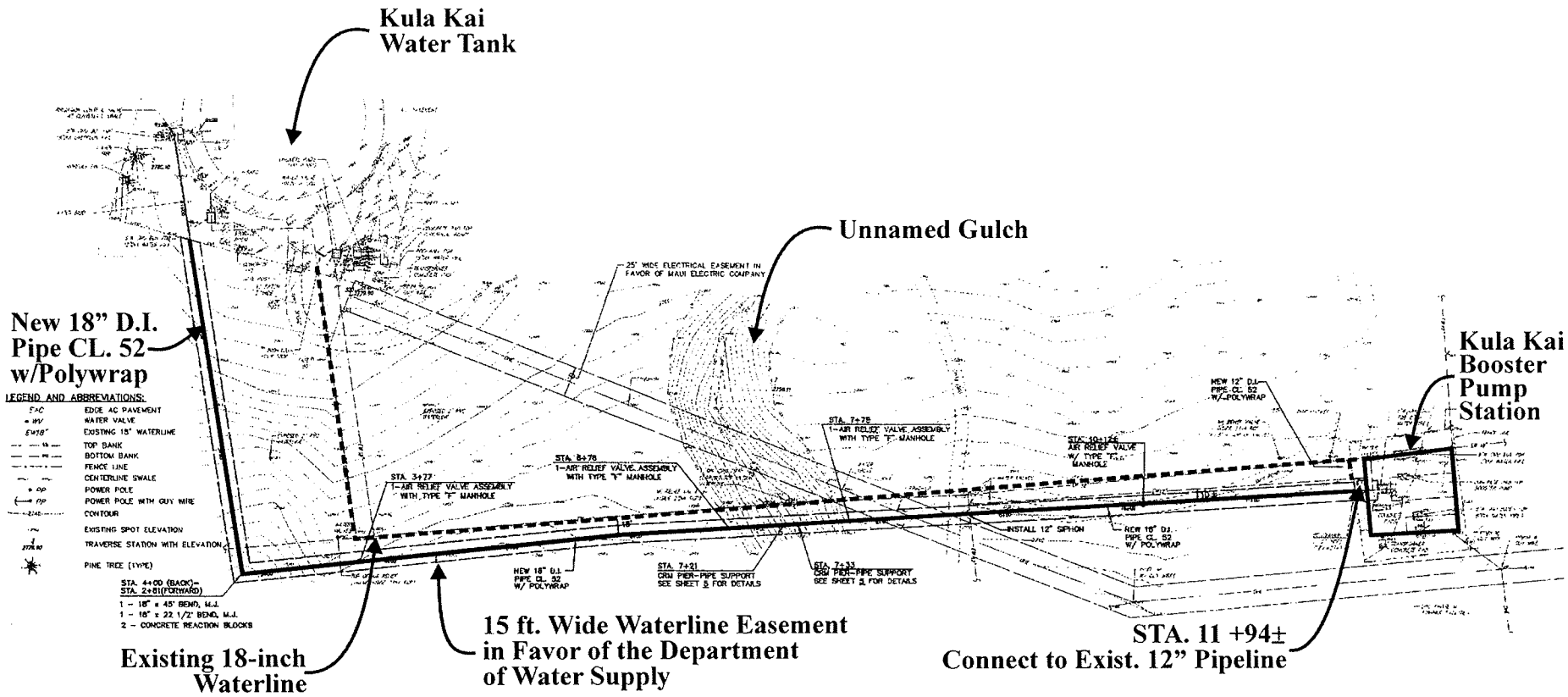
RTTanaka/DHHL LKulaWL/PropertyLocation

B. PROPOSED ACTION

The State of Hawaii, Department of Hawaiian Home Lands (DHHL), proposes to design and install the Lower Kula Water System improvements which are primarily required by the DWS to provide adequate water service to the DHHL homestead communities located at Keokea and Waiohuli, Maui and other users on the Lower Kula Water System. Refer to **Figure 1**. The proposed project involves installing an 18-inch ductile iron bypass waterline from the 2 million gallon Kula Kai Water Tank located at the property identified by TMK (2)2-3-004:032, upslope from Kula Highway in the vicinity of Omaopio Road and connecting to an existing 12-inch waterline approximately 1,274 feet to the southwest at elevation 2,730 ft. mean sea level (msl). See **Figure 3**, **Figure 4**, and **Appendix "A"**, Construction Plans. The new waterline will be buried with approximately three (3) feet of cover. The existing 12-inch waterline connects to the Kula Kai Booster Pump Station which pumps water from the Kula Kai Water Tank to the Upper Kula Water System when additional source of water supply is needed in the upper system. The new 18-inch waterline will provide a direct feed to the booster pumps when additional water is needed in the upper system. The new waterline crosses an unnamed gulch. The section crossing the gulch will be above ground and supported by two (2) concrete pillars. The new 18-inch bypass waterline will supplement an existing 18-inch waterline currently servicing the Kula Kai Water Tank. The new waterline will cross agricultural land owned by Haleakala Ranch identified by TMK (2)2-3-004:013 (por.). The improvements will be funded and constructed by DHHL and will be turned over to the Department of Water Supply upon completion.

C. PROJECT NEED

Water service in the Makawao, Pukalani and Kula region consists of an upper and lower system. The upper system collects water from Haipuaena, Puohakamoa and Waiakamoi Streams. The lower system collects water from Haipuaena, Puokakamoa, Waiakamoi and Honomanu Streams. Water from the existing 18-inch waterline is shared with the Upper Kula Water System in times of high water use and/or demand in the upper system. When needed to supplement the upper system, some of the water from the existing 18-inch waterline is diverted via a 12-inch waterline to the Kula Kai Booster Pump Station and pumped upslope to an existing Upper Kula Water System reservoir. When water is shared with the upper system, the Lower Kula Water System flow is reduced. The new waterline will provide a dedicated source of water to the pumps which feed the Upper Kula Water System, thereby eliminating the sharing of water with the existing line and reduced water flow in the Lower Kula Water System.



Source: R.T. Tanaka Engineers Inc.

Figure 3

Lower Kula Bypass Waterline

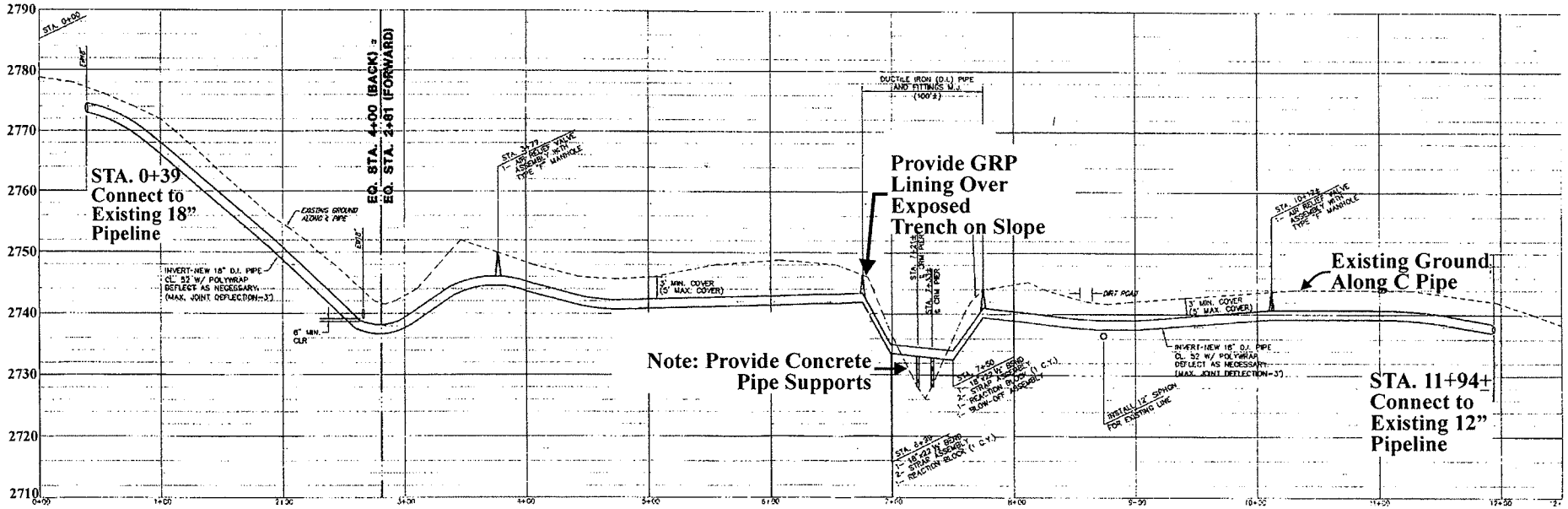
Plan View

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka/DHHL LKulaWL/Plan View lettersize



Source: R.T. Tanaka Engineers Inc.

Figure 4

Lower Kula Bypass Waterline

Profile View

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka/DHHL LKulaWL/Profile View lettersize

The DHHL homestead subdivisions of Keokea and Waiohuli, located approximately six (6) miles south from the project site, receive their potable water from the DWS's Lower Kula Water System. When DHHL developed the Keokea and Waiohuli subdivisions, DWS required DHHL to carry out the bypass waterline offsite improvements to mitigate the extension of the Lower Kula Water System service area.

D. CHAPTER 343, HAWAII REVISED STATUTES REQUIREMENTS

The proposed project involves the use of State of Hawaii funds to construct the bypass waterline and related improvements involving facilities owned by the County of Maui. As such, the proposed actions are triggers for the preparation and processing of an Environmental Assessment (EA) pursuant to Chapter 343, Hawaii Revised Statutes (HRS). Based on the scope of the proposed project, this EA is being prepared in accordance with Chapter 200 of Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules. Accordingly, this document addresses the project's technical characteristics, environmental impacts and alternatives, and advances findings and conclusions relative to the significance of the proposed action. The approving agency for the EA is the State of Hawaii, DHHL.

E. PROJECT COSTS AND SCHEDULE

The estimated cost for the Lower Kula Bypass Waterline Project, including related improvements, is approximately $450,000.00. The implementation of the project will commence after the required construction plan approvals and permits are secured. Assuming all necessary approvals are obtained, construction is expected to begin in June 2013 and take between 3 to 6 months to complete.

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

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

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

a. Existing Conditions

The DHHL Lower Kula Bypass Waterline project site is located in the Omaopio, Kula region on the southwestern slope of Haleakala between elevations 2,700 ft. to 2,800 ft. msl. The Kula area is characterized by a combination of urban, rural and agricultural uses. Agriculture is a strong economic component in the Kula area and produce and flowers grown in Kula are exported to local, mainland, and international markets.

The project site is located east of the Kula Kai Subdivision with access through the subdivision from a 20 ft. wide roadway easement from Ka Drive, which connects to an agricultural road leading to the Department of Water Supply (DWS) 2.0 million gallon (MG) water tank site (aka Kula Kai Water Tank). Ka Drive connects to Lower Kula Road which is east of and parallel to Kula Highway. The nearest roadway connection from Lower Kula Road to the highway is Omaopio Road.

The project site is part of Haleakala Ranch's pasture lands. Single-family homes on urban and rural designated parcels are located in the immediate vicinity of the project site along Ka Drive to the west and Kimo Drive to the south, respectively.

The project site is currently undeveloped and adjacent to the DWS's existing 2.0 MG concrete water tank which is surrounded by asphalt concrete pavement. Miscellaneous structures at the water tank site include a water

valve concrete box, pumps, transformer, and electrical boxes for the existing 18-inch waterline.

b. Potential Impacts and Proposed Mitigation Measures

The proposed action is intended to improve the water pressure within the Lower Kula Water System during times when water needs to be pumped to the Upper Kula Water System. The Lower Kula Water System services single-family homes on urban, rural, and agricultural lots in Lower Kula, including the DHHL homesteads in Keokea and Waiohuli.

The construction of the new waterline is appropriate since it will improve water service to residences in the Lower Kula area. The use of the project site for the proposed waterline extension project is functionally compatible with surrounding agricultural and residential uses. There will be temporary impacts on cattle grazing during construction. Once construction is completed, the area disturbed due to the construction of the waterline will be regrassed and once established, cattle will be allowed to graze.

2. Climate

a. Existing Conditions

Kula's climate is typical of most mountainous areas in Hawaii, with conditions varying by altitude and wind direction. Low land areas are generally typified by arid to semi-tropical climate, while higher elevations are characterized by more temperate conditions.

The Kula region as measured at the nearest gauge (Haleakala Ranger Station) has an annual/average rainfall of approximately 52 inches. January is typically the region's wettest month, while June is typically the driest month. Due to its elevation, temperatures are relatively cool for the Kula region, with average annual temperatures ranging from 45 degrees to approximately 63 degrees (County of Maui, 2011).

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not anticipated to affect climatic conditions in the area.

3. Topography and Soil Characteristics

a. Existing Conditions

Underlying the project site of the proposed new waterline is soil belonging to the Puu Pa-Kula-Pane association. See **Figure 5**. The Puu Pa-Kula-Pane soil association is found on intermediate and high uplands and consists of gently sloping to steep, well-drained, medium-textured or moderately fine textured subsoils. This association is used for truck crops, orchards, pasture, and wildlife habitat.

Soil underlying the project site consists of Pane Silty Loam with 7 to 25 percent slopes (PxD). See **Figure 6**. Permeability is moderately rapid and runoff on this soil is slow to medium with an erosion hazard that is slight to moderate.

b. Potential Impacts and Proposed Mitigation Measures

To prevent soil erosion during site work, the applicant will implement Best Management Practices (BMPs), such as construction of temporary diversion ditches or swales away from graded areas to natural drainageways during construction, thoroughly watering graded areas to reduce windblown erosion, and other measures to minimize or prevent sediments from leaving the construction site. To the extent practicable, work will be carried out in the dry months from April to September. To minimize soil erosion, the contractor will be required to submit a soil erosion control plan in connection with the issuance of a grubbing and grading permit.

While terrain will be locally modified during installation of the new waterline, the proposed improvements are not anticipated to adversely alter topographic characteristics in the vicinity. After construction is completed, the areas disturbed will be regrassed as soon as practicable.

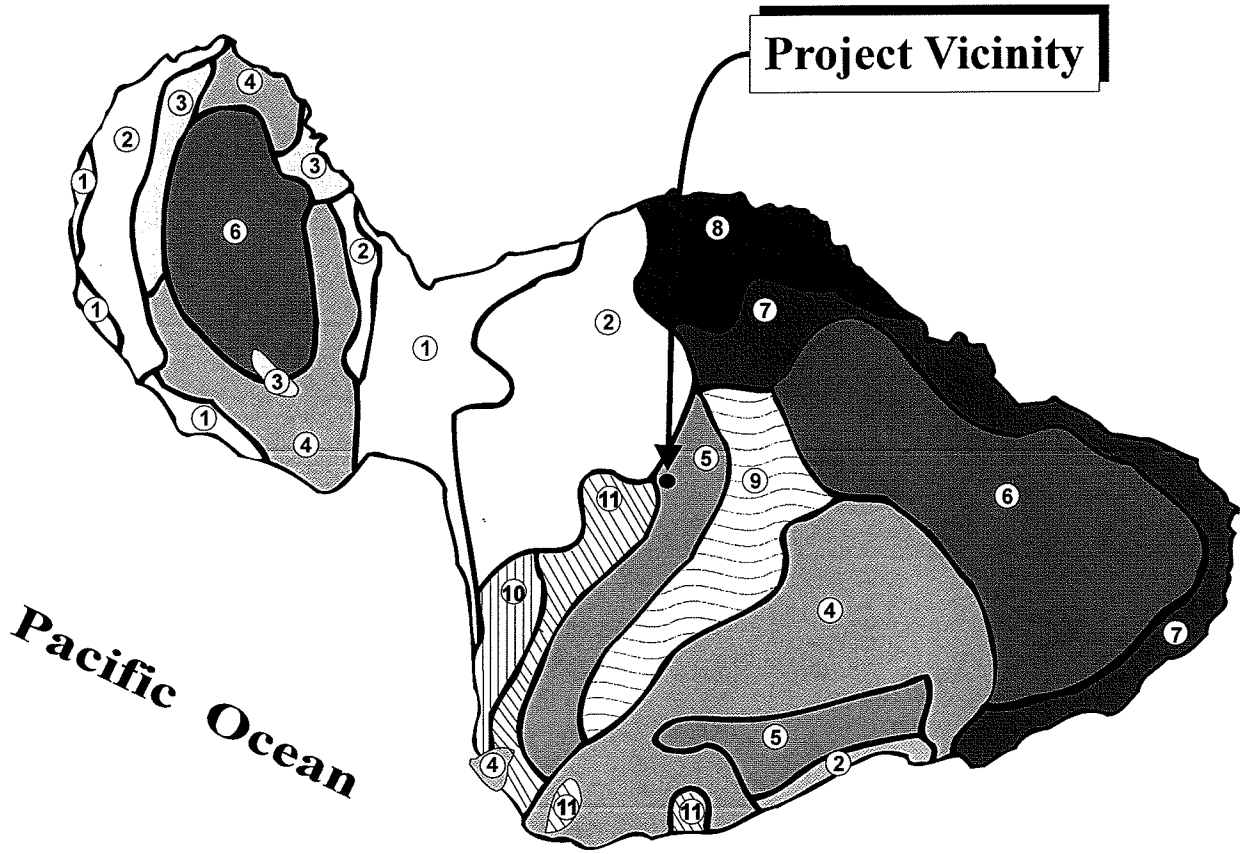
4. Agriculture

a. Existing Conditions

The following summary provides a review of the agricultural designations for the project sites.

LEGEND

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



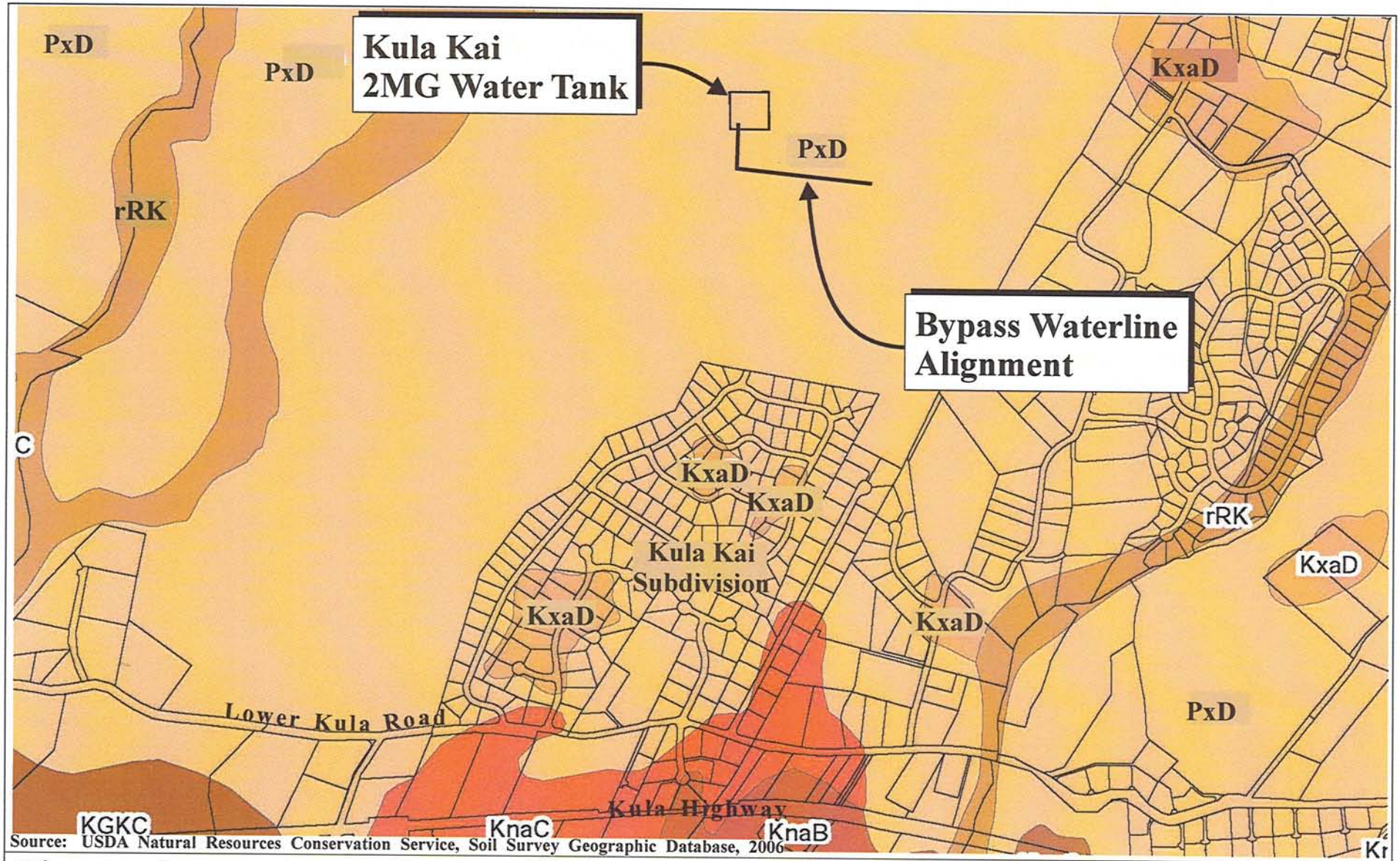
Source: U.S.D.A., Soil Conservation Service

Figure 5 Lower Kula Bypass Waterline
Soil Association Map

NOT TO SCALE

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka/DHHL LKulaWL/SOILS



Source: USDA Natural Resources Conservation Service, Soil Survey Geographic Database, 2006

Figure 6

Lower Kula Bypass Waterline

Soil Classification Map

0 450 Feet
225 900

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka/DHHL LKulaWL/soilclass

(1) **Land Capability Grouping (Natural Resources Conservation Service Rating)**

The 1972 Land Capability Grouping by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) rates soils according to eight (8) levels, ranging from the highest classification level "I" to the lowest "VIII".

Soils underlying the project site are rated Class IVe. Class IV soils have very severe limitations that require very careful management. The subclassification "e" indicates that the soils are subject to severe erosion if they are cultivated and not protected.

(2) **Agricultural Lands of Importance in the State of Hawaii (ALISH)**

In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawaii (ALISH), based primarily, though not exclusively, on their soil characteristics. The three (3) classes of ALISH lands are: "Prime", "Unique", and "Other Important" agricultural land, with the remaining non-classified lands termed "Unclassified". When utilized with modern farming methods, "Prime" agricultural lands have a soil quality, growing season, and moisture supply needed to produce sustained crop yields economically; while "Unique" agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. "Other Important" agricultural lands include those that have not been rated as "Prime" or "Unique".

As reflected by the ALISH map for the Kula region, the proposed project corridor is comprised of lands that have been defined as "Other Important" agricultural lands. See **Figure 7**.

(3) **Overall Productivity Rating**

The University of Hawaii, Land Study Bureau (LSB) developed the Overall Productivity Rating, which classifies soils according to five (5) levels, with "A" representing the class of highest productivity and

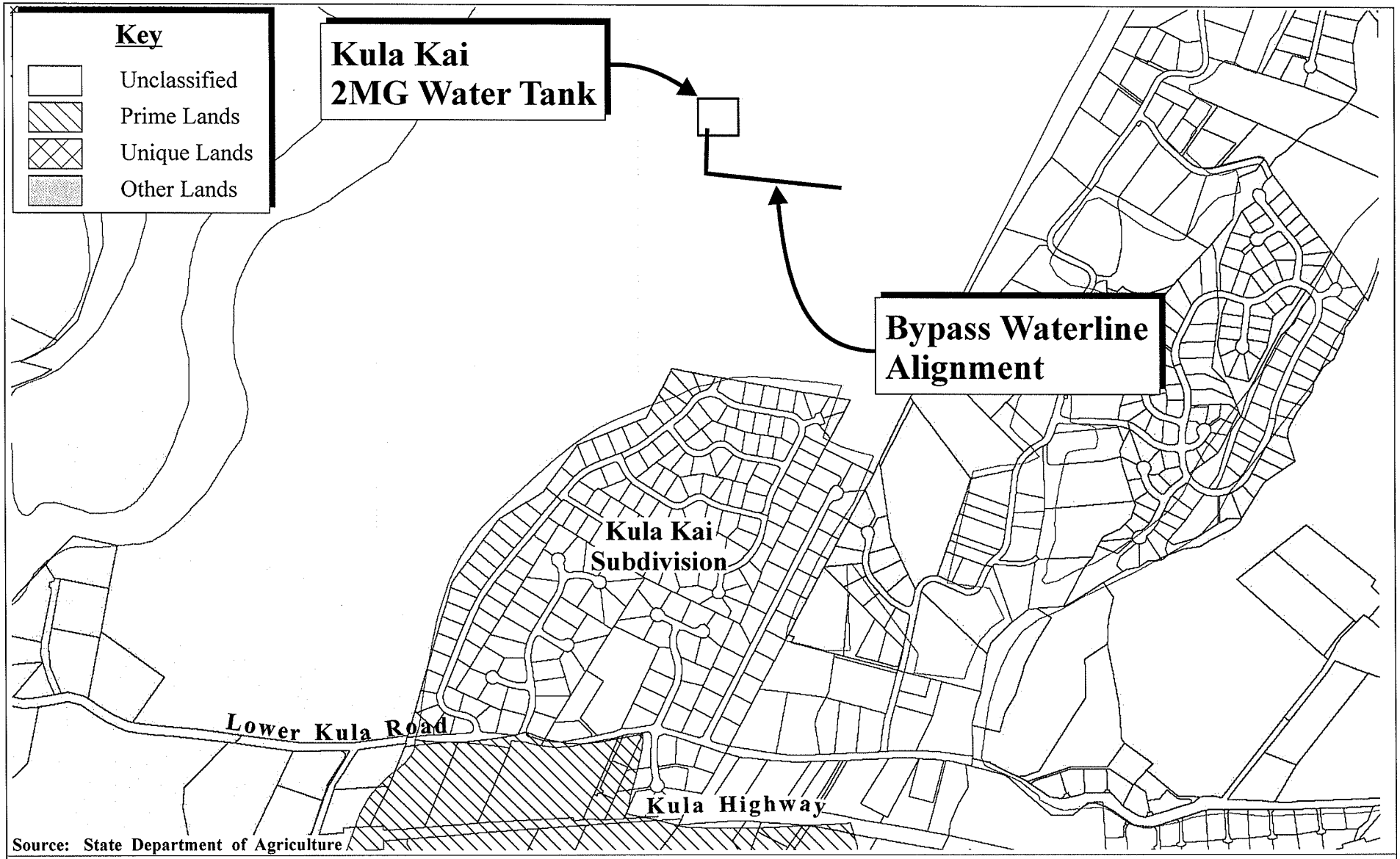


Figure 7 Lower Kula Bypass Waterline

Agricultural Lands of Importance to the State of Hawaii

0 450 Feet
225 900

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka/DHHL LKulaWL/ALISH

"E" representing the lowest. The letters are followed by numbers which further classify the soil types by conveying such information as texture, drainage, and stoniness. Land underlying the project site is designated as "D" rating.

b. Potential Impacts and Proposed Mitigation Measures

The proposed action involves the installation of a new waterline from the Kula Kai 2.0 MG Water Tank to an existing 12-inch waterline which pumps water to the Upper Kula Water System in times of need. There are no active crop production activities on the project site, although the site is used for cattle grazing. The proposed action is intended to maintain water pressure in the existing transmission system that serves the Lower Kula area during times when water from the existing 18-inch waterline is shared with the pump feeding the Upper Kula Water System. Although there will be temporary impacts during construction, there are no adverse long-term impacts to agricultural activities anticipated as a result of the proposed action. Once construction is completed, the area will be regrassed and cattle will be allowed to graze in the project area.

5. Flood and Tsunami Hazards

a. Existing Conditions

As indicated by the Flood Insurance Rate Map (FIRM) for the area, the project site is located in Zone X (unshaded), which denotes an area of minimal flooding and low flood risk. Specifically, the Federal Emergency Management Agency (FEMA) describes areas in Flood Zone X as follows.

> *Areas outside the 1-percent annual chance floodplain, areas of 1% annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1% annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.*

In addition, the project site is situated outside of the tsunami zone and designated tsunami evacuation areas.

b. Potential Impacts and Proposed Mitigation Measures

The proposed waterline project is located between elevations 2,700 to 2,800 ft. msl and not located within a special flood hazard district. Moreover, because the project is located outside of the tsunami inundation zone and designated tsunami evacuation zones, there are no threats from coastal wave action. No adverse impacts with regards to flood and tsunami hazards are anticipated with implementation of the proposed action.

6. Flora and Fauna

a. Existing Conditions

AECOS, Inc. carried out a biological survey for the Lower Kula Bypass Waterline Project in November 2012. See **Appendix "B"**. The report notes that the site is open pasture covered mostly by Kikuyu grass (*Pennisetumcladestinum*) and broken by scattered boulder outcrops, numerous cactus plants (*Panini* or *Opuntia ficusindica*), and a shallow gulch. The ground cover consists mostly of patches of dead, dried plants and patches of stressed, but green grass. The vegetation changes very little into the gulch, although there is more diverse and healthier (thicker, greener turf), presumably due to protection from the wind, reduced grazing by ungulates, and the recipient of whatever runoff has occurred recently. The total number of species identified from the site is 53 species, including eight (8) native species and more than half of the native species are ferns. No plant of any particular concern in terms of rarity in the Hawaiian Islands was found during the survey. Refer to **Appendix "B"**.

A total of 42 individual birds and nine (9) species, representing eight (8) separate families were recorded during the survey. One (1) of the birds, the Pacific Golden-Plover, is native to the Hawaiian Islands. It is an indigenous migratory shorebird species. Avian diversity and densities were both very low. Although no endangered Hawaiian Petrel (*Pterodroma sandwichensis*) nor the threatened endemic sub-species of Newell's Shearwater (*Puffinus auricularis newelli*) were observed during the field survey, it is probable both bird species fly over the project area between April and the middle of December each year. Both species nest high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*).

However, no suitable nesting habitat for either of these seabirds species were found on or close to the project area. No Hawaiian hoary bats were detected during the course of this survey. There were no suitable roosting trees for this species along the route of the proposed waterline.

Two (2) terrestrial mammalian species, cow (*Bos taurus*) and dogs (Canis f. familiaris) were detected during the course of the survey. Both these species are alien to the Hawaiian Islands.

No Blackburn's sphinx moth were observed in the project area, nor were any native or non-native host plants found during the field survey.

No Hawaiian goose (*Branta sandvicensis*) were observed in or near the project site during the survey.

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

There are no rare, federally threatened, endangered, nor protected species under either the federal or State of Hawaii endangered species programs of flora or fauna at the project site nor presence of critical habitat at the project site. While a limited amount of grading work will occur at the project site, the area has been heavily disturbed by cattle grazing. As such, the proposed waterline extension project is not anticipated to have significant adverse impacts on biological resources.

The principal potential impact that development poses to protected seabirds is increased threat of downing birds disoriented by lights associated with the project, especially during the nesting season. The two main sources of outdoor lighting could pose a threat to nocturnally flying seabirds: 1) lighting used for nighttime construction, and 2) following build-out, the use of security lighting. However, no nighttime construction or security lighting is proposed for the project, as such, construction of the waterline will not result in impacts to protected seabird species.

The principal potential impact that development poses to the Hawaiian hoary bat occurs during clearing and grubbing when vegetation is removed. The removal of trees within a construction site may temporarily displace individual roosting bats. Potential adverse effects from such disturbance can

be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15 feet) during the pupping season (between June 15 and September 15). As there is no suitable bat roosting habitat within the project site, it is not expected that the project will have any impact to this listed species.

Contractor will be required to implement the following measures related to the nene goose. If a Hawaiian goose is present within the project site during construction, all activity will be temporarily suspended until the bird(s) moves off to a safe distance on its own volition.

7. Wetlands and Streams

a. Existing Conditions

There are no existing wetlands or streams in the immediate vicinity of the project sites.

There is an unnamed gulch in the project area. The waterline crosses this gulch. The gulch is shown on the U.S. Geological Survey topographic map as a non-perennial "blue-line" stream arising in the project area and continuing downslope to about the 2,200 ft. msl elevation. See **Appendix "B-1"**, Preliminary Jurisdictional Determination for Project. The gulch was dry during the AECOS, Inc. survey. The stream was not evident during two (2) AECOS, Inc. field surveys in October and November 2012. AECOS, Inc.'s assessment indicates this feature would not be considered waters of the U.S. and not jurisdictional with respect to the Clean Water Act and the Rivers and Harbors Act for the Department of Army permitting.

b. Potential Impacts and Proposed Mitigation Measures

Given the absence of wetlands and streams in the area, no adverse impacts to these environmental parameters are anticipated.

Coordination has been carried out with the U.S. Army Corps of Engineers for a jurisdictional determination for permitting requirements. The U.S. Army Corps of Engineers has reviewed the project scope and determined that the unnamed drainage feature lacks a hydrologic connection to a water of the

U.S. and, therefore, a Department of Army Permit will not be required. See **Appendix "B-2"**.

8. Archaeological and Historical Resources

a. Existing Conditions

An Archaeological Assessment Survey (AAS) of the project area was carried out by Xamanek Researches LLC in October and November 2012. See **Appendix "C"**. The archaeological investigation consisted of a surface survey over the waterline project corridor and controlled excavation of five (5) 50 centimeters by 50 centimeters (approximately 19.7 inches) shovel test units. The AAS did not identify any new archaeological sites. The shovel tests were all negative of any remnant cultural or historical material.

Although no surface evidence of any agricultural activity was identified, dry land rock faced agricultural terraces were noted approximately 750 meters (approximately 2,460 feet) upslope to the southeast of the project corridor.

b. Potential Impacts and Proposed Mitigation Measures

The AAS was designed and completed to meet the State Historic Preservation Division's (SHPD) requirements in advance of an environmental assessment for the proposed project. No sites were identified during the field investigation and no significant material cultural remnants were discovered from the subsurface testing. However, due to the observation of agricultural terraces upslope of the project area and the potential for remnants of significant material cultural remains to be located in the untested portions of the project area, precautionary archaeological monitoring was recommended in the AAS report. As such, DHHL will prepare and submit an Archaeological Monitoring Plan to SHPD for review and approval prior to any ground alteration. Controlled archaeological monitoring during ground alteration will mitigate any potential impact to cultural or archaeological resources.

9. Cultural Resources

a. Existing Conditions

The project area is located in the Omaopio Ahupuaa, Makawao district. Although the project area is in the modern district of Makawao, it was part of the traditional district of Kula. Refer to **Appendix "C"**. During the pre-contact and early contact periods, Kula was primarily an area for farming. Dryland taro patches grew in elevations up to 3,000 feet. Farmers were reliant on growth of sweet potatoes and when crops failed due to caterpillars, blight, frost or sun, people in Makawao and Kula suffered from famine (Munekiyo & Hiraga, Inc., 2008).

The arrival of whalers in the 1840s stimulated great demand for Irish and sweet potatoes. Potatoes were taken to Lahaina and sold aboard ships. The California gold rush also resulted in great demand from prospectors for potatoes, other vegetables, sugar, molasses and coffee. Farmers were doing so well that many Hawaiians were going into business for themselves, shipping their goods to San Francisco. Maui fields were referred to as "Nu Caliponi" or "New California." However, prices began to drop and the popularity of growing potatoes began to decline (Munekiyo & Hiraga, Inc., 2008).

In the 1840s, many Chinese from Honolulu, Kohala and China moved to the Kula region and acquired land by lease or deed from Caucasian ranchers or Hawaiian homesteaders for farming. The Territorial government leased the land to ranchers who then subleased to the Chinese. In addition to Irish potatoes, they planted corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and cotton. Farmers often bartered their farm produce for payment on leases, in lieu of monetary transactions. Bartering was a common practice during this period. In the Kula area, there were three (3) stores that often bartered for goods on other islands.

During the mid-19th century, the Chinese population further expanded. Kula consisted of Chinese and English schools, Christian churches, a Chinese society, gambling houses, opium dens, general stores, farms and cattle ranches. Keokea was often referred to as "Chinatown" and many would

travel to the area on Sundays and holidays from the outlying areas of Kanaio, Ulupalakua and Waiakoa.

In the 1880s, large sections of crown land in lower Kula were leased for grazing for the booming cattle industry. Around the end of World War I, the Territorial government released a large amount of land to the public for purchase. Homestead lands were available to all American citizens at least 21 years old. As a result of this policy, the Chinese population began to decline. In addition to loss of land to parceling, the Chinese population left the area due to a severe drought that devastated crops and livestock, soil depletion due to years of harvesting and tilling and a lack of educational opportunities (Munekiyo & Hiraga, Inc., 2008).

In order to obtain an in-depth cultural perspective for the proposed project area, interviews with two (2) knowledgeable native Hawaiian informants were conducted during the preparation of the Draft Environmental Assessment. See **Appendix "D"**. Summaries of the interviews are provided below.

Kekoa Enomoto

Kekoa Enomoto was born in San Francisco in 1946. She is the daughter of Curtis and Nenita Kekoa. Her father was full Hawaiian and born on the island of Oahu. Her mother's maiden name was Maldonado and she was born in Manila in the Philippines. Kekoa has three (3) younger brothers. Her father was a career officer in the U. S. Air Force and as such, the family lived in many places when Kekoa was growing up. Her father retired with the rank of Colonel.

Kekoa and her husband, Edmund, purchased a lot on Haleakala Crater Road in 1972. They moved to Maui in 1998 and lived at that location until 2006. The property is located just to the east of the waterline project area. In December 2006, Kekoa and Edmund moved to the Waiohuli Homestead subdivision. Kekoa was a Copy Editor and writer for the Maui News and is now retired.

Kekoa is active in cultural pursuits and many community groups. She is a Kahuna Kakalaleo (chanter) and went through eleven (11) months of training and underwent "uniki" (graduation) from a Central Maui Halau. Kekoa is a member of Ahahui Kaahumanu (Hawaiian Woman's Society) Wailuku Chapter, a paddler in the Hawaiian Canoe Club, member of the Cultural

Advisory Council for the Grand Wailea Resort and a freelance writer for the Office of Hawaiian Affairs (OHA) newspaper. She is also the Secretary for the Hawaiian Home Lands Keokea Farm Lots Association and she started a new DHHL organization, Waiohuli Undivided Interest Lessees Association, to seek funding to build the infrastructure for the Waiohuli Undivided Interest lots.

Kekoa mentioned five (5) aspects of cultural significance in the Upcountry area.

1. The Upcountry *aumakua* (guardian spirit) is the "*A apueo*" (owl). The "*kinolau*" (manifestation) of the "*A apueo*" (owl) is the female warrior.

2. There are many petroglyphs in the gulch to the south of the Maui Kamehameha Schools campus. The school campus is about two (2) miles northwest of the Lower Kula Waterline project area. There is one (1) very amazing petroglyph on a high ledge of the gulch which shows a canoe with a crab-cloth sail. Kekoa noted that this is a very striking and powerful image and it is depicted in Tommy Holmes' book, The Hawaiian Canoe.

3. Kekoa noted that archaeologists told her that the carbon dating of some of the artifacts found during the archaeological investigation of the Keokea Farm Lots were dated to the year A.D. 600. These were the oldest dates on Maui for carbon dated artifacts, they said.

4. It was told by Rubellitte Kawena Johnson, Professor Emeritus of Hawaiian Studies at University of Hawaii, Manoa, that a large Ulua (fish) skeleton was found Upcountry and also many fishhooks. Rubellitte conjectured the early Hawaiians living on the coast would trade fish for Upcountry produce such as sweet potato and fishhooks would be made from the fish bones.

5. There is a Rain Ko`a (shrine) or Heiau above the Kula Hospital. It's an indication that there would be water in the area of the koa or heiau. She mentioned past references to the sandalwood forests in the Upper Kula area. The Upcountry Polipoli forests would also indicate an abundance of rain. Kekoa was told by David Craddick, a past Director of the Department of Water Supply, that DHHL should dig a well above Keokea because he thought there would be a good source water in the area.

Having talked about the significant cultural aspects of the Upcountry area, Kekoa said that she is not aware of any cultural practices in the specific

vicinity of the Lower Kula Waterline project area. She noted that her halau uses areas closer to Crater Road, where she used to live, to gather plants and greenery for their ceremonies. In regards to specific concerns for the project, Kekoa noted that, although not directly related, when Maui County wanted to develop an agricultural waterline in Kula, they used DHHL lands in Keokea and Waiohuli as a justification to get funding for the waterline. Therefore, Kekoa feels that the agricultural waterline should be extended to the DHHL homestead lots so they can farm on the land.

If the project proceeds, Kekoa said, "native Hawaiian protocol should be followed and the project, crew and land should be blessed with ti leaves, salt and water". She said, "it will facilitate the project".

Angus Kealoha Peters

Angus Kealoha Peters was born in the Paia Hospital. His father was George Peters Ferreira of Portuguese descent . His father was born in Honolulu and moved to Maui to work. His mother was Hellen Kuloloio, a native Hawaiian born on Maui. Angus has three (3) brothers and an older sister. The family lived in the Paia plantation "Japanese camp". Angus attended Kihei School and graduated from Lahainaluna High School. Angus worked for 20 years in Pearl Harbor as an electrician with the federal government. He said his work at Pearl Harbor was his biggest accomplishment and he appreciated the opportunity it gave him to have a skilled job and career. He worked on the maintenance of the nuclear submarines in Pearl Harbor. He moved back to Maui after he finished work at Pearl Harbor. He later became an electrical inspector with the County of Maui for many years. Angus is now honored to work at Kamehameha School, where he talks about daily life to the students.

Angus' familiarity of the project area comes from the time he was a young boy working on the farms along Omaopio Road and from his work with the County of Maui. Angus particularly recalled when he was around 14 or 15 years old, he worked on the farm that was leased by George Tam. He would feed the cows and help pick vegetables. He often would not get paid wages for his work, but was given food. He remembers that Omaopio area had lots of farmers and he used to eat sweet potato and corn. He was taught to eat everything that was put on the table and to show respect for others. He remembers the area as being very dry. He also remembers that all the water meters were by the water tank, and not in front of the farm properties. All the farmers along Omaopio Road had to put their own waterlines from the water meter to their lots. He found this odd, because he also noted that there were stand pipes right next to the farm lots. So, he figured there was a waterline in front of the farm lots, yet all the meters were by the tanks. He later figured this was how the County was saving money by having the farmers put in their

own waterline from their water meter. When he was an Electrical Inspector with the County of Maui, one of his jobs was to inspect the electrical system in the Kula Kai Water Tank during construction.

Asked about native Hawaiian cultural practices in the vicinity of the waterline project area, he said he was not aware of any practices around the area. He said recognition of the native Hawaiian culture was not prevalent until the burials were found during the development of the Ritz Carlton Hotel in Kapalua. Native Hawaiian cultural practitioners such as Charlie Maxwell, Dana Naone Hall and his cousin, Leslie Kuloloio, who were knowledgeable of the Hawaiian culture and involved in the preservation of the Ritz Carlton burial site, started to raise awareness of the importance to protect burials and cultural resources. After that, he said, "Things started to pick up culturally". He noted, in the Hawaiian Home Lands' Waiohuli and Keokea subdivisions there are over 35 heiau's. He thinks that they should be preserved and incorporated with the development to make cultural educational programs, "To bring the kids to learn about native Hawaiian ways".

Asked if he had any cultural concerns with the development of the Lower Kula Waterline, Angus said that the contractors should be careful during construction. He thought that the early Hawaiians may have buried their deceased in the mountains. He also believes that there needs to be progress and any cultural issues can be worked out.

In closing he said, "The most important thing, is to show respect and be nice to people."

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

Based on the information gathered during the cultural assessment, the proposed project is not anticipated to have adverse impacts upon native Hawaiian cultural resources within the immediate vicinity. The properties are not currently used for traditional cultural gathering, access, or religious practices. An archaeological assessment did not indicate the presence nor the likelihood of encountering cultural resources. An Archaeological Monitoring Plan will be prepared and submitted to SHPD for review and approval prior to any ground altering activity. Nevertheless, should any cultural remains be encountered during construction and excavation, activity work in the vicinity of the find will be stopped and the SHPD will be contacted to establish appropriate mitigation measures in accordance with Chapter 6E, Hawaii Revised Statutes.

10. Air and Noise Quality

a. Existing Conditions

There are no point sources of airborne emission in the immediate vicinity of the project site. The air in the Kula region is of good quality, with existing airborne pollutants attributable to automobile exhaust from the region's roadways, primarily Kula Highway. Noise generated in the vicinity of the project site may be attributable to natural (e.g. wind) conditions, traffic along local roadways, and agricultural-related activity involving the intermittent operation of equipment, such as tractors and trucks.

b. Potential Impacts and Proposed Mitigation Measures

Airborne particulates, including dust, may be generated during site preparation and construction of the waterline. To minimize dust generation, graded areas will be thoroughly watered. As soon as grading is complete, exposed areas will also be grassed and the area returned to cattle grazing.

Ambient noise conditions will be temporarily affected by construction activities. Material-transport vehicles and power tools are anticipated to be the dominant noise-generating source during construction. As with air emissions, construction noise will be minimized through use of applicable Best Management Practices (BMPs). Construction work will be limited to daylight work hours.

Once operational, the proposed project is not anticipated to adversely impact air or noise quality in the vicinity.

11. Scenic and Open Space Resources

a. Existing Conditions

Scenic resources in the area include Haleakala to the east and the West Maui Mountains and central valley area of Maui to the west. The project site is located above the Kula Kai Subdivision in Kula.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project involves the installation of an underground waterline. Except for a portion of the waterline in an existing unnamed gulch, the waterline will not be visible. However, the exposed portion of the waterline will be below the existing ground surrounding the gulch. The project site is not part of scenic corridors and will not affect views from inland vantage points. The proposed project is not anticipated to generate significant impacts to the visual character of the surrounding area.

12. Traditional Beach and Mountain Access

a. Existing Conditions

It is noted in the Archaeological Assessment Report that archaeological evidence supports the claims of a considerable population in the Kula area of the early Hawaiians. However, the archaeological assessment survey of the project area did not find any evidence of archaeological sites nor any cultural or historical material. Refer to **Appendix "C"**. The cultural impact assessment interviews with two (2) native Hawaiians familiar with Hawaiian culture and the project area also did not indicate the area was used, or is currently used for cultural practices. Refer to **Appendix "D"**.

b. Potential Impacts and Proposed Mitigation Measures

No known traditional beach nor mountain access trails within the immediate vicinity of the project site were identified in the archaeological and cultural assessments. It is, therefore, anticipated the proposed project will not adversely impact traditional beach or mountain trails.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Regional Setting

a. Existing Conditions

The project area is located in the Omaopio, Kula region on the northwestern slope of Haleakala. The Kula area is characterized by a combination of

urban, rural and agricultural uses. The project site is east of the Kula Kai Subdivision and north of the rural lots along Kimo Drive.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is considered compatible with surrounding land uses. The new waterline will be underground. Upon completion of the waterline project, the area will be regrassed and restored for cattle grazing. The regional character of Kula will not be adversely impacted by the installation of the new waterline.

2. Population

a. Existing Conditions

The population of the County of Maui has exhibited relatively strong growth over the past decade. Maui County population has grown from 128,094 in 2000 to 154,834 in 2010, which represents a 21 percent growth over ten (10) years (U.S. Census 2010).

In 2010, the population of the island of Maui was 144,444 with 25,544 residents of the island's population living in the Makawao-Pukalani-Kula area (U.S. Census, 2010). Growth in Maui County is expected to continue as baseline population forecasts for the year 2020 reflect a Makawao-Pukalani-Kula population of 27,640, as well as an island-wide and County-wide population of 162,370 and 174,450, respectively (Maui County Planning Department, June 2006).

b. Potential Impacts and Proposed Mitigation Measures

The bypass waterline project involves the construction of an 18-inch waterline from the existing DWS 2.0 MG water tank to connect with a 12-inch line and existing pumps that pump water to the Upper Kula Water System, as needed. The proposed project is not a direct population generator and will have no foreseeable impacts on the resident population of Maui County.

3. Economy and Labor Force

a. Existing Conditions

The Kula region, with its fertile soil and cool climate conditions, has resulted in successful produce and flower cultivation for export to domestic and international markets. The vast lands of pasture grass has also enabled cattle ranching and alternative ranching activities, such as goat, sheep and llama herding, which contribute to the economy.

As of October 2012, Maui County's non-seasonally adjusted unemployment rate stood at 5.7 percent, a reduction of 2.0 percent from October 2011. Similarly, Maui Island's non-seasonally adjusted unemployment rate for October 2012 stood at 5.5 percent, a reduction of 2.0 percent from October 2011 (DLIR, January, 2013).

b. Potential Impacts and Proposed Mitigation Measures

On a short-term basis, the project will support construction and construction-related employment. Accordingly, the project will have a beneficial impact on the local economy during the period of construction.

From a long-term perspective, the proposed action is intended to provide water system reliability for the Lower Kula area, including the DHHL homesteads.

4. Housing

a. Existing Conditions

In 2010, Maui County's housing supply totaled 70,510 housing units, representing a 20 percent increase from 2000. In 2010, the Kula Census Designated Place (CDP) contained 2,975 housing units of which 2,649 were occupied by residents (United States Census, 2010).

Housing values in Kula-Ulupalakua-Kanaio is higher than the Countywide median. As of September 2012, the median price in the Kula-Ulupalakua-

Kanaio area was approximately $487,500.00, while the Countywide price median was $437,500.00 (Realtors Association of Maui, September 2012).

b. Potential Impacts and Proposed Mitigation Measures

The new waterline project involves the construction of an 18-inch waterline from the existing DWS 2.0 MG water tank to a 12-inch waterline and existing pumps to improve water service in the Lower Kula Water System which serve homes in the area, including DHHL homesteads in Waiohuli and Keokea. The proposed project is not a population generator and is not anticipated to impact housing supply for Maui County. The proposed project will not increase source supply to the Upper or Lower Kula Water Systems and as such, will not expand new housing or subdivision development.

C. PUBLIC SERVICES

1. Police

a. Existing Conditions

The County of Maui's Police Department is headquartered in Wailuku. The Maui Police Department (MPD) consists of several patrol, investigative and administrative divisions. The Wailuku or Central station, which serves the Haiku, Paia, Makawao, Pukalani and Kula regions, is situated approximately 15 miles northwest of the project site. A police substation is located in Pukalani, about 3.3 miles north of the project site. A police community service center is located in the Kulamalu Town Center, approximately 2.4 miles north of the project site.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is limited to a new waterline and will not extend the existing service area limits for police service. The proposed project is not anticipated to have any impact on police service in the area.

2. Fire

a. Existing Conditions

Fire prevention, suppression and protection services are provided by the County Department of Fire and Public Safety. The Kula Station, which serves the region, is located off Kula Highway, approximately 3.1 miles south of the project site. The Makawao and Paia fire stations lend additional firefighting support to the Kula region and are situated approximately 3.2 miles and 14.2 miles away from the project site, respectively.

b. Potential Impacts and Proposed Mitigation Measures

The construction of a new 18-inch waterline from the existing DWS 2.0 MG water tank to an existing 12-inch waterline will improve water service for properties served by the Lower Kula Water system. This project will benefit fire protection coverage of the area, as it will provide continued water pressure in the transmission lines utilized by the Fire Department in the event of a fire hazard.

3. Medical Services

a. Existing Conditions

Maui Memorial Medical Center, the only major medical facility on the island, is approximately 15.1 miles to the northwest of the project site. Licensed for 231 beds, this facility provides acute, emergency, general, and obstetric care services. Several medical and dental care facilities are located in Makawao and Pukalani to serve Upcountry residents.

Kula Hospital and Clinic is situated about 7.6 miles south of the project site. The hospital serves as a critical access hospital that provides long-term care for residents and 24-hour emergency room. An out-patient clinic for the area's residents operates from 8:00 a.m. to 4:30 p.m. on weekdays.

b. Potential Impacts and Proposed Mitigation Measures

The proposed action is not anticipated to affect the service capabilities of medical service operations. The project will not extend the existing service area limits for emergency services. The proposed project will have a positive impact for the Kula Hospital, which is serviced by the Lower Kula Water System by providing more constant water pressure.

4. Solid Waste

a. Existing Conditions

Residential solid waste collection and disposal is provided on a weekly basis by the County's Department of Environmental Management's Solid Waste Division. Solid waste generated in the Upcountry region is transported to the Central Maui Landfill off of Pulehu Road, approximately 8.5 miles northwest of the project site. Other than the Hana Landfill, the Central Maui Landfill is the only disposal site on the island of Maui which accepts County-hauled residential waste, commercially-hauled commercial waste, and self-hauled waste.

Privately owned facilities, such as the Maui Demolition and Construction Landfill and the Pohakulepo Concrete Recycling Facility, accept solid waste and concrete from demolition and construction activities. These facilities are located at Maalaea, northwest of the project site, near Honoapiilani Highway's junction with North Kihei Road and Kuihelani Highway. A green waste recycling facility is present at the Central Maui Landfill.

b. Potential Impacts and Proposed Mitigation Measures

Once completed, the proposed project is not anticipated to require solid waste collection and disposal services. The proposed project will, therefore, not impact the capacity of the Central Maui Landfill.

5. Education

a. Existing Conditions

The State Department of Education (DOE) operates five (5) public schools in the Upcountry region. They are: King Kekaulike High School for grades 9 to 12, Kalama Intermediate School for grades 6 to 8, and Kula Elementary, Makawao Elementary and Pukalani Elementary Schools for grades K to 5. There is also an elementary, middle and high school primarily for persons of native Hawaiian ancestry, operated by Kamehameha Schools, located approximately 2.5 miles north of the project site at Kulamalu. The region is also served by privately operated facilities, such as Haleakala Waldorf School (Grades K to 8) and Seabury Hall (Grades 6 to 12).

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not anticipated to affect educational facilities in the region as it is limited to installation of 1,274 ft. of a new waterline from the DWS 2.0 MG water tank to connect to an existing 12-inch waterline.

6. Recreational Facilities

a. Existing Conditions

Kula Park is located approximately 3.3 miles south of the project site, adjacent to Kula Elementary School. The park consists of the 10.3-acre Kula Ball Field, two (2) soccer fields, playground equipment, two (2) picnic tables, a restroom and two (2) parking areas.

Other neighborhood parks and facilities in close proximity include the Kula Community Center located approximately 4.5 miles south of the project site, across Kula Highway. The Kula Community Center is an approximate 2,800 square foot building on seven (7) acres of land. Recreational facilities on the property include four (4) tennis courts and a gateball court. The gateball court has a field house and a storage shed.

Harold Rice Park is located approximately 5.0 miles south of the project site. The 3.8-acre park contains a paved parking lot with 18 parking stalls, a

restroom facility, picnic tables and a barbecue grill. Access to the Rice Park is located off of Lower Kula Road.

Situated along the higher elevations of Haleakala are Polipoli State Park, and Haleakala National Park offering camping, hiking, and sight-seeing opportunities.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not anticipated to affect recreational facilities or demands for such facilities in the Kula region as it is limited to the installation of a waterline from the existing DWS 2.0 MG water tank to an existing 12-inch waterline located approximately 1,274 feet to the southwest.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

The proposed 18-inch bypass waterline connecting the 2 MG water tank to an existing 12-inch waterline is located 3,000 feet east of the Kula Kai Subdivision and sits between Haleakala Highway and Lower Kula Road. Access to the project site is from an agricultural road connecting with Ka Drive through the Kula Kai Subdivision. Ka Drive connects with Lower Kula Road and Kula Highway. Kula Highway is a predominantly two-way, two-lane State of Hawaii roadway, generally oriented in the north-south direction and serves as the primary access road through Upcountry Maui between Pukalani and Ulupalakua.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is not anticipated to generate significant volumes of incoming or outgoing traffic and will not affect existing traffic conditions in the area. Routine monitoring, maintenance, and repair service activities would involve one (1) trip approximately two (2) times a month and daily inspection when the booster pump is in operation.

The DHHL and the project's contractor will develop an appropriate construction traffic control plan to ensure the smooth and safe traffic operation along adjacent public roadways during the construction of the new waterline.

2. Water

a. Existing Conditions

Water service to the Makawao-Pukalani-Kula Community Plan region is provided by the County Department of Water Supply (DWS). The Kula water system consists of an upper and lower system. The upper system is located at the 4,000 foot elevation, and the lower system is located at the 3,000 foot elevation. The Lower Kula System serves the Kula Kai, Pulehu, Omaopio, lower Olinda, and lower Kula communities, while the Upper Kula System serves the remaining communities. The upper system collects water from Haipuaena, Puohakamoa, and Waiakamoi Streams, while the lower system collects water from the Haipuaena, Puokakamoa, Waiakamoi, and Honomanu Streams.

The DWS provides potable water to the Upcountry residents and users via two (2) raw surface water treatment plant (WTP) facilities. These WTP facilities consist of the Piiholo WTP and Olinda Road WTP, which have the treatment capacities of 6.0 million gallons per day (MGD) and 1.7 MGD, respectively. Major storage reservoirs supporting the Upper Kula System include a 10 million gallon (MG) upper Waiakamoi dam/reservoir, a lower Waiakamoi concrete dam, two (2) 15 MG Waiakamoi concrete tanks, a 3 MG Olinda steel tank and the Kahakapao Reservoirs, consisting of two (2) 50 MG reservoirs in the vicinity of the Waiakamoi Reservoir. The Piiholo WTP and Kula Kai Reservoir supports the Lower Kula Water System. This water source comes from the Honomanu Intake and a 50 MG raw water storage reservoir. From this WTP, the potable water is distributed among numerous water storage tanks for service to Upcountry residents and users.

The Kula Kai Reservoir, located east of the Kula Kai Subdivision, is the water source for the 2 MG tank on the site. This water source is shared by the Upper and Lower Kula systems through an existing 18-inch waterline connected to the water tank. During times of high water demand on the

Upper Kula System, the water, via an existing 18-inch waterline, is shared from this source and pumped to the Upper Kula System.

b. Potential Impacts and Proposed Mitigation Measures

As previously noted, the project involves installing a new 18-inch waterline from the 2 MG Kula Kai Water Tank and connecting it to an existing 12-inch waterline. This new waterline will be dedicated to provide water to the Upper Kula Water System when needed and allow the existing waterline to serve the Lower Kula Water System without disruption. The Lower Kula Water System would no longer need to share the one (1) existing waterline and each region is assured a reliable water source. Enhancing system reliability by adding a new waterline that is dedicated to serving the Upper Kula System and allowing the existing waterline to be dedicated to serve Lower Kula Water System benefits both service areas and as such, no adverse impact is expected from the proposed project. The proposed project does not increase source supply nor water capacity.

3. Wastewater

a. Existing Conditions

There are no public sewer facilities in this part of Maui. The County of Maui does not provide wastewater service to the area. Wastewater in the Kula region is treated, processed and filtered through individually owned and operated cesspools or septic systems.

b. Potential Impacts and Proposed Mitigation Measures

As the project scope involves a waterline installation, the proposed project will not generate any wastewater and will not affect existing wastewater collection and treatment systems in the area.

4. Drainage

a. Existing Conditions

The project area crosses agricultural land that gently slopes to the southwest and northwest. There are no drainage improvements in the project corridor. A small portion of the new waterline crosses a gulch 300 feet south of the Kula Kai water tank. Due to the upland elevation of the project area and southwesterly slopes of this terrain, storm water runoff onsite and the surrounding areas experiences sheet flows that moves in a generally southwesterly direction and directed towards the unnamed gulch and beyond to the southwest.

b. Potential Impacts and Proposed Mitigation Measures

In compliance with Section 20.08.035 of the Maui County Code, during construction, a soil erosion control plan including Best Management Practices will be implemented to minimize or prevent sediments from leaving the project site. Best Management Practices include the following:

- Dust control using water wagons or installing temporary sprinkler systems
- Watering graded areas after construction activity has ceased for the day
- Paving, grassing, or landscaping exposed areas as soon as grading is completed

As the project involves the installation of a new waterline with connection to an existing line, there will be no increase in impervious areas. After completion of the installation of the new 18-inch bypass waterline, the area will be reseeded and restored to its pre-project condition to the extent practicable. Since the project area will be restored to the pre-project condition, no net increase of stormwater runoff from the project is expected.

5. Electrical and Telephone Services

a. Existing Conditions

Electrical and telephone services for the Kula region are provided by Maui Electric Company, Ltd. and Hawaiian Telcom, respectively. Developed properties within the vicinity of the project sites are served by overhead electrical and telephone distribution systems along Omaopio Road. There is an existing overhead electrical line providing electrical service to the water tank site.

b. Potential Impacts and Proposed Mitigation Measures

As the scope of the proposed project is limited to constructing an 18-inch waterline and connecting to an existing 12-inch waterline, the project is not anticipated to affect electrical and telephone services in the Kula region.

E. CUMULATIVE AND SECONDARY IMPACTS

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

During high water demand in the Kula region, the proposed project provides reliability to the existing water system to meet community needs. The new additional waterline will supplement an existing waterline that currently services the Kula Kai Water Tank to meet the user demands on the water system. The proposed project was identified by DWS to mitigate the extension of water services to the DHHL Waiohuli and Keokea subdivisions. There are no cumulative impacts associated with the proposed project.

Secondary impacts are those which have the potential to occur later in time or farther in distance, but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of the project. Secondary impacts from highway projects, for example, can occur because they can induce development by removing one of the impediments to growth-transportation access.

Aside from the direct development impacts discussed in the previous sections of this chapter, secondary impacts are not anticipated as the project serves to supplement an existing

waterline connected to an existing 2.0 MG water tank to provide reliable service to the region.

The project is not anticipated to have a significant adverse impact on the physical environment. Consequently, the proposed action is not anticipated to result in significant adverse secondary impacts.

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

This section discusses the relationship of the proposed Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements project to applicable State and County land use plans, policies, and controls.

A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205, Hawaii Revised Statues, all lands in the State have been placed into one (1) of four (4) major land use districts by the State Land Use Commission. These land use districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The project site is classified "Agricultural". See **Figure 8**. The proposed use of the property for the proposed waterline improvements is consistent with "Agricultural" district provisions.

B. GENERAL PLAN OF MAUI COUNTY

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

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

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

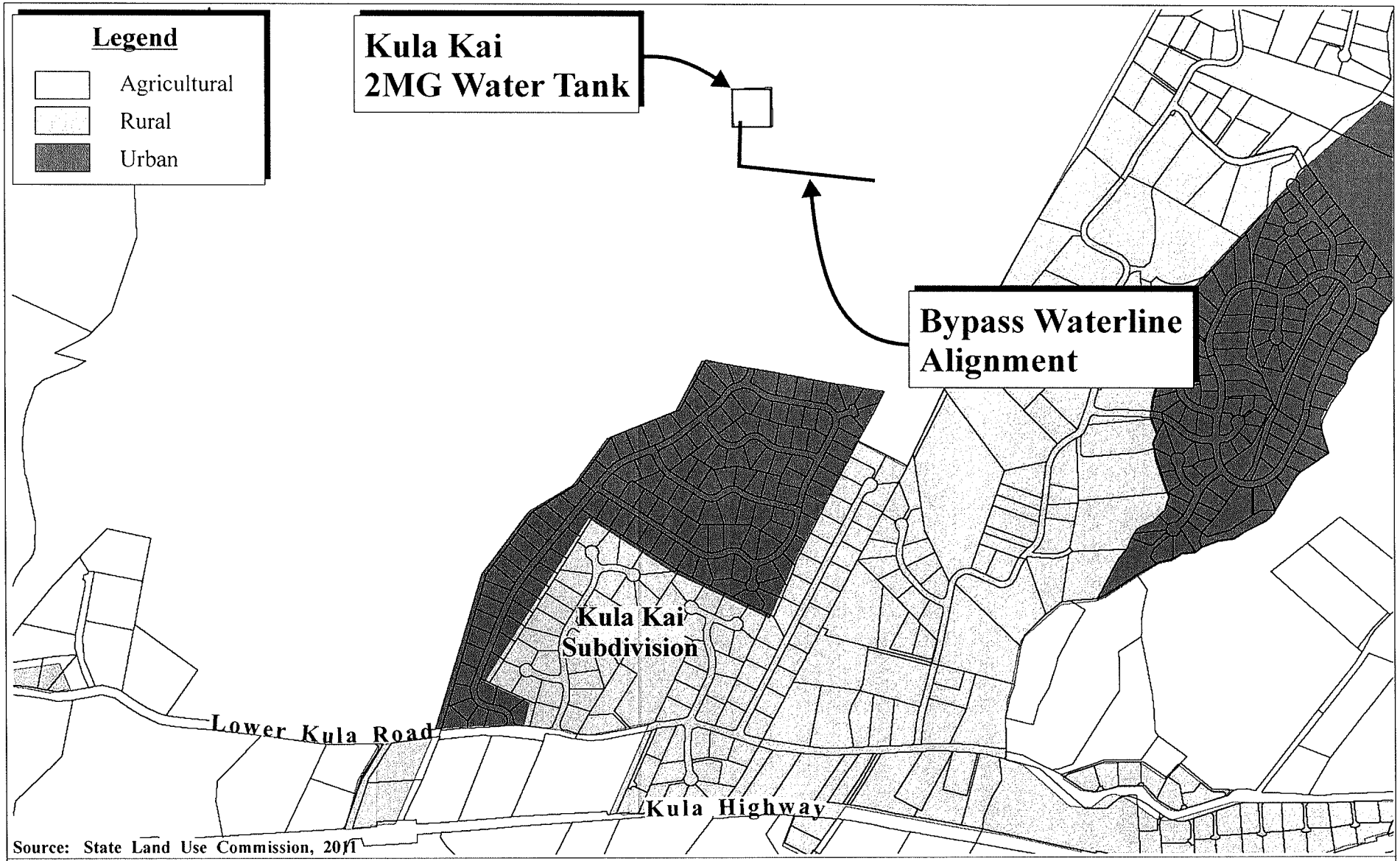


Figure 8

Lower Kula Bypass Waterline

State Land Use District Map

0 450 Feet
225 900

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areas for future urban and rural growth as part of a Directed Growth Strategy, was adopted as Ordinance No. 4004 on December 28, 2012.

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

1. Countywide Policy Plan

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

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

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

> *1. Excellence in the stewardship of the natural environment and cultural resources;*
>
> *2. Compassion for and understanding of others;*
>
> *3. Respect for diversity;*
>
> *4. Engagement and empowerment of Maui County residents;*
>
> *5. Honor for all cultural traditions and histories;*

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

7. *Commitment to self-sufficiency;*

8. *Wisdom and balance in decision making;*

9. *Thoughtful, island appropriate innovation; and*

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

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

1. *Natural environment*

2. *Local cultures and traditions*

3. *Education*

4. *Social and healthcare services*

5. *Housing opportunities for residents*

6. *Local economy*

7. *Parks and public facilities*

8. *Transportation options*

9. *Physical infrastructure*

10. *Sustainable land use and growth management*

11. *Good governance*

With respect to the DHHL Lower Kula Bypass Waterline Improvements, the following goals, objectives, policies and implementing actions are illustrative of the project's compliance with the Countywide Policy Plan.

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:

- *Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.*

Policies:

- *Develop and fund improved water-delivery systems.*
- *Ensure a reliable and affordable supply of water for productive agricultural uses.*
- *Seek reliable long-term sources of water to serve developments that achieve consistency with the appropriate Community Plans.*

Objective:

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

Policy:

- *Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.*

Objective:

- *Improve the planning and management of infrastructure systems.*

Policies:

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

- Ensure that infrastructure is built concurrent with or prior to development.

In summary, the proposed project is consistent with the themes and principles of the Countywide Policy Plan.

2. Maui Island Plan

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

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

1. *An island-wide land use strategy, including a managed and directed growth plan*

2. *A water element assessing supply, demand and quality parameters*

3. *A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration*

4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*

5. *Milestone indicators designed to measure implementation progress of the MIP*

It is noted the Ordinance No. 4004 does not address the component relating to the implementation program. Chapter 2.80B of the Maui County Code, relating to the General Plan, was amended via Ordinance No. 3979, October 5, 2012, to provide that the implementation program component be adopted no later than one (1) year following the effective date of Ordinance No. 4004. As such, the implementation program component of the MIP will require adoption prior to December 28, 2013.

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

1. *Population*

2. *Heritage Resources*

3. *Natural Hazards*

4. *Economic Development*

5. *Housing*

6. *Infrastructure and Public Facilities*

7. *Land Use*

The proposed project is supported by the following goal, objectives, policies, and actions of the MIP.

Goal:

Maui will have an environmentally sustainable, reliable, safe, and efficient water system.

Objective:

Increase the efficiency and capacity of the water systems in striving to meet the needs and balance the island's water needs.

Policies:

- *Ensure the efficiency of all water system elements including well and stream intakes, water catchment, transmission lines, reservoirs, and all other system infrastructure.*

- *Work with appropriate State and County agencies to achieve a balance in resolving the needs of water users in keeping with the water allocation priorities of the MIP.*

Objective:

Improve water quality and monitoring of public and private water systems.

Policy:

Protect and maintain water delivery systems.

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

The proposed Lower Kula Bypass Waterline Improvements Project will provide reliable water services to the existing Lower Kula Water System users. In this regard, it is consistent with and not contrary to the directed growth strategy defined via growth maps adopted in the MIP.

C. MAKAWAO-PUKALANI-KULA COMMUNITY PLAN

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

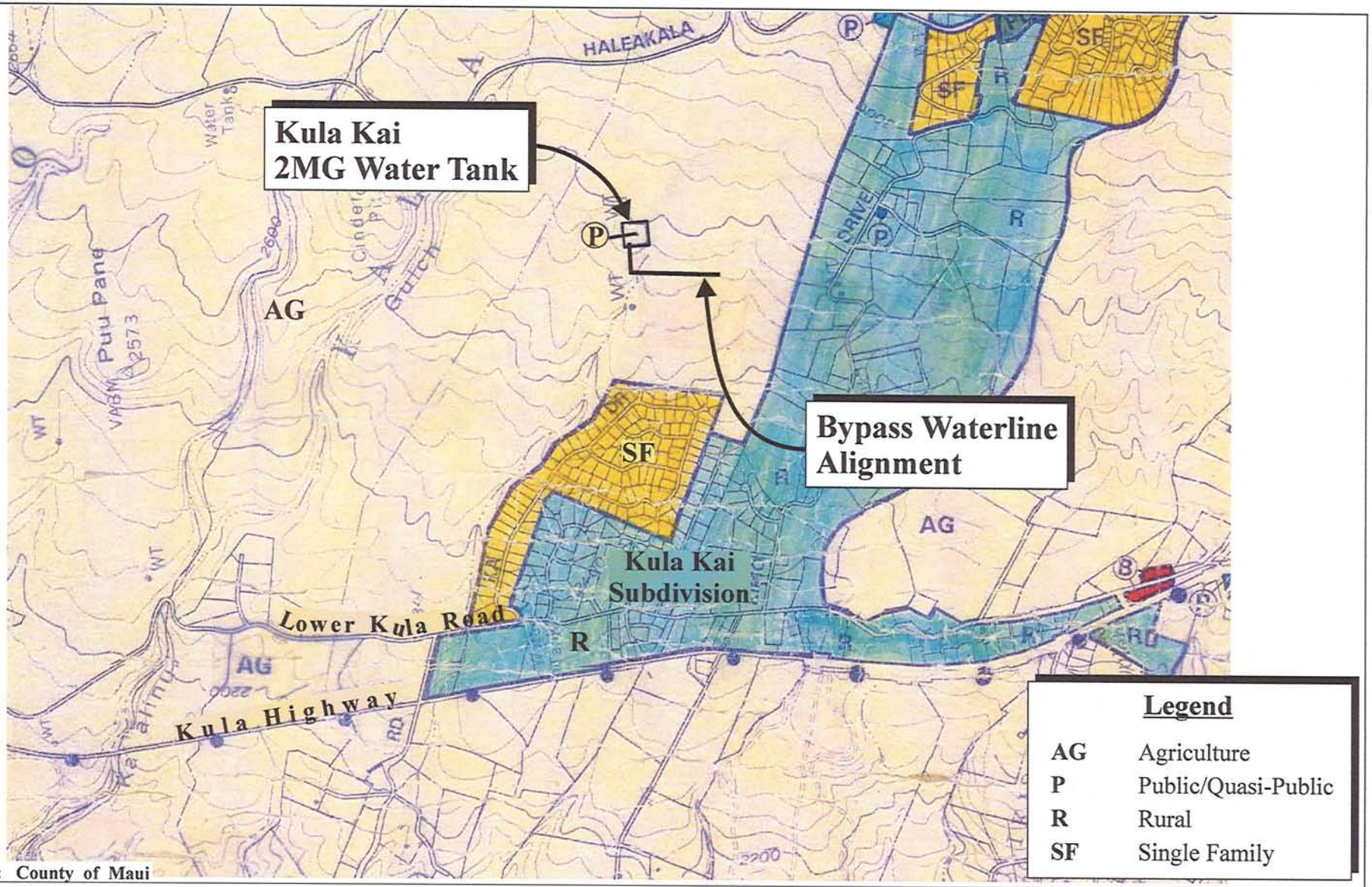
Land use guidelines are set forth by the Makawao-Pukalani-Kula Community Plan Land Use Map. As shown in **Figure 9**, the Kula Kai Water Tank site is designated "P, Public/Quasi-Public" and the waterline traverses lands that are designated "AG, Agriculture". The proposed project is consistent with the underlying land use designations.

The proposed project is consistent with the following goals, policies, and objectives of the Community Plan:

ECONOMIC ACTIVITY

Goal

A stable and diverse economic environment which supports a level of community prosperity in order to provide social services and environmental amenities and which respects the region's rural and agricultural lifestyle, open space and natural



Source: County of Maui

Figure 9

Lower Kula Bypass Waterline

Makawao-Pukalani-Kula Community Plan Map

NOT TO SCALE

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Prepared for: State of Hawaii, Department of Hawaiian Home Lands

RTTanaka/DHHL LKulaWL/CommunityPlan

resources.

Objective and Policy

- *Support programs and plans to develop adequate water systems for agricultural use.*

LAND USE

Goal

The maintenance and enhancement of Upcountry's unique and diverse rural land use character with sensitivity to existing land use patterns, natural resource values, and economic and social needs of the region's residents.

Objective and Policy

- *Establish water resource availability as a major criteria in establishing land uses.*

DEPARTMENT OF HAWAIIAN HOME LANDS

Goal

The immediate implementation of programs and settlement of Native Hawaiians on lands of the Department of Hawaiian Home Lands, that diversifies and enriches the Upcountry community.

Objectives and Policies

- *Encourage and support planning and implementation of Department of Hawaiian Home Lands projects that benefit native Hawaiians, that include a variety of land uses in order to form a complete community, and that are in harmony with the goals and objectives of the Makawao-Pukalani-Kula Community Plan.*

- *Recognize and support the allocation of water resources for Department of Hawaiian Home Lands projects, consistent with applicable State and Federal laws.*

- *Encourage cooperative planning programs between the State, the County, the DHHL and the native Hawaiian community which will foster a desired lifestyle and perpetuate the culture.*

- *Coordinate and integrate the development of Department of Hawaiian Home Lands' projects with surrounding Upcountry communities.*

- *Encourage the development of cooperative planning programs between the State and County and the Department of Hawaiian Home Lands to ensure that infrastructure and public service needs adequately address the needs of the entire Upcountry community. For example, consideration shall be given to the identification and development of new school sites, facilities, and programs which will provide adequate choices for education for Upcountry residents.*

PHYSICAL INFRASTRUCTURE

Goal

The timely and environmentally sensitive development and maintenance of infrastructure systems which protect and enhance the safety and health of Upcountry's residents and visitors, including the provision of domestic water, utility and waste disposal services, and effective transportation systems which meet the needs of residents and visitors while maintaining the region's rural character.

Water

Objectives and Policies

- *Encourage a flexible and comprehensive water management approach that recognizes the various collection and delivery improvements as one cohesive system.*

- *The Department of Water Supply shall expand water supply and distribution systems, including catchment systems, in accordance with the directions set forth in the Makawao-Pukalani-Kula Community Plan.*

- *Recognize and support the immediate allocation of water resources for Department of Hawaiian Home Lands projects and agriculture.*

- *Encourage cooperative efforts among Federal, State, and County agencies, and developers to ensure that water storage and delivery needs of the region are met in a timely and orderly manner.*

Implementing Actions

- *Increase the deliverable capacity of the lower Kula line to 7.5 mgd and extend the line to Keokea to serve Department of Hawaiian Home Lands projects.*

- *Systematically improve and upgrade the existing water delivery system.*

D. COUNTY ZONING

The lands utilized for the proposed Lower Kula Bypass Waterline installation are zoned "Interim" and "Agricultural" by the County of Maui. The proposed waterline installation is permitted within the "Interim" and "Agricultural" zoning districts.

E. COASTAL ZONE MANAGEMENT OBJECTIVES AND POLICIES

The project alignment is located in the Kula region and is not located within the County of Maui's Special Management Area (SMA). However, the Coastal Zone Management Area includes the entire island of Maui and all the islands of Hawaii, therefore, this section analyzes the proposed project relative to coastal zone management considerations, as set forth in Chapter 205A, HRS.

1. Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

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

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

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

ii. Requiring replacement of coastal resources having significant recreational value, including but not limited to, surfing sites,

fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

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

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

v. *Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*

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

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

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

Response: The project area does not abut the shoreline, but is located inland on the slopes of Haleakala and away from shoreline resources. The proposed actions will, therefore, not affect coastal recreational opportunities.

2. Historic Resources

Objective:

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

Policies:

a. Identify and analyze significant archeological resources;

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

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

Response: As stated previously, an Archaeological Assessment Survey (AAS) of the proposed waterline project corridor was carried out. Refer to **Appendix "C"**. The AAS found no historic or cultural features. However, due to the potential for remnants of significant material cultural remains to be located in the untested subsurface portions of the project corridor, precautionary archaeological monitoring will be carried out during ground altering activities. The AAS was submitted to SHPD for review and approval. An Archaeological Monitoring Plan will be submitted to SHPD for review and approval prior to any ground altering activity. Should there be an inadvertent discovery during ground altering activities, work will stop in the immediate area of the find and the SHPD will be contacted to establish the appropriate level of mitigation measures.

3. **Scenic and Open Space Resources**

Objective:

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

Policies:

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

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

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

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

inland areas.

Response: The proposed improvements will not have a significant adverse impact upon scenic or open space resources. The proposed actions involve the construction of a mainly underground waterline which would not impact any scenic or open space resources.

4. **Coastal Ecosystems**

Objective:

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

Policies:

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

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

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

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

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

Response: The proposed project is not anticipated to result in any adverse impacts to coastal ecosystems as the project area is located over 10 miles away from the ocean. Applicable Best Management Practices (BMPs) and erosion-control measures will be implemented to mitigate runoff during construction-related activities.

5. Economic Uses

Objective:

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

Policies:

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

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

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

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

   ii. *Adverse environmental effects are minimized; and*

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

Response: The proposed improvements are in keeping with the agricultural and residential uses in the area. Further, the project is supportive of the objective and policies for economic uses in terms of supporting the existing agricultural character of the Upcountry area.

6. Coastal Hazards

Objective:

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

Policies:

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

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

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

d. *Prevent coastal flooding from inland projects.*

Response: The project site is located in Flood Zone X, an area outside of the 1 percent annual chance floodplain. Appropriate BMPs will be implemented during construction to ensure downstream and adjacent properties will not be adversely impacted. Upon completion of the waterline installation, the project area will be restored to its previous condition to the extent practicable.

7. **Managing Development**

Objective:

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

Policies:

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

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

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

Response: In compliance with the requirements of Chapter 343, Hawaii Revised Statutes (HRS), this Environmental Assessment (EA) has been prepared to facilitate

public understanding and involvement in project development. All aspects of the development will be conducted in accordance with applicable Federal, State and County standards. Compliance with applicable regulatory requirements advances the objective and policies for managing development.

8. Public Protection

Objective:

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

Policies:

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

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

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

Response: Opportunities for public awareness and participation for the project are facilitated through the notification, review and comment processes of the EA requirements of Chapter 343, HRS. The proposed project is not contrary to the objectives of public awareness, education, and participation.

9. Beach Protection

Objective:

Protect beaches for public use and recreation.

Policies:

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

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

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

Response: The proposed project is not located in proximity to shoreline areas, nor is it anticipated to impact shoreline activities or beach processes.

10. Marine Resources

Objective:

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

Policies:

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

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

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

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

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

Response: The proposed project is not anticipated to impact marine or coastal resources as the project site is located over 10 miles away from the ocean.

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

> *No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:*
>
> *(1) Directly illuminates the shoreline and ocean waters; or*
>
> *(2) Is directed to travel across property boundaries toward the shoreline and ocean waters.*
>
> *(b) Subsection (a) shall not apply to special management area use permits for structures with:*
>
> *(2) Artificial lighting provided by a government agency or its authorized users for government operations, security, public safety, or navigational needs; provided that a government agency or its authorized users shall make reasonable efforts to properly position or shield lights to minimize adverse impacts.*

Response: The proposed project does not include any plans for lighting as it is limited to the installation of an underground waterline. Construction is anticipated to occur during the daylight hours and as such, no lighting during construction is anticipated.

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed project involves the installation of approximately 1,274 feet of underground waterline from the 2.0 MG Kula Kai Water Tank to connect to an existing 12-inch waterline that feeds an existing pump station located to the southwest of said tank. Construction will take place on lands currently used for cattle grazing operations. A portion of the waterline will be above ground and cross an unnamed gulch. The portion of the waterline crossing the gulch will be supported by concrete pillars. As a majority of the proposed project is planned for underground installation, no impacts to scenic corridors or views are anticipated.

Assessment of construction-related impacts, noise and air quality impacts, and potential impact on physical and socio-economic environment, were carried out as part of the EA. The proposed development will have a limited, unavoidable construction-related impact on the environment, as described in Chapter II.

In the short term, construction activities associated with the Lower Kula Bypass Waterline project will have a temporary impact on air quality from dust generation and discharge of exhaust from construction equipment during ground altering activities and site grading. Appropriate BMPs will be incorporated to mitigate adverse impacts, including watering of exposed surfaces and regular maintenance of construction equipment to minimize construction-related impacts.

Installation of the waterline will also generate short-term noise impacts which will also be unavoidable. The use of properly maintained construction equipment will mitigate noise impacts caused by equipment. Compliance with State Department of Health construction noise limits is another measure to mitigate noise impacts caused by equipment.

V. ALTERNATIVES TO THE PROPOSED ACTION

V. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The proposed project, with the installation of approximately 1,274 feet of 18-inch underground waterline, represents the preferred alternative for the project. DHHL was required by the DWS to install a new waterline to dedicate source supply from the Kulai Kai Water Tank to the Kula Kai Booster Pump Station in order to provide water service to the Upper Kula Water System at times of high demand. DWS determined a new 18-inch waterline between the Kula Kai Tank and the Kula Kai Booster Pump Station would solve potential cavitation (i.e., reduced pressure in the waterline causing vapor bubbles in the pumping system which may eventually harm the pumps) that may occur within the present waterline infrastructure. See **Appendix "E"**. The proposed action will provide reliable water service to those customers on the Lower and Upper Kula Water Systems. Given the requirement by the DWS to DHHL to install the waterline, the proposed project is the preferred alternative.

B. NO ACTION ALTERNATIVE

The "no action" alternative will not meet the DWS requirement for the provision of water service to the DHHL beneficiaries in Waiohuli and Keokea. Potential damage to the water pumping system could occur from cavitation during periods when water is pumped from the Kula Kai Tank to the Upper Kula Water System. As such, the no action alternative was dismissed as an alternative for the project due to the potential damage to the pumping system caused by cavitation.

C. DEFERRED ACTION ALTERNATIVE

Similar to the "no action" alternative, the deferred action alternative would delay the installation of the proposed bypass waterline and as a result, potential damage to the water pumping system could occur from cavitation when water is pumped to the Upper Kula Water System. Further, the delay of construction may increase construction costs for DHHL. As such, this alternative was not pursued further.

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Development of the proposed project will involve a commitment of energy, labor, fiscal and material resources. The use of these resources, when weighed against the expected benefit to be derived from the project, is not considered an adverse commitment.

VII. SIGNIFICANCE CRITERIA ASSESSMENT

VII. SIGNIFICANCE CRITERIA ASSESSMENT

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

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

   The proposed action will result in short-term construction related air quality and noise impacts. However, these effects will be limited in scope due to the short-term duration of construction. There are no known rare, threatened, or endangered species of flora, fauna, avifauna, or important habitats located within the project site. As such, the proposed project is not anticipated to adversely impact threatened or endangered species or their habitats. Refer to **Appendix "B"**.

   An Archaeological Assessment Survey (AAS) of the project site has been completed to identify whether there are any significant cultural or archaeological resources potentially impacted by the proposed action. No archaeological or cultural resources were identified in the AAS. However, due to the potential of cultural or historic resources in the untested areas of the project corridor, archaeological monitoring will be carried out during ground alteration. Should archaeological features, cultural artifacts, or human burials be located during construction activities, work in the immediate area of the find shall be promptly halted and the find protected from further disturbance. The State Historic Preservation Division (SHPD) will be immediately contacted to determine the significance of the find and establish appropriate mitigative measures. The cultural impact assessment did not reveal any current cultural practices or uses in and around the project site.

   Based on the foregoing, the proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources.

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

   The proposed action and the commitment of land resources will not curtail the range of beneficial uses of the environment. The continued use of the property for water storage and

conveyance purposes and cattle grazing upon completion of the project are compatible with the current designations for the subject property, which are identified as "Agricultural" by the State Land Use Commission, "Agriculture and Public/Quasi-Public" by the Makawao-Pukalani-Kula Community Plan and "AG, Agricultural" district and "Interim" by County of Maui zoning.

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

The State's Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes (HRS). The proposed action is consistent with the policies and guidelines of Chapter 344, HRS.

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

The proposed action will have a beneficial effect on the local economy during construction. In the long term, the proposed project will provide enhanced water system reliability for existing residents served by the Lower Kula and Upper Kula Water Systems.

5. **Substantially affects public health.**

No adverse impact to public health or welfare is anticipated as a result of the proposed action. The proposed project will provide enhanced water system reliability for existing residents served by the Lower Kula Water System. Therefore, implementation of the proposed action will be beneficial to the overall health of residents living in the Kula area.

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

The proposed action is limited in scope to the installation of a new 1,274 lineal foot, 18-inch bypass waterline and is intended to provide enhanced water system reliability for existing residents served by the Lower Kula and Upper Kula Water Systems. Significant adverse impacts to population are not anticipated as a result of the project.

From a land use standpoint, the proposed project is in keeping with the objectives, policies, and implementing actions of the Makawao-Pukalani-Kula Community Plan. The project does not anticipate any adverse impacts to public facilities as a result of implementation.

Adverse impacts to water and wastewater capacities and facilities are not anticipated as a result of project implementation.

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

During construction of the project, appropriate Best Management Practices (BMPs) will be utilized to ensure that potential adverse environmental effects are mitigated. No substantial degradation of environmental quality is anticipated as a result of project implementation.

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

The proposed action does not represent a commitment to larger actions. The proposed improvements do not increase source supply nor water capacity. In addition, the proposed action is not expected to result in cumulative impacts that would adversely affect the environment.

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

The project site is located on lands utilized for ranching activities by Haleakala Ranch. As mentioned previously, there are no known or identified habitats of rare, threatened, or endangered species of flora, fauna or avifauna, or their habitats in the vicinity of the project site. Refer to **Appendix "B"**.

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

Localized air quality impacts from construction equipment and vehicles may occur during construction of the proposed action. As such, potential air quality impacts during construction will be mitigated by complying with the provisions of the State Department of Health Administrative Rules, Title 11, Chapter 60, Fugitive Dust. Measures will be taken to minimize air quality impacts, such as water spraying of loose or exposed soil, erecting dust screens, and re-vegetating exposed areas as soon as practical.

Temporary noise impacts may also be generated from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper equipment and vehicle maintenance, will be used during construction activities. Construction noise impact will be mitigated through compliance with the provisions of the State of Hawaii, Department of Health Administrative Rules Title 11, Chapter 46, "Community Noise Control". These rules require a noise permit if the noise levels from construction activities are expected to exceed

the allowable levels set forth in Chapter 46 rules.

With proposed mitigation measures, the project is not anticipated to have adverse significant impacts on air quality or noise levels.

Water quality will also not be affected by the proposed action in either the short term or long term.

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

The project is not located within and would not affect environmentally sensitive areas. The Flood Insurance Rate Map (FIRM) for this region indicates that the project site is located in Zone X (unshaded), an area of minimal flooding. In addition, the project site is located beyond the reaches of designated tsunami evacuation areas. The project site is not a shoreline property, nor is it situated near streams or wetland areas. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site.

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

The project site is not identified as a scenic vista or viewplane in County or State plans. The proposed waterline will be buried approximately three (3) feet below grade. It is not anticipated, therefore, that the proposed action will affect scenic corridors and coastal scenic and open space resources.

13. **Requires substantial energy consumption.**

The proposed project will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the proposed action consisting of installation of a new 1,274 lineal foot, 18-inch bypass waterline will not create substantial new demand for energy resources.

In summary, the proposed action will provide enhanced water system reliability to existing residents served by the Lower Kula and Upper Kula Water Systems. The proposed action is not anticipated to have significant adverse impacts on the physical environment. In this context, a Finding of No Significant Impact (FONSI) determination is anticipated to be issued for the proposed action.

VIII. LIST OF PERMITS AND APPROVALS

VIII. LIST OF PERMITS AND APPROVALS

The following permits and approvals will be required prior to the implementation of the project:

State of Hawaii

1. Noise Permit, as applicable

County of Maui

1. Grading Permit

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

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

A request for early consultation for the subject project was sent to the agencies and organizations listed below.

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

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

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

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

5. Dean H. Seki, Comptroller
Department of Accounting and General Services
1151 Punchbowl Street, #426
Honolulu, Hawaii 96813

6. Russell Kokubun, Chair
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814-2512

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

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

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

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

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

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

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

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

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

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

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

18. Jesse Souki, Director
State of Hawaii
Office of Planning
P.O. Box 2359
Honolulu, Hawaii 96804

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

20. Kyle T. Yamashita
House of Representatives
Hawaii State Capitol, Room 402
415 S. Beretania Street
Honolulu, Hawaii 96813

21. Teena Rasmussen, Coordinator
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, Hawaii 96793

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

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

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

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

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

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

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

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

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

31. Councilmember Gladys Baisa
County of Maui
200 South High Street
Wailuku, Hawaii 96793

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

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

34. Scott Meidell
Haleakala Ranch
529 Kealaloa Avenue
Makawao, Hawaii 96768

35. Waiohuli Undivided Interest Lessees Association
Emma Abihai
President Pro Tem
77 Holomakani Drive
Kula, Hawaii 96790

36. Ms. Olinda Aiwohi, President
Paukukalo Hawaiian Homestead Community Association, Inc.
781 Kawananakoa Street
Wailuku, Hawaii 96793

37. Mr. Aimoku Pali, President
Ka `Ohana O Kahikinui, Inc.
P.O. Box 1132
Kula, Hawaii 96790

38. Ms. Robin Newhouse, President
Keokea Hawaiian Homes Farmers Association
695 Keanuhea Street
Kula, Hawaii 96790

39. Alapaki Heanu
Waiehu Kou Community Homestead Association
688 Akakui Street
Wailuku, Hawaii 96793

40. Ms. Lisa Kahae, President
Waiehu Kou Residence Lots, Phase 2 Association
5 Nakea Way
Wailuku, Hawaii 96793

41. Mr. Oliveira, President
Waiehu Kou Phase 3 Association, Inc.
49 Kaulana Na Pua Circle
Wailuku, Hawaii 96793

42. Danny Kanahele
Waiehu Kou Phase 4 Association
104 Limu`ele`ele Street
Wailuku, Hawaii 96793

43. Elvin Kamoku, Jr.
Waiohuli Hawaiian Homesteaders, Inc.
242 Hilipali Loop
Kula, Hawaii 96790

44. Mr. Rodney Pa`ahana, President
Villages of Leiali`i Association
124 Aipuni Street
Lahaina, Hawaii 96761

NOV 26 2012

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

NOV 21 2012

In Reply Refer To:
2013-TA-0035

Mr. Mich Hirano
AICP, Senior Vice President
Munekio & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Subject: Pre-Draft Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Maui

Dear Mr. Hirano:

The U.S. Fish and Wildlife Service (Service) received your letter on October 23, 2012, requesting our comments on the proposed design and installation of the Lower Kula Water System improvements, which are required to provide adequate water service to the Department of Hawaiian Home Lands homestead communities located at Keokea and Waiohuli, Maui. The proposed action involves installing an 18-inch ductile iron bypass waterline from the 2-million gallon water tank located at the Kula Kai Reservoir site at TMK: (2) 2-3-04:032, upslope from Kula Highway in the vicinity of Omaopio Road, and connecting to an existing 12-inch waterline approximately 1,200 feet to the southwest. The new 18-inch water bypass waterline will provide a dedicated source of water to the pumps that feed the Upper Kula Water System, thereby eliminating the need to share water with the existing waterline. The Kula Kai Reservoir is owned by the County of Maui. The waterline will be funded and constructed by Department of Hawaiian Home Lands and will be turned over to the Department of Water Supply upon completion to supplement the Lower Kula Water System. The total length of the waterline will be approximately 1,200 feet and crosses an unnamed gulch. The section of waterline crossing the gulch will be above ground and supported by concrete pillars.

Species Affected
Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program, three species protected by the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), may occur within the proposed action area and could be impacted by the proposed action: the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), Blackburn's sphinx moth (*Manduca*

blackburni), and the Hawaiian goose (*Branta sandvicensis*). We offer the following recommendations to minimize and avoid impacts to listed species:

Hawaiian hoary bat
The Hawaiian hoary bat is known to occur throughout the island of Maui. This bat roosts in both exotic and native woody vegetation and, while foraging, leaves young unattended in "nursery" trees and shrubs. If trees or shrubs suitable for bat roosting are cleared during the hoary bat breeding season (June 1 to September 15), there is a risk that young bats could inadvertently be harmed or killed. As a result, the Service recommends that woody plants greater than 15 feet tall should not be removed or trimmed during the Hawaiian hoary bat breeding season.

Blackburn's sphinx moth
The endangered Blackburn's sphinx moth (*Manduca blackburni*) may feed, breed, or shelter in the proposed project area. The adult moth feeds on nectar from native plants including beach morning glory (*Ipomoea pescaprae*), iliee (*Plumbago zeylanica*), maiapilo (*Capparis sandwichiana*). Moth larvae feed upon non-native tree tobacco (*Nicotiana glauca*), which occupies disturbed areas such as open fields and roadway margins, and the native aiea (*Nothocestrum breviflorum*), which is found in dry to moist forests at elevations ranging from 1,500 to 5,000 feet. Blackburn's sphinx moth pupae may occupy the soil in the vicinity of the larval host plants for as long as one year.

We recommend that a qualified biologist survey the project footprint and surrounding area for the presence of the moth's host plants. The locations, densities, size, and condition of any host plants at the site should be documented. We recommend that surveys be conducted approximately four to eight weeks following significant rainfall and during the wettest portion of the year (usually November-April). The biologist should document any observed presence of Blackburn's sphinx moth larvae to include any signs of larval feeding damage on plant leaves. If the Blackburn's sphinx moth host plants are found to be present within or adjacent to the project area, we recommend you contact our office so we may further assist you in developing measures to survey for adult moths.

Hawaiian goose
Due to its range and foraging behavior, the endangered Hawaiian goose (*Branta sandvicensis*) may be present in the vicinity of the proposed action at any time of year. If a Hawaiian goose appears within 100 feet of ongoing work, all activity should be temporarily suspended until the bird moves off to a safe distance of its own volition. Moreover, if one or more Hawaiian geese are observed persistently loafing or foraging within the area of the proposed action during the Hawaiian goose breeding season (October through April), a biologist familiar with Hawaiian goose nesting behavior should survey the area around proposed construction sites prior to the initiation of any work, or after any subsequent delay of work lasting three or more days (during which time birds may attempt to nest). If a nest is discovered, all work should cease immediately and the Service should be contacted for further guidance.

It is unclear if there is a Federal nexus associated with this project. If funding or permitting of the construction or operation of the proposed pipeline and water treatment facilities originates

from a Federal agency, then that agency must consult with the Service per section 7(a)(2) of the ESA if the implementation of the proposed project may affect a listed species. If no Federal agency is involved with the project and implementation of the project could result in take of a listed animal species, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. In addition to a Federal incidental take permit, implementation of the plan may also require obtaining a State incidental take license.

The Service will be happy to provide further guidance regarding these processes upon request. We appreciate your efforts to conserve listed species. If you have any questions concerning the recommendations provided in this letter please contact Jiny Kim, Fish and Wildlife Biologist, Consultation and Habitat Conservation Planning Program (phone: 808-792-9400, fax: 808-792-9581).

Sincerely,

Loyal Mehrhoff
Field Supervisor

Enclosure

cc: Hawaii Department of Land and Natural Resources

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

Loyal Mehrhoff, Field Supervisor
United States Department of the Interior
Fish and Wildlife Service
Pacific Island and Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Maui (2013-TA-0035)

Dear Mr. Mehrhoff:

Thank you for your letter dated November 21, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the subject project. On behalf of the Department of Hawaiian Home Lands (DHHL), we provide the following responses to the Pacific Islands Fish and Wildlife Office's (F&W) comments. The following responses are provided in the order of your comments.

1. *ENDANGERED SPECIES ACT (16 U.S.C. 1531, et. seq.)*

A Biological Resources Survey Report has been prepared by AECOS, Inc. for this project to assess flora and fauna and to address species protected by the Endangered Special Act which may occur in the Project area, including those species specified in your letter (e.g. Hawaiian hoary bat, Blackburn's sphinx moth, and the Hawaiian goose).

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

A total of 42 individual birds and nine (9) species, representing eight (8) separate families were recorded during the survey. One of the birds, Pacific Golden-Plover, is native to the Hawaiian Islands. It is an indigenous migratory shorebird species. Avian diversity and densities were both very low. Although no endangered Hawaiian Petrel (*Pterodroma sandwichensis*) nor the threatened endemic sub-species of Newell's Shearwater (*Puffinus auricularis newelli*) were observed during the field survey, it is probable both bird species fly over the project area between April and the middle of December each year. Both species nest high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*). However, no suitable nesting habitat for either of these seabirds species were found on or close to the project area. No Hawaiian hoary bats were detected during the course of this survey. There were no suitable roosting trees for this species along the route of the proposed waterline.

No Blackburn's sphinx moth (*Manduca blackburni)* were observed in the project area, nor were any native or non-native host plants found during the field survey.

No Hawaiian goose (*Branta sandvicensis)* were observed in or near the project site during the field survey.

There are no rare, federally threatened, endangered, nor protected species under either the federal or State of Hawaii endangered species programs of flora or fauna at the project site. While a limited amount of grading work will occur at the project site, the area has been heavily disturbed by cattle grazing. As such, the proposed waterline extension project is not anticipated to have significant adverse impacts on biological resources.

The principal potential impact that development poses to protected seabirds is increased threat of downing birds disoriented by lights associated with the project, especially during the nesting season. The two main sources of outdoor lighting could pose a threat to nocturnally flying seabirds: 1) lighting used for nighttime construction, and 2) following build-out, the use of security lighting. As neither of these sources are anticipated for this project, construction of the waterline will not result in impacts to protected seabird species.

The principal potential impact that development poses to the Hawaiian hoary bat occurs during clearing and grubbing when vegetation is removed. The removal of trees within a construction site may temporarily displace individual roosting bats. Potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15 feet) during the pupping season (between June 15 and September 15). As there is no

suitable bat roosting habitat within the project site, it is not expected that the project will have any impact to this listed species.

Also, as noted in your letter, if a Hawaiian goose is observed within the project site during construction, all activity will be temporarily suspended until the bird moves off to a safe distance upon its own volition. The findings of the survey and report will be included in the Draft EA.

2. *FEDERAL NEXUS*

This State DHHL project does not involve a federal agency nor federal funding. If the project results in the taking of a listed animal species, applications for Federal and State incidental take permits will be submitted, if applicable.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Mich Hirano, AICP
Senior Vice President

CKO:la
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., R.T. Tanaka Engineers
Eric Guinther, AECOS, Inc.
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NEIL ABERCROMBIE
GOVERNOR

Dean H. Seki
Comptroller

Maria E. Zielinski
Deputy Comptroller

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

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(P)1247.2

Mr. Mich Hirano, AICP
Senior Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Department of Hawaiian Home Lands
Lower Kula Bypass Waterline Improvements
Kula, Maui, Hawaii

Thank you for the opportunity to provide comments for the subject project. The Department of Accounting and General Services' does not have any existing facilities in the area that would be impacted by this project, and we have no comments to offer at this time.

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

Sincerely,

DEAN H. SEKI
Comptroller

c. Mr. Stewart Matsunaga, Dept. of Hawaiian Home Lands

NOV 16 2012

NEIL ABERCROMBIE
Governor

RUSSELL S. KOKUBUN
Chairperson, Board of Agriculture

JAMES J. NAKATANI
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512

November 14, 2012

Mr. Mich Hirano, Senior Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Re: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

Thank you for the opportunity to review and comment on the Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements.

The Department of Agriculture has an irrigation line in relatively close proximity to the Lower Kula Bypass Waterline. However, the proposed improvements are not anticipated to impact our irrigation system. Therefore, we have no comments at this time. Please keep us apprised of any updates.

Should you have any questions or concerns, please do not hesitate to call Mr. Glenn Okamoto, P.E. of my staff at (808) 973-1123.

Sincerely,

FOR Russell S. Kokubun, Chairperson
Board of Agriculture

Island Fresh

8

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

Russell S. Kokubun, Chairperson
State of Hawaii
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814-2512

SUBJECT: Proposed Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

Dear Mr. Kokubun:

Thank you for your letter of November 14, 2012 providing comments on the proposed Lower Kula Bypass Waterline project.

We appreciate your review of the early consultation letter and your conveying confirmation that the Department of Agriculture has an irrigation line in relatively close proximity to the proposed Lower Kula Bypass Waterline, but does not anticipate the project will impact the Department of Agriculture's existing waterline.

Thank you again for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft Environmental Assessment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:la
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
K:\DATA\RTTanaka\DHHL LKulaWL\ECL Response Letters\Dept.ofAgriculture eclresponse.letter.docx

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

NOV 0 8 2012

NEIL ABERCROMBIE
GOVERNOR

KATHRYN S. MATAYOSHI
SUPERINTENDENT

STATE OF HAWAI`I

DEPARTMENT OF EDUCATION

P.O. BOX 2360

HONOLULU, HAWAI`I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

November 2, 2012

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai`i 96793

Dear Mr. Hirano:

Subject: Early Consultation Request for Department of Hawaiian Home Lands
Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

The Department of Education (DOE) has received your pre-consultation request for the proposed Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements.

The DOE has no comment to offer.

Thank you for the opportunity to provide comments. If you have any questions, please call Jeremy Kwock of the Facilities Development Branch at (808) 377-8301.

Respectfully,

Kenneth G. Masden II
Public Works Manager
Planning Section

KGM:jmb

c: Duane Kashiwai, Public Works Administrator, FDB
Bruce Anderson, CAS, Baldwin/Kekaulike/Maui/Complex Areas

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

NOV 0 2 2012

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

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

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

November 1, 2012

Mr. Mich Hirano, AICP
Senior Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

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

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

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

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

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

Sincerely,

Patti Kitkowski

Patti Kitkowski
District Environmental Health Program Chief

c EPO

11

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

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

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

Dear Ms. Kitkowski:

Thank you for your letter dated November 1, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the subject project. On behalf of the Department of Hawaiian Home Lands (DHHL), we note that the Department of Health, Maui District Health Office (DOH) has reviewed the information and provided comments. The following responses are offered in the order of DOH's comments.

1. NPDES PERMIT

The Clean Water Branch will be contacted by the civil engineer in regards to a National Pollutant Discharge Elimination System (NPDES) permit coverage for the subject project.

2. NOISE

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

3. STANDARD DEPARTMENT OF HEALTH COMMENTS

The DHHL confirms the Standard Comments on the Department of Health's website will be reviewed and complied with, as applicable.

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

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:lh
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
K:\DATA\RTTanaka\DHHL LKulaWL\ECL Response Letters\DOHMauiecIresponse.letter.doc

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 13, 2012

Munekiyo & Hiraga, Inc.
Attention: Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

via email: planning@mhplanning.com

Dear Mr. Hirano:

SUBJECT: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

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

At this time, enclosed are comments from the (a) Engineering Division, (b) Commission on Water Resource Management, and (c) Land Division – Maui District on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 26, 2012

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
_X_Commission on Water Resource Management
___Office of Conservation & Coastal Lands
_X_Land Division – Maui District
_X_Historic Preservation

RECEIVED
LAND DIVISION
2012 NOV -7 A 8:38
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements
LOCATION: Kula, Island of Maui; TMK: (2) 2-3-004:032
APPLICANT: Munekiyo & Hiraga, Inc. for the Department of Hawaiian Home Lands

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 9, 2012.

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

Attachments

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

Signed:
Print Name: Carty S. Chang, Chief Engineer
Date: 11/2/12

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/ Russell Y. Tsuji
Ref.: Early Consultation Request for DHHL Lower Kula Bypass Waterline Improvements Maui.005

COMMENTS

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

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

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

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

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

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

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

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

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

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

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

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

( ) Additional Comments: _____

_____

( ) Other: _____

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

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 11/2/12

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION
2012 NOV -8 P 2:39
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

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

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

2012 OCT 31 PM 3:32

October 26, 2012

MEMORANDUM

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

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements
LOCATION: Kula, Island of Maui; TMK: (2) 2-3-004:032
APPLICANT: Munekiyo & Hiraga, Inc. for the Department of Hawaiian Home Lands

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 9, 2012.

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

Attachments

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

Signed: RKChng
Print Name: R.K. CHONG
Date: 11/7/12

cc: Central Files

FILE ID: RFD 3691.6
DOC ID: 10368

17

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
MAUI DISTRICT
LAND DIVISION
2012 NOV -1 PM 1:21

October 26, 2012

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
_X_Commission on Water Resource Management
___Office of Conservation & Coastal Lands
_X_Land Division – Maui District
_X_Historic Preservation

RECEIVED
LAND DIVISION
2012 NOV -9 A 8:17
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements
LOCATION: Kula, Island of Maui; TMK: (2) 2-3-004:032
APPLICANT: Munekiyo & Hiraga, Inc. for the Department of Hawaiian Home Lands

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 9, 2012.

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

Attachments

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

Signed:
Print Name: Daniel Ornellas
Date: 11/7/12

cc: Central Files

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

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

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

Dear Mr. Tsuji:

Thank you for your letter dated November 13, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the subject project. On behalf of the Department of Hawaiian Home Lands (DHHL), we provide the following responses to the department's comments. The responses are provided in the order of your comments.

1. *ENGINEERING DIVISION*

We acknowledge the project area is located in the Flood Insurance Rate Map, Zone X and the National Flood Insurance Program does not regulate development in Zone X.

2. *COMMISSION ON WATER RESOURCE MANAGEMENT (CWRM)*

We acknowledge the CWRM has no objections to the project.

3. *MAUI LAND DIVISION*

We acknowledge the Maui Land Division has no comments on the project.

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

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:lh
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
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NOV 16 2012

NEIL ABERCROMBIE
GOVERNOR

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD N. FUCHIGAMI
RANDY GRUNE
JADINE URASAKI

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

IN REPLY REFER TO:

STP 8.1025

November 1, 2012

Mr. Mich Hirano, AICP
Senior Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Lower Kula Bypass Waterline Improvements
Early Consultation for Draft Environmental Assessment
TMK: (2) 2-3-004:032 (por.)

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project. DOT understands the Department of Hawaiian Home Lands (DHHL) proposes to design and install the Lower Kula Water System improvements. The proposed project involves installing an 18-inch bypass waterline from the water tank located at the Kula Kai Reservoir and connecting to an existing 12-inch waterline.

Given the location and the nature of the project, DOT does not anticipate any significant adverse impacts to the State transportation facilities.

DOT appreciates the opportunity to provide comments. If there are any questions, including the need to meet with DOT staff, please contact Mr. Garrett Smith of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

c: Stewart Matsunaga, Department of Hawaiian Home Lands

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

Glenn M. Okimoto, Ph.D., Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements for Draft Environmental Assessment TMK: (2)2-3-004:032 (por.) and 013 (por.) STP 8.1025

Dear Director Okimoto:

Thank you for your letter of November 1 2012 responding to our request for early consultation in preparation of the Draft Environmental Assessment for the subject project.

We appreciate your review of the document and your conveying confirmation that the Department does not anticipate any significant adverse impact to State transportation facilities.

Thank you again for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft Environmental Assessment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:la
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
K:\DATA\RTTanaka\DHHL LKulaWL\ECL Response Letters\SDOTeclresponse.letter.docx

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

OCT 2 6 2012

ALAN M. ARAKAWA
Mayor

TEENA M. RASMUSSEN
Economic Development Director

OFFICE OF ECONOMIC DEVELOPMENT

COUNTY OF MAUI
2200 MAIN STREET, SUITE 305, WAILUKU, MAUI, HAWAII 96793, USA
Telephone: (808) 270-7710 • Facsimile: (808) 270-7995 • Email: economic.development@mauicounty.gov

Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 So. High St.
Wailuku, HI 96793
Oct. 25, 2012

Subject: Early Consultation Request for Dept. of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

Dear Mr. Hirano,

The Maui County Office of Economic Development is concerned about this project and how it will impact the current water supply for both Kula residents and Kula farmers. We are particularly interested in knowing if water cutbacks will be necessary to current users once water starts flowing through this pipeline.

In addition to that issue, as you know, Kula has a chronic water shortage problem. We have current farmers that have been waiting for larger water meters for years and we have residents who have been on a water meter list for decades. Will this further delay the Dept. of Water Supply's ability to issue new meters?

Lastly, we are interested in knowing if the pipeline cuts across any active farms. If it does, we are interested in knowing if those farms will be economically harmed in any way. If the pipeline renders parts of their farm unusable, what kind of compensation will be available to them?

Sincerely,

Teena M Rasmussen
Director

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

Teena M. Rasmussen, Director
Office of Economic Development
County of Maui
2200 Main Street, Suite 305
Wailuku, Hawaii 96793

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

Dear Ms. Rasmussen:

Thank you for your letter dated October 2, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the subject project. On behalf of the Department of Hawaiian Home Lands (DHHL), we wish to provide the following information in response to your comments.

The DHHL acknowledges and shares your concern for the current water supply for Kula residents and Kula farmers. The proposed project is intended to benefit water users serviced by the Lower Kula Water System and Upper Kula Water System. Currently, an existing 18-inch waterline from the two (2) million gallon Kula Kai Water Tank transmits water to the Lower Kula Water System. At times of high water demand in the Upper Kula Water System, the water in the 18-inch waterline is also used to supplement source supply for the Upper Kula Water System. When this happens, water pressure in the Lower Kula Water System is lowered. The proposed project involves construction of a new 18-inch waterline from the Kula Kai Water Tank to connect with an existing 12-inch waterline at the Kula Kai Booster Pump Station which pumps water to the upper system. This new waterline will be dedicated to provide water to the Upper Kula Water System when needed. The project will eliminate the need to share water with the existing 18-inch waterline serving the Lower Kula Water System resulting in system reliability for both the Lower and Upper Kula Water System.

The completion of the new waterline will not result in cutbacks to current users nor will the completion of the project adversely affect or delay the Department of Water Supply's ability to issue new water meters.

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

The proposed new waterline will be underground (except for a short span over a gulch) and traverse agricultural land currently used for grazing. The total length of the waterline is approximately 1,274 lineal feet and the required easement will be approximately 15 feet in width. The land is owned by Haleakala Ranch and the ranch is supportive of the project. The waterline easement area will not be available for grazing during construction. As such, the proposed project will have a short term impact on grazing during construction. However, upon completion of the project, the area disturbed will be grassed and once the grass has established, the land will be available for grazing. The short-term impact on agriculture production will be minimal.

Thank you again for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:lh
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
K:\DATA\RTTanaka\DHHL LKulaWL\ECL Response Letters\OEDeclresponse.letter.doc

NOV 27 2012

ALAN M. ARAKAWA
MAYOR

JEFFREY A. MURRAY
CHIEF

ROBERT M. SHIMADA
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY
FIRE PREVENTION BUREAU

313 MANEA PLACE • WAILUKU, HAWAII 96793
(808) 244-9161 • FAX (808) 244-1363

Date : **November 23, 2012**

To : **Munekiyo & Hiraga, Inc.**
Attn: Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, HI 96793

Subject : **Early Consultation Request for DHHL's**
Lower Kula Bypass Waterline Improvements
Kula, Maui , Hawaii

Dear Mich,

Thank you for allowing our office to comment on this early consultation request. At this time our office on behalf of Fire Chief Jeffrey Murray, has no comment at this time. We do reserve the right to comment during the building permit process. Our requirements may not be imposed if this system will be observed by the Water Department.

If there are any questions or comments, please feel free to contact me by mail or at 244-9161 ext. 25.

Sincerely,

Kono Davis
Lieutenant, Fire Prevention Bureau
313 Manea Place
Wailuku, HI 96793

NOV 0 6 2012

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
HOUSING DIVISION
COUNTY OF MAUI

ALAN M. ARAKAWA
Mayor
JO-ANN T. RIDAO
Director
JAN SHISHIDO
Deputy Director

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

November 2, 2012

Mich Hirano, AICP
Munekiyo & Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Mich Hirano:

Subject: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

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

Please call Mr. Veranio Tongson Jr. of our Housing Division at (808) 270-1741 if you have any questions.

Sincerely,

Wayde T. Oshiro

WAYDE T. OSHIRO
Housing Administrator

cc: Director of Housing and Human Concerns

NOV 0 6 2012

ALAN M. ARAKAWA
Mayor

GLENN T. CORREA
Director

PATRICK T. MATSUI
Deputy Director

(808) 270-7230
FAX (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

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

October 31, 2012

Munekiyo & Hiraga, Inc.
Attention: Mitch Hirano, AICP
305 High Street, Suite 104
Wailuku, Hi 96793

Dear Mr. Hirano:

SUBJECT: Early Consultation Request for Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements Kula, Maui, Hawaii

Thank you for the opportunity to review the subject Early Consultation Request. We have no comment or objection at this time.

Should you have any questions or concerns, please feel free to contact me, or Steve Grogan, Capital Improvements Project Coordinator, at stephen.grogan@co.maui.hi.us or 808-270-6158.

Sincerely,

GLENN T. CORREA
Director of Parks & Recreation

c: Robert Halvorson, Chief of Planning & Development

GTC:RH:sg

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ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director

NOV 2 0 2012

COUNTY OF MAUI

DEPARTMENT OF PLANNING

November 19, 2012

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirono:

SUBJECT: EARLY CONSULTATION REQUEST FOR DEPARTMENT OF HAWAIIAN HOME LANDS LOWER KULA BYPASS WATERLINE IMPROVMENTS, KULA, MAUI, HAWAII; (RFC 2012/0167)

The Department of Planning has reviewed the proposed action and has one (1) comment to offer at this time: Please consult with the Department of Land and Natural Resources-State Historic Preservation Division for the proposed work.

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner Paul Fasi at paul.fasi@mauicounty.gov or at (808) 270-7814.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

xc: Paul F. Fasi, Staff Planner (PDF)
Department of Public Works
Project File
General File

WRS:CIY:PFF:rm
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MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

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

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii; (RFC 2012/0167)

Dear Mr. Spence:

Thank you for your letter of November 19, 2012 responding to our request for early consultation in preparation of the Draft Environmental Assessment for the subject project.

We appreciate your review of the document and your comment regarding consultation with the Department of Land and Natural Resources, State Historic Preservation Division (SHPD). On behalf of the Department of Hawaiian Home Lands, we confirm an Archaeological Assessment Survey was carried out for the project and the report was submitted to SHPD for review and approval.

Thank you again for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft Environmental Assessment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:la
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
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MAUI
305 High St., Suite 104 Wailuku, Hawaii 96793
PH: (808)244-2015 FAX: (808)244-8729
OAHU
735 Bishop St., Suite 238 Honolulu, Hawaii 96813 | PH: (808)983-1233
WWW.MHPLANNING.COM

NOV 08 2012

ALAN M. ARAKAWA
Mayor

DAVID C. GOODE
Director

ROWENA M. DAGDAG-ANDAYA
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

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

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

November 5, 2012

Mr. Mich Hirano, AICP
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: EARLY CONSULTATION REQUEST FOR DEPARTMENT OF HAWAIIAN HOME LANDS LOWER KULA BYPASS WATERLINE IMPROVEMENTS

We reviewed the early consultation request and have no comments at this time.

Thank you for the opportunity to provide comments.

Sincerely,

for DAVID C. GOODE
Director of Public Works

DCG:RMDA:jso
xc: Highways Division
Engineering Division
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NOV 0 6 2012

ALAN M. ARAKAWA
Mayor

KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director

TRACY TAKAMINE, P.E.
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

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

November 1, 2012

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

SUBJECT: DEPARTMENT OF HAWAIIAN HOME LANDS
LOWER KULA BYPASS WATERLINE IMPROVEMENTS
EARLY CONSULTATION
TMK (2) 2-3-004:032, KULA

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:

   a. None.

2. Wastewater Reclamation Division (WWRD) comments:

   a. None. There is no County wastewater system in the area of the subject project.

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

Sincerely,

KYLE K. GINOZA, P.E.
Director of Environmental Management

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

Kyle K. Ginoza, P.E., Director
Department of Environmental Management
County of Maui
2200 Main Street, Suite 100
Wailuku, Hawaii 96793

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

Dear Mr. Ginoza:

Thank you for your letter dated November 1, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the subject project. On behalf of the Department of Hawaiian Home Lands (DHHL), we wish to provide the following responses to your comments.

1. SOLID WASTE DIVISION

We acknowledge the Solid Waste Division does not have any comments on the subject project.

2. WASTEWATER RECLAMATION DIVISION (WWRD)

We acknowledge the WWRD confirms there is no County wastewater system in the area. We confirm the proposed project will not generate any wastewater flows.

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

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:lh
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
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ALAN M. ARAKAWA
Mayor

JO ANNE JOHNSON-WINER
Director

MARC I. TAKAMORI
Deputy Director

Telephone (808) 270-7511

NOV 26 2012

DEPARTMENT OF TRANSPORTATION

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

October 30, 2012

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

Subject: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

Dear Mr. Hirano,

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

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

Sincerely,

Jo Anne Johnson Winer /dlcy

Jo Anne Johnson Winer
Director

NOV 0 6 2012

ALAN M. ARAKAWA
Mayor

DAVID TAYLOR, P.E.
Director

PAUL J. MEYER
Deputy Director

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

November 1, 2012

Munekiyo & Hiraga, Inc.
Attention: Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

RE: Early Consultation Request for Department of Hawaiian Home Lands
Lower Kula Bypass Waterline Improvements, Kula, Maui, Hawaii

Thank you for the opportunity to provide the following comments on the referenced project.

The referenced project will not adversely impact the Department of Water Supply's (DWS) Upper Kula and Lower Kula systems. The DWS supports the proposed project.

Sincerely,

Dave Taylor, P.E., Director
ayi
c: DWS Engineering Division
WRPD Files

"By Water All Things Find Life"

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
PRESIDENT

KARLYNN FUKUDA
EXECUTIVE VICE PRESIDENT

GWEN OHASHI HIRAGA
SENIOR VICE PRESIDENT

MITSURU "MICH" HIRANO
SENIOR VICE PRESIDENT

MARK ALEXANDER ROY
VICE PRESIDENT

January 15, 2013

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

SUBJECT: Department of Hawaiian Home Lands Lower Kula Bypass Waterline Improvements

Dear Mr. Taylor:

Thank you for your letter dated November 1, 2012 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the subject project. On behalf of the Department of Hawaiian Home Lands (DHHL), we note that Department of Water Supply (DWS) has reviewed the information and supports the project. DHHL will continue to coordinate with the DWS during the development process.

Thank you for your participation in the Chapter 343, Hawaii Revised Statutes (HRS) review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at 244-2015.

Very truly yours,

Mitsuru "Mich" Hirano, AICP
Senior Vice President

MH:lh
cc: Stewart Matsunaga, Department of Hawaiian Home Lands
Kirk Tanaka, P.E., L.S., R.T. Tanaka Engineers, Inc.
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MAUI
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X. REFERENCES

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APPENDIX A.

Construction Plans

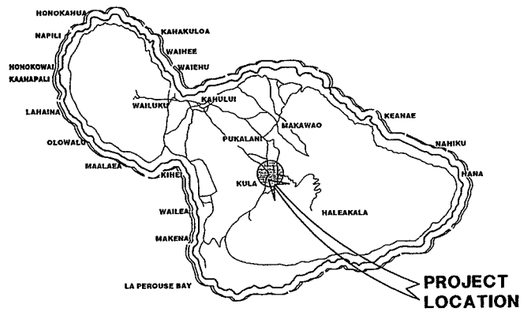
CONSTRUCTION PLANS FOR

LOWER KULA WATER SYSTEM IMPROVEMENTS
(BYPASS WATERLINE FOR PHASE VI PUMPING FACILITIES)

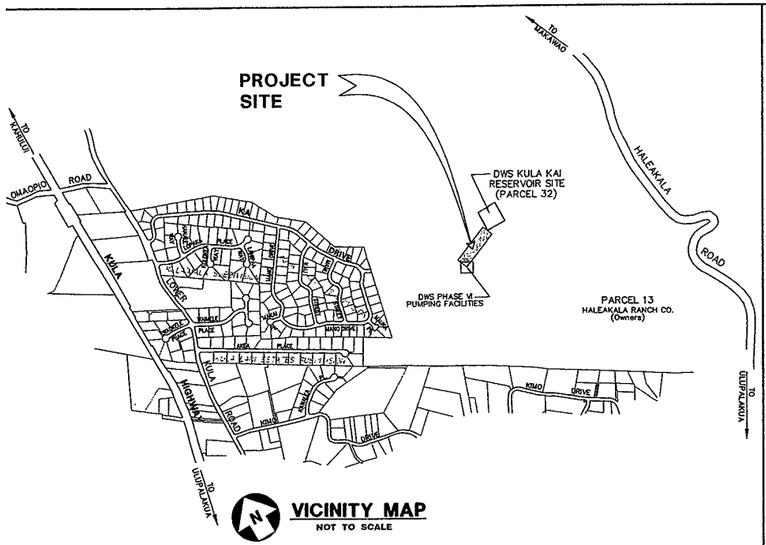
AT

KULA, MAUI, HAWAII

TAX MAP KEY (2) 2-3-04: 13 (PORTION) AND 32



LOCATION MAP
ISLAND OF MAUI



VICINITY MAP
NOT TO SCALE

APPROVED:

7/7/08
CHAIRMAN, HAWAIIAN HOMES COMMISSION — DATE

5/16/07
DIRECTOR, DEPARTMENT OF WATER SUPPLY, COUNTY OF MAUI — DATE
(APPROVAL IS LIMITED TO WATER IMPROVEMENTS WHICH WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY)

RE-APPROVAL:

11/29/12
CHAIRMAN, HAWAIIAN HOMES COMMISSION DESIGNATE — DATE

11/19/2012
DIRECTOR, DEPT. OF WATER SUPPLY, COUNTY OF MAUI — DATE
(APPROVAL IS LIMITED TO WATER IMPROVEMENTS WHICH WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY)

INDEX TO DRAWINGS:

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

PREPARED BY: R. T. TANAKA ENGINEERS, INC.
871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

GENERAL CONSTRUCTION NOTES:

1. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS OF THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION, ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
2. THE CONTRACTOR SHALL EMPLOY A HAWAII REGISTERED PROFESSIONAL SURVEYOR TO PERFORM ALL CONSTRUCTION STAKEOUTS, THE COST OF WHICH SHALL BE BORNE BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE IN OBTAINING NECESSARY PERMITS FOR THE WORK AND PROVIDE PUBLIC NOTICES AS REQUIRED.
4. THE CONTRACTOR WILL BE REQUIRED TO ARRANGE HIS WORK SO AS TO MINIMIZE INTERFERENCES WITH THE PUBLIC, LOCAL TRAFFIC AND WORKING OPERATIONS OF THE BUSINESSES WITHIN THE PROJECT AREA.
5. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR HIS CONSTRUCTION METHODS AND FOR JOB SITE SAFETY REQUIREMENTS AND PRECAUTIONS.
6. WHEN TRENCH EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
7. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER THE TRENCH INCLUDING SHORING TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
8. NO CONSTRUCTION EQUIPMENT SHALL BE PARKED WITHIN THE ROAD RIGHT-OF-WAY IN SUCH A MANNER THAT THE EQUIPMENT WILL OBSTRUCT THE NORMAL MOVEMENT AND SIGHT DISTANCE OF THE DRIVING MOTORISTS, EXCEPT DURING ACTUAL WORKING HOURS.
9. 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.
10. ALLOWABLE NOISE LEVELS FROM THE CONSTRUCTION ACTIVITIES SHALL BE IN CONFORMANCE WITH THE STATE DEPARTMENT OF HEALTH STANDARDS. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYLIGHT HOURS.
11. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR, AND PAY FOR ALL TEMPORARY UTILITIES REQUIRED FOR HIS WORK.
12. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION OR BETTER, ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, FENCES, ETC. UNLESS PROVIDED FOR SPECIFICALLY IN THE PROPOSAL. DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCIDENTAL TO THE VARIOUS ITEMS OF BID.

COMPACTION REQUIREMENTS:

1. TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS, OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
   a) EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER LIFT OF MATERIAL PER 600 SQUARE YARDS;
   b) AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER LIFT OF MATERIAL PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT;
   c) AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER LIFT OF MATERIAL PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT;
   d) ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE: THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
   e) TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
2. CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
3. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

PERMITTEE NOTES TO CONTROL DRAINAGE AND EROSION:

1. CONTROL DUST BY MEANS OF WATER WAGONS OR BY INSTALLING TEMPORARY SPRINKLER SYSTEMS OR BOTH IF NECESSARY.
2. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND FOR THE WEEKEND AND HOLIDAYS.
3. ALL EXPOSED AREAS SHALL BE PAVED, GRASSED, OR PERMANENTLY LANDSCAPED AS SOON AS FINISHED GRADING IS COMPLETED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN AND PAY FOR THE WATER NECESSARY FOR DUST CONTROL AND IRRIGATION PURPOSES.
5. CONTRACTOR TO CONSTRUCT TEMPORARY DIVERSION DITCHES OR SWALES AWAY FROM GRADED AREAS TO NATURAL DRAINAGEWAYS DURING CONSTRUCTION.
6. CONTRACTOR SHALL SUBMIT A SATISFACTORY SOIL EROSION CONTROL PLAN TO MINIMIZE SOIL EROSION PRIOR TO AN ISSUANCE OF A GRADING PERMIT. THE SOIL EROSION CONTROL PLAN SHALL INCLUDE BEST MANAGEMENT PRACTICES (BMP) TO MINIMIZE OR PREVENT SEDIMENTS FROM LEAVING THE CONSTRUCTION AREA IN COMPLIANCE WITH SECTION 20.08.035 OF THE MAUI COUNTY CODE. (ORD.NO. 2684)
7. THE CONTRACTOR IS THE SOLE PARTY RESPONSIBLE FOR THE ADEQUACY OF ALL TEMPORARY CONTROL MEASURES TO PROTECT THE WORK FROM THE EFFECTS OF EROSION.
8. COST OF TEMPORARY EROSION CONTROL MEASURES IS INCIDENTAL TO THE COST OF THE PROJECT.

DEPARTMENT OF WATER SUPPLY NOTES FOR WATER SYSTEM: (REV. 12/1/07)

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS) IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. ALL MATERIALS USED AND METHOD OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF DWS WATER SYSTEM STANDARDS. THE CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS STANDARDS BEFORE COMMENCING CONSTRUCTION.
3. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
4. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE NEW WATERLINE, UNLESS NOTED OTHERWISE, AND WILL NOT BE PAID FOR SEPARATELY.
5. CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
6. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF MANHOLE COVER SHALL BE THREE (3) FEET.
7. THE CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
8. CONNECTION TO DWS SYSTEM:
   A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. HE SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. HE SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
   B. WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS, AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
   C. AUTHORIZED DWS PERSONNEL WILL MAKE FINAL CONNECTION TO THE EXISTING LINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY DWS FOR SAID WORK, INCLUDING THE COST OF PRESSURE TESTING AND DISINFECTION.
   D. IF THE DWS PROVIDES ONLY INSPECTION AND SUPERVISING OPERATORS, AND DOES NOT PROVIDE PERSONNEL FOR THE ACTUAL CONNECTION, THE CONTRACTOR SHALL PROVIDE ALL PIPE FITTERS AND LABORS TO MAKE THE CONNECTION.
   E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR CLEANING AND CHLORINATION, TRENCH EXCAVATION, BACKFILLING, PAVING AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF THE DEPARTMENT OF WATER SUPPLY.
9. MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6"
10. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTING WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
    A. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
    B. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
    C. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".
11. ALL BURIED METALS SHALL BE WRAPPED WITH POLYWRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLYWRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.
12. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
13. THE CONTRACTOR SHALL PAINT AND NUMBER THE FIRE HYDRANT. NUMBERING TO BE FURNISHED BY DWS.
14. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE IN PRESSURE.
15. THE DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
16. THE CONTRACTOR SHALL SUBMIT TWO (2) SETS OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN TIFF FORMAT SHALL BE PROVIDED TO THE DWS FOR ALL PROJECT.
17. THE CONTRACTOR SHALL FURNISH AND INSTALL DUCTILE IRON NIPPLES WHETHER OR NOT SPECIFIED ON THE CONSTRUCTION PLANS FOR COMPLETE INSTALLATION OF THE WATERLINE AT THE CONTRACTOR'S EXPENSE.
18. THE CONTRACTOR SHALL FURNISH TEMPORARY CLEANOUTS WHEN NECESSARY TO TEST, FLUSH, AND CHLORINATE THE WATERLINE AT THE CONTRACTOR'S EXPENSE.
19. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PORTIONS OF ABANDONED WATERLINES THAT ARE EXPOSED OR WITHIN 12-INCHES BELOW THE GROUND SURFACE AT THE CONTRACTOR'S EXPENSE.
20. THE CONTRACTOR SHALL ADJUST TO FINISHED GRADES, ALL EXISTING VALVE BOXES AND MANHOLES, INCLUDING FRAME AND COVERS FOR ALL UTILITIES (I.E., WATER, SEWER, DRAIN, ETC.) AFFECTED BY THE WORK WHETHER SHOWN OR NOT SHOWN ON THE PLANS AT THE CONTRACTOR'S EXPENSE.
21. THE CONTRACTOR SHALL RESTORE ALL ROAD IMPROVEMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE 2005 "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS AMENDED, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AT THE CONTRACTOR'S EXPENSE. ROAD IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, PAVEMENT, PAVEMENT MARKERS, STRIPING, AND SPEED HUMPS.

DEPARTMENT OF WATER SUPPLY NOTES FOR CHLORINATION OF WATER SYSTEM PIPELINES: (REV. 12/1/07)

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 58" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
7. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICRO BIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.
8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER," AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
9. MICRO BIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER," AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
10. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

UTILITY LINES, PIPES, SERVICES AND APPURTENANCES:

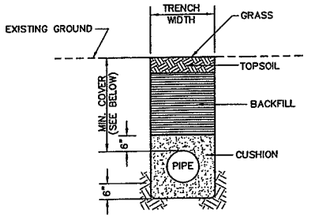
1. THE EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE AND WERE DETERMINED FROM AVAILABLE PLANS WITHIN THE PROJECT AREA. THEREFORE, THE LOCATION AND/OR DEPTH OF THESE UTILITIES ARE NOT GUARANTEED BY THE CONSULTANTS NOR BY THE DWS. THE CONTRACTOR SHALL VERIFY THESE INFORMATION BY TONING, HANDDIGGING, ETC. PRIOR TO STARTING EXCAVATION WORK. IN ADDITION, THE CONTRACTOR SHALL CONTACT AND COORDINATE WORK INVOLVING OR AFFECTING THE EXISTING UTILITIES WITH THE PROPER AUTHORITIES, BOTH PUBLIC AND PRIVATE, TO MINIMIZE DAMAGES AND DISRUPTION TO SERVICE. THE CONTRACTOR SHALL SEE TO IT THAT HIS WORKMEN OR OPERATORS SHALL BE APPRISED OF THE UTILITIES EXISTENCE AND LOCATION.
2. ANY UTILITIES, WHETHER SHOWN OR NOT ON THE CONTRACT PLANS, THAT THE CONTRACTOR ENCOUNTERS DURING THE PROGRESS OF THE WORK, SUCH AS TELEPHONE DUCTS, ELECTRIC DUCTS, WATER LINES, SEWER LINES, ELECTRIC LINES, GAS LINES AND DRAINAGE PIPES, ETC., SHALL NOT BE DISTURBED OR DAMAGED UNLESS OTHERWISE INSTRUCTED IN THE PLANS AND SPECIFICATIONS. IN THE EVENT THE UTILITIES ARE DAMAGED OR DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL BE HELD LIABLE FOR THE DAMAGED OR DISTURBED UTILITIES. THE CONTRACTOR SHALL REPAIR THE DAMAGED OR DISTURBED UTILITIES TO THE EXISTING CONDITIONS OR BETTER AT NO COST TO THE DWS. ANY DAMAGE CLAIMS DUE TO THE DISRUPTION OF SERVICE CAUSED BY THE UTILITIES BEING DAMAGED SHALL BE PAID BY THE CONTRACTOR WHO SHALL SAVE HARMLESS THE DWS AND CONSULTANTS FROM ALL SUITS, ACTIONS OR CLAIMS OF ANY CHARACTER BROUGHT ON ACCOUT OF SUCH DAMAGES.
3. THE CONTRACTOR SHALL CONTACT THE VARIOUS UTILITY COMPANIES PRIOR TO START OF CONSTRUCTION TO COORDINATE THE WORK TO BE DONE BY THE UTILITY'S OWN FORCES IN ORDER THAT THESE WORKS MAY PROCEED IN A REASONABLE MANNER AND WILL NOT DELAY THE PROGRESS OF THE CONSTRUCTION. ALSO, TO OBTAIN FROM THEM ANY INFORMATION PERTAINING TO EXISTING UTILITIES THAT WILL EITHER SUPPLEMENT THE INFORMATION SHOWN ON THE PLANS OR WILL CORRECT ANY SUCH INFORMATION THAT MAY BE IN ERROR.
4. ANY INTERRUPTION OF EXISTING SERVICES SHALL BE APPROVED BY THE ENGINEER. ABANDONMENT OF EXISTING UTILITY LINES AND APPURTENANCES SHALL BE DONE ONLY AFTER THE NEW UTILITY SYSTEMS ARE OPERATIONAL AND ACCEPTED BY RESPONSIBLE AGENCIES.
5. THE CONTRACTOR SHALL VERIFY THE LOCATIONS (HORIZONTAL & VERTICAL) OF ALL STRUCTURES, UTILITIES, ETC., PRIOR TO START OF ANY WORK. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE DIRECTOR AND ANY CHANGES SHALL BE MADE IN ACCORDANCE WITH HIS INSTRUCTIONS. STARTING WORK ON THE PARTICULAR ACTIVITY SHALL BE CONSTRUED TO MEAN THAT THE CONTRACTOR AGREES THAT THE EXISTING LOCATION ARE ESSENTIALLY CORRECT AS SHOWN.
6. EXISTING PIPES TO BE ABANDONED SHALL BE SECURELY SEALED WITH TIGHT-FITTING PLUG OR A WALL OF CLASS "B" CONCRETE NOT LESS THAN 6" THICK.

NOTES FOR TOPOGRAPHIC FEATURES:

1. ELEVATION DATUM = ASSUMED
2. ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD, HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA. UNDERGROUND UTILITIES SHOWN HEREON ARE FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES, BUT FROM OTHERS NOT CONNECTED WITH THIS COMPANY. THEREFORE, NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.
3. RIGHT-OF-WAY AND BOUNDARY LINES SHOWN ARE APPROXIMATE AND SHOWN FOR CONVENIENCE ONLY.

ADDITIONAL WATER SYSTEM NOTES:

1. EXISTING WATER SYSTEM
   A. THE CONTRACTOR'S ATTENTION IS CALLED TO THE EXISTING WATER SYSTEM AND APPURTENANCES NOW SERVING THE PROJECT AREA. THE SYSTEM SHALL BE MAINTAINED IN SERVICE UNTIL SUCH TIME AS THE NEW MAINS, SERVICE LATERALS AND SERVICE CONNECTIONS ARE INSTALLED, TESTED, CHLORINATED, FLUSHED AND THE EXISTING SERVICES TRANSFERRED TO THE NEW SYSTEM.
   B. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF ANY DAMAGE TO THE EXISTING WATER SYSTEM DUE TO HIS CONSTRUCTION OPERATION. THE DEPARTMENT WILL PERFORM ALL NECESSARY REPAIRS AND THE COST SHALL BE PAID FOR BY THE CONTRACTOR.
   C. AFTER THE NEW WATER SYSTEM AND APPURTENANCES OR PORTIONS THEREOF INCLUDING SERVICE LATERALS, SERVICE CONNECTIONS AND METER BOXES HAVE BEEN INSTALLED, THE CONTRACTOR WILL RECONNECT THE EXISTING SERVICE TO THE NEW SYSTEM AS NOTED BELOW (NOTE #2).
2. WATER SERVICE LATERAL CONNECTIONS:
   A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR RECONNECTING CONSUMER'S PIPE TO NEW SERVICE LATERAL AND COMPLETE INSTALLATION OF SERVICE LATERAL, TO THE SATISFACTION OF THE DEPARTMENT OF WATER SUPPLY.
   B. THE CONTRACTOR SHALL COORDINATE WATER METER INSTALLATION WITH THE DEPARTMENT OF WATER SUPPLY.
   C. AUTHORIZED DEPARTMENT OF WATER SUPPLY PERSONNEL SHALL MAKE THE WATER METER RELOCATION FROM EXISTING SERVICE LATERAL TO NEW SERVICE LATERAL.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING WATER SERVICE TO CONSUMERS AT ALL TIMES. IF WATER SERVICE DISRUPTION IS NECESSARY, THE CONTRACTOR SHALL COORDINATE ALL DISRUPTIONS OF SERVICE WITH THE CONSUMERS.
4. ANY ITEMS TO BE REMOVED AND SALVAGED SHALL BE TAKEN TO THE DEPARTMENT OF WATER SUPPLY BASE YARD AT ALL TIMES AT CONTRACTOR'S EXPENSE.



TYPICAL TRENCH RESTORATION DETAIL AT GRASSED AREA

SCALE: 1/2 in. = 1 ft.

NOTES:

1. CONTRACTOR SHALL PROVIDE A TEMPORARY COLD MIX PATCH IF PERMANENT RESTORATION CANNOT BE MADE WITHIN 24 HOURS OF BACKFILL
2. ALL EXPOSED AREAS SHALL BE GRASSED.
3. MINIMUM COVER FOR WATERLINE:
   a) UNDER ROAD PAVEMENT = 36"
   b) UNDER SHOULDER AREA:
      1) SMALLER THAN 4" = 24"
      2) 4" = 30"
      3) 6" AND LARGER = 36"
4. ANY DAMAGES TO EXISTING UTILITIES SHALL BE REPLACED AND/OR RESTORED TO ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT OF WATER SUPPLY.
5. FURTHER PAVEMENT AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE RECONSTRUCTED AND REPAVED AS DIRECTED BY THE DEPARTMENT OF WATER SUPPLY OR BY THE DEPARTMENT OF PUBLIC WORKS AND WASTE MANAGEMENT AT NO ADDITIONAL COST TO THE COUNTY.

Tanaka ENGINEERS, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
871 KOLU STREET
SUITE 201
WAILUKU, MAUI, HAWAII
PHONE No.: 242-6861

CONSTRUCTION PLANS FOR
LOWER KULA WATER SYSTEM IMPROVEMENTS
(BYPASS WATERLINE FOR PHASE VI PUMPING FACILITIES)
AT
KULA, MAUI, HAWAII
TAX MAP KEY: (2)2-3-04: 13(PORTION) & 32

CONSTRUCTION NOTES AND DETAILS

KIRK T. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 6646-C
HAWAII, U.S.A.
LICENSE EXPIRES: 04/30/14

THIS WORK WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

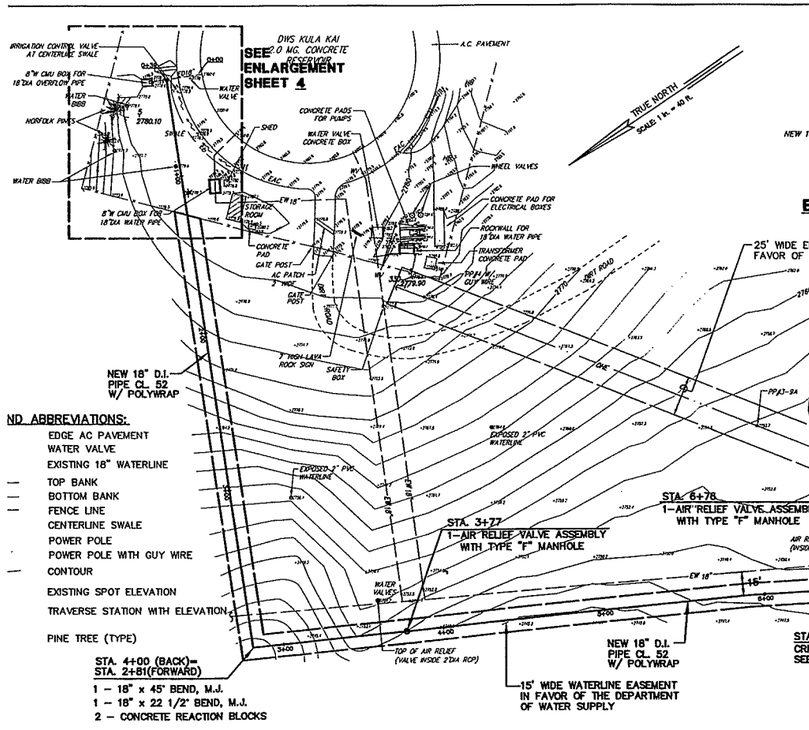
DATE: 11/07/12

REVISIONS:

11/07/12 REVISIONS PER D.W.S.

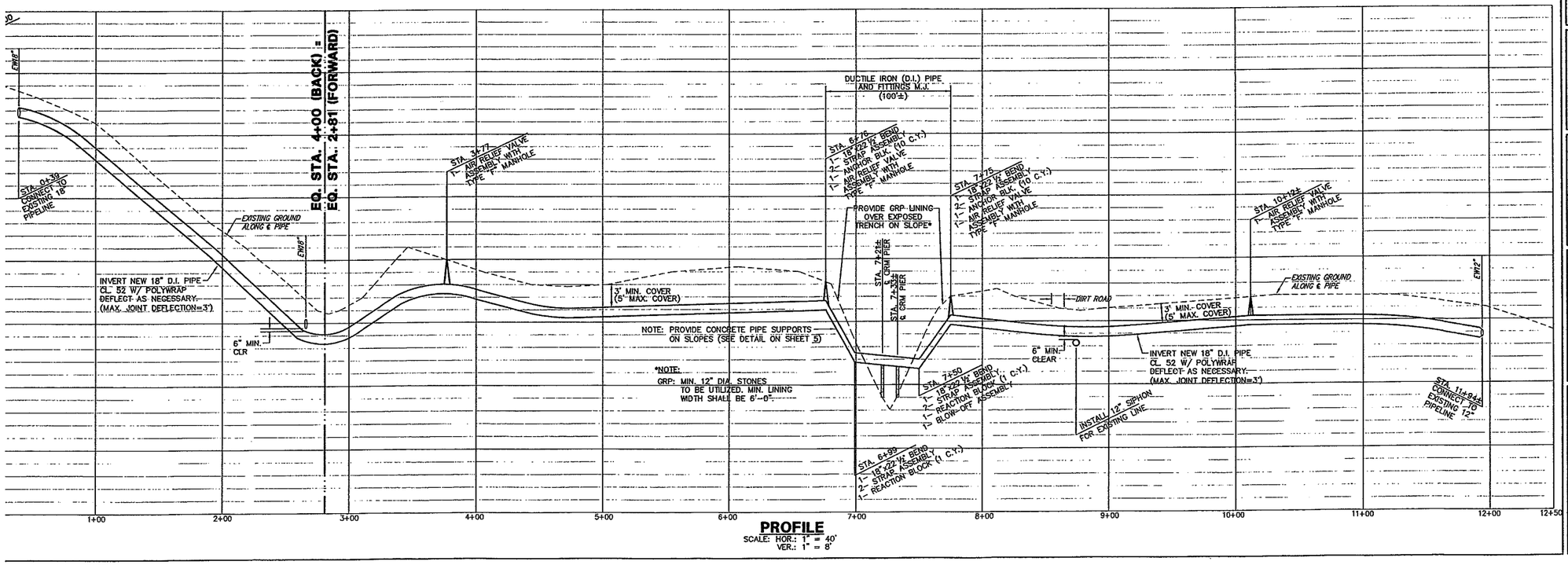
T.M.K.: (2) 2-3-03: 13(PORTION) & 32
SCALE: AS NOTED
DESIGNED BY: R.T.
CHECKED BY: R.T.
DRAWN BY: M.K.
DATE: FEBRUARY 2002
JOB No.: 96-12

SHEET 2 OF 6 SHEETS



PLAN
SCALE: 1" = 40'

ENLARGEMENT- CONNECTION TO EXISTING 12" LINE AT STA. 11+98±
NOT TO SCALE



PROFILE
SCALE: HOR.: 1" = 40'
VER.: 1" = 8'

Tanaka ENGINEERS, INC.
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CONSTRUCTION PLANS FOR
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(BYPASS WATERLINE FOR PHASE VI PUMPING FACILITIES)
AT
KULA, MAUI, HAWAII
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PLAN AND PROFILE

KIRK T. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 6846-C
HAWAII, U.S.A.
LICENSE EXPIRES: 04/30/14

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

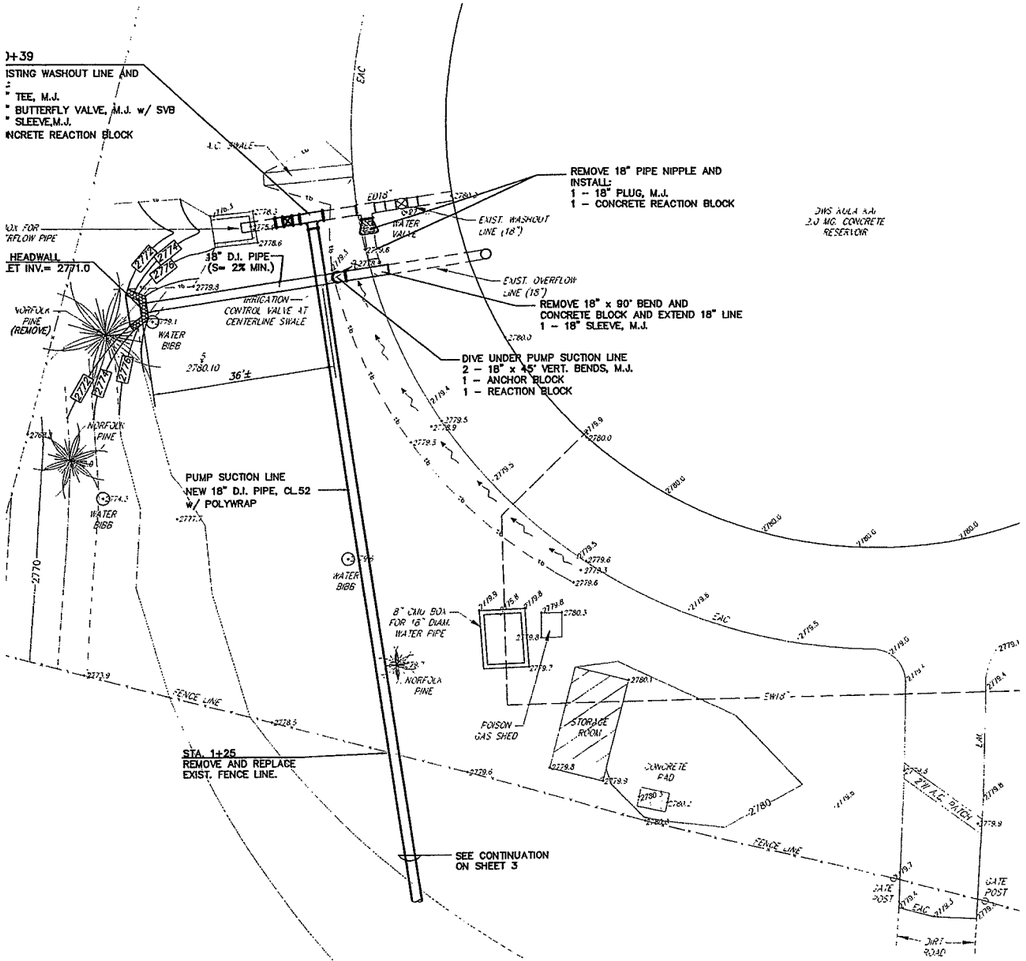
DATE: 11/07/12

REVISIONS:

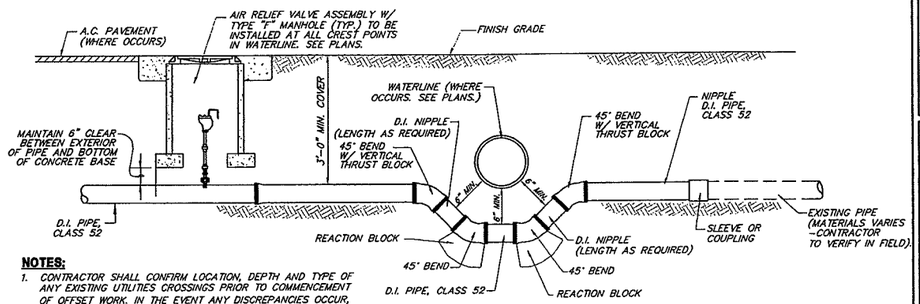
08/04/03	REVISIONS PER D.W.S.
11/07/12	REVISIONS PER D.W.S.

T.M.K.:	(2) 2-3-04:13 (POR.) & 32
SCALE:	AS NOTED
DESIGNED BY:	R.T.
CHECKED BY:	R.T.
DRAWN BY:	N.D.
DATE:	FEBRUARY 2002
JOB No.:	96-12

SHEET 3 OF 6 SHEETS



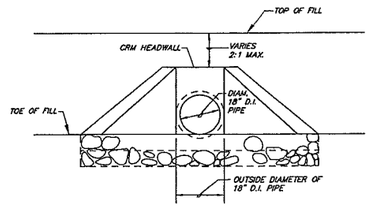
ENLARGEMENT
SCALE: 1" = 10'



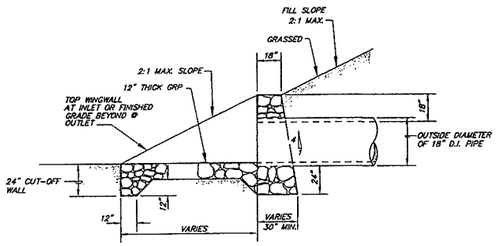
NOTES:

1. CONTRACTOR SHALL CONFIRM LOCATION, DEPTH AND TYPE OF ANY EXISTING UTILITIES CROSSINGS PRIOR TO COMMENCEMENT OF OFFSET WORK. IN THE EVENT ANY DISCREPANCIES OCCUR, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, OTHERWISE ANY CORRECTIVE WORK REQUIRED SHALL BE PERFORMED SOLELY AT THE CONTRACTORS EXPENSE.
2. FOR CONNECTIONS TO EXISTING A.C. (ASBESTOS-CEMENT) PIPE THE DEPARTMENT OF WATER SUPPLY PROHIBITS CUTTING OF THE A.C. PIPE. CONTRACTOR SHALL REMOVE ONE (1) COMPLETE SECTION OF A.C. PIPE AT EACH CONNECTION TO THE EXISTING A.C. WATERLINE AND REPLACE SAME WITH EQUIVALENT DIAMETER DUCTILE IRON PIPE (CLASS 52).
3. WHEREVER CONSTRUCTION JOINTS ARE REQUIRED 6" RUBBER OR NEOPRENE WATERSTOPS SHALL BE INSTALLED. WATERSTOP SHALL BE OF THE TYPE SPECIFIED AND MANUFACTURED BY THE KIRKHILL COMPANY, OR APPROVED EQUAL.
4. ALL INTERIOR JOINTS AND FITTINGS SHALL BE "MJ".
5. INVERT ELEVATIONS OF TOP BENDS SHALL BE EQUAL.
6. INVERT ELEVATIONS OF BOTTOM BENDS SHALL BE EQUAL.

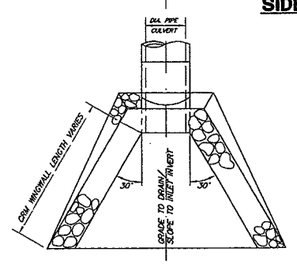
TYPICAL SECTION AT SIPHON (WL/WL) CROSSING
NOT TO SCALE



FRONT ELEVATION



SIDE ELEVATION



PLAN

CEMENT RUBBLE MASONRY HEADWALL STRUCTURE
NOT TO SCALE

Tanaka ENGINEERS, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
871 KOLU STREET
SUITE 201
WAILUKU, MAUI, HAWAII
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CONSTRUCTION PLANS FOR
LOWER KULA WATER SYSTEM IMPROVEMENTS
(BYPASS WATERLINE FOR PHASE VI PUMPING FACILITIES)
AT
KULA, MAUI, HAWAII
TAX MAP KEY: (2)2-3-04: 13(PORTION) & 32

ENLARGEMENT AND MISCELLANEOUS DETAILS

KIRK T. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 6646-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

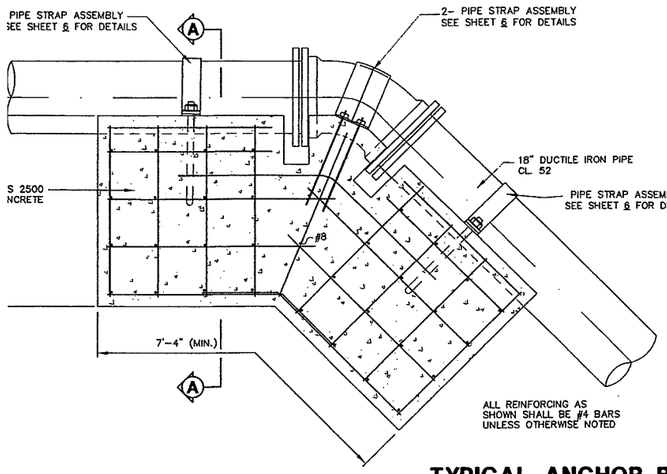
DATE: 12/12/03

REVISIONS:

05-04-03 REVISIONS PER D.W.S.

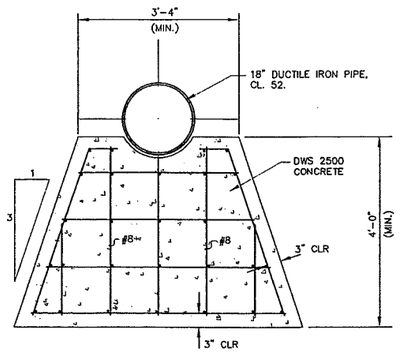
T.M.K.: (2) 2-3-04:13 (POR.) & 32
SCALE: AS NOTED
DESIGNED BY: R.T.
CHECKED BY: R.T.
DRAWN BY: N.D.
DATE: FEBRUARY 2002
JOB No.: 96-12

SHEET **4** OF 6 SHEETS

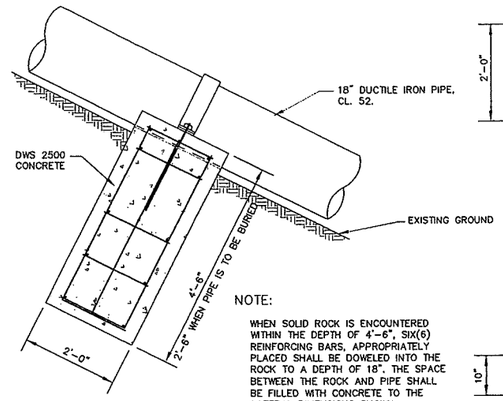


TYPICAL ANCHOR BLOCK WITH TWO(2) STRAP ASSEMBLY

SCALE: 3/4" = 1'-0"



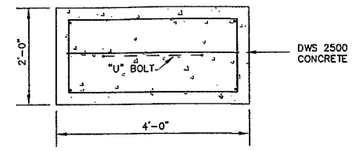
SECTION "A-A"



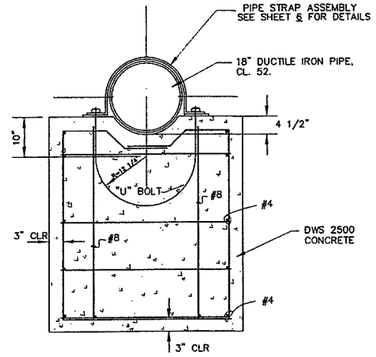
SIDE VIEW

NOTE:

WHEN SOLID ROCK IS ENCOUNTERED WITHIN THE DEPTH OF 4'-6", SIX(6) REINFORCING BARS, APPROPRIATELY PLACED SHALL BE DOWELED INTO THE ROCK TO A DEPTH OF 18". THE SPACE BETWEEN THE ROCK AND PIPE SHALL BE FILLED WITH CONCRETE TO THE LATERAL DIMENSIONS SHOWN.



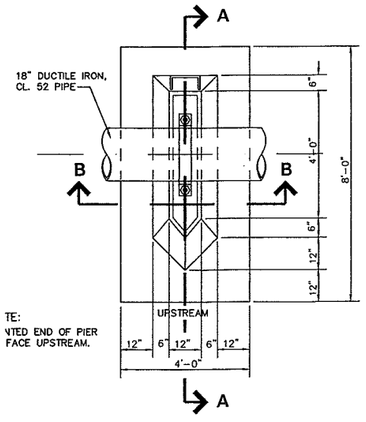
TOP VIEW



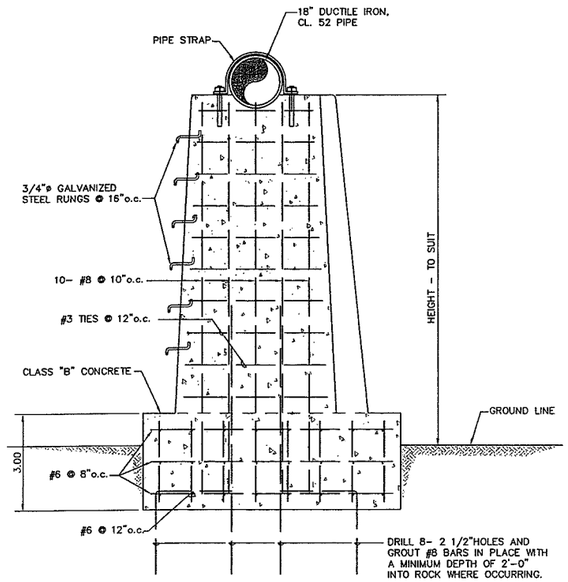
FRONT VIEW

PIPE SUPPORTS FOR SLOPES WITHIN GULCHES

SCALE: 3/4" = 1'-0"



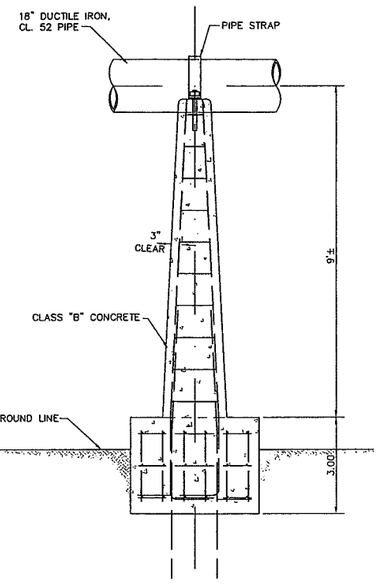
PLAN



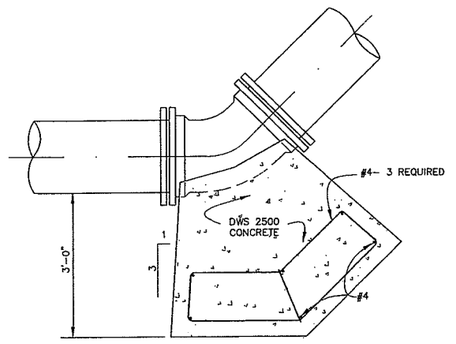
SECTION "A-A"

CONCRETE PIER PIPE SUPPORT

SCALE: 1/2" = 1'-0"



SECTION "B-B"



CONCRETE REACTION BLOCKS FOR HORIZONTAL AND VERTICAL BENDS

SCALE: 3/4" = 1'-0"

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CONSTRUCTION PLANS FOR
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(BYPASS WATERLINE FOR PHASE VI PUMPING FACILITIES)
AT
KULA, MAUI, HAWAII
TAX MAP KEY: (2)2-3-04: 13(PORTION) & 32

DETAILS - CRM PIER, ANCHOR BLOCK & PIPE SUPPORT

ROBERT T. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 1754-S
HAWAII, U.S.A.

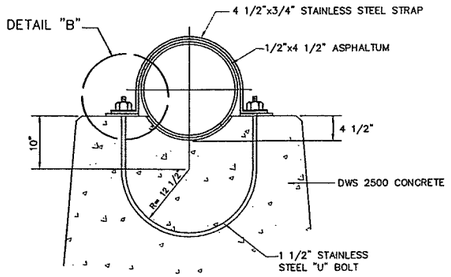
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

DATE: 12/12/03

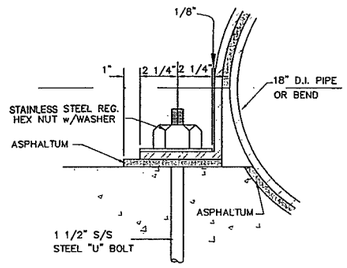
REVISIONS:

T.M.K.:	(2) 2-3-03: 13(PORTION) & 32
SCALE:	AS NOTED
DESIGNED BY:	R.T.
CHECKED BY:	K.T.
DRAWN BY:	M.K.
DATE:	FEBRUARY 2002
JOB No.:	96-12

SHEET 5 OF 6 SHEETS



SIDE VIEW
SCALE: 1" = 1'-0"



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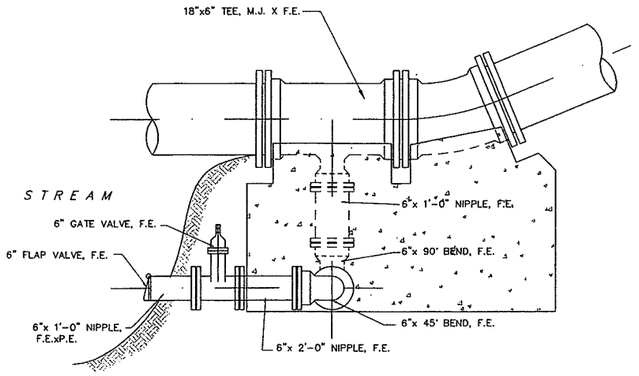
SCALE: 3" = 1'-0"

STRAP ASEMBLY DETAIL

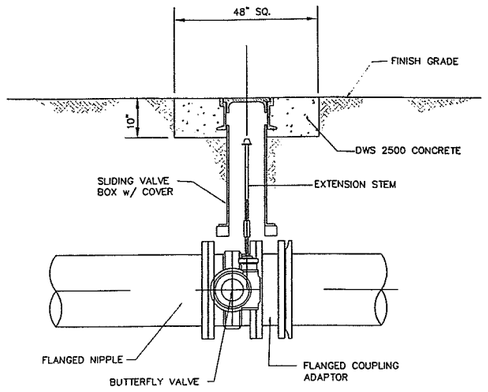
SCALE: AS NOTED



BLOW- OFF ASSEMBLY

TYPE B

NOT TO SCALE



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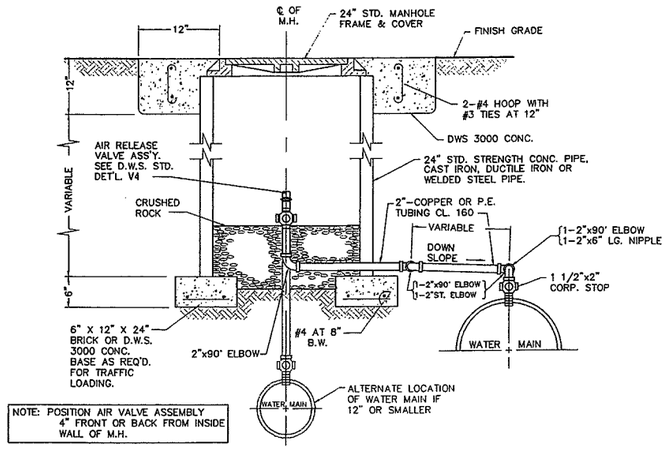
NOT TO SCALE



SECTION THROUGH MANHOLE

AIR VALVE MANHOLE TYPE "F"

D.W.S. STANDARD DETAIL 25R
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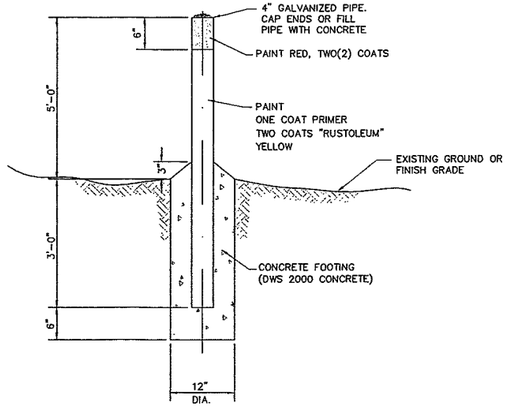

PIPELINE MARKER

NOT TO SCALE

Tanaka ENGINEERS, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

871 KOLU STREET
SUITE 201
WAILUKU, MAUI, HAWAII
PHONE No.: 242-6881

CONSTRUCTION PLANS FOR
LOWER KULA WATER SYSTEM IMPROVEMENTS
(BYPASS WATERLINE FOR PHASE VI PUMPING FACILITIES)
AT
KULA, MAUI, HAWAII
TAX MAP KEY: (2)2-3-04: 13(PORTION) & 32

MISCELLANEOUS DETAILS

ROBERT T. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 1754-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

DATE : 6/5/03

REVISIONS:
11/06/12 REV. PER DWS

T.M.K.: (2) 2-3-03: 13(PORTION) & 32
SCALE: AS NOTED
DESIGNED BY: R.T.
CHECKED BY: R.T.
DRAWN BY: M.K.
DATE: FEBRUARY 2002
JOB No.: 96-12

SHEET
6
OF 6 SHEETS

APPENDIX B.

Biological Surveys

Biological surveys for Lower Kula Water System Improvements, Kula, Island of Maui

November 15, 2012
rev. January 17, 2013

AECOS No. 1334B

Eric Guinther, Reginald David[1], Susan Burr, and Chad Linebaugh
AECOS, Inc.
45-939 Kamehameha Hwy, Suite 104
Kāne'ohe, Hawai'i 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: aecos@aecos.com

Introduction

AECOS biologists, Susan Burr and Chad Linebaugh conducted, on October 10, 2012, biological and water quality surveys of an unnamed gulch on TMK (2) 2-3-04:13 in Kula, Maui. The purpose of the surveys was to aid in the planning process for the Lower Kula Water Systems Improvements Project. Because no flowing or standing water, or evidence of such in the recent past, was present in the gulch, this initial survey found no aquatic biota and did not collect water samples. However, the biologists made a preliminary jurisdictional determination with respect to the Clean Water Act and the Rivers and Harbors Act for the gulch that crosses the Project site. Additional surveys of the entire Project area, undertaken to reveal environmental resources and concerns—specifically with regard to plants and birds—were undertaken by biologists Eric Guinther and Reginald David on November 12, 2012.

Site and Project Descriptions

The Project site is located on Haleakala Ranch pasture land on the northwest face of East Maui Mountain, between Kula Highway and Haleakalā Highway (Fig. 1) between the 2700- and 2800-ft elevation contours. The terrain is sloped, gently rolling with shallow gulches, and located directly upslope of the Kulamalu and Kula Kai residential subdivisions off Lower Kula Road. The site is reached from the upper end of Ka Drive.

[1] Rana Biological Consulting, Inc., Kailua-Kona, Hawai'i.

Figure 1. November 2012 survey area located downslope of Haleakalā Highway.

The Project (Bypass Waterline for Phase IV Pumping Facilities) involves construction of approximately 1,320 ft of 18-inch waterline between the Kula Kai Booster at 2737-ft and Kula Kai Reservoir at 2774-ft elevation (Figs. 1 and 2). The route must cross one of the shallow gulches found in the area.

Methods

The gulch survey on October 10, 2012, involved two biologists walking upslope in or along the gulch from Kula Kai Subdivision to Haleakalā Highway, then viewing the gulch downslope where it crosses Kula Highway and Lower Kula Road. Within the survey area, an attempt was made to establish an ordinary high water mark (OHWM) for the "stream" based upon methods and definitions provided in USACE (2005).

The botanical survey on November 12 was conducted by wandering an area loosely defined as the "survey area," which encompassed a broad corridor between the Kula Kai Booster site and the Kula Kai Reservoir site. Notes and photographs taken during the October survey were reviewed for additional information on species present. Although the facility sites were not explored within their respective security fencing, any shrubs and trees within could be seen and identified. A handheld GPS unit (Trimble 2005 Series GeoXT) was used to record survey progress. All fern, gymnosperm, and flowering plant species were identified as they were encountered, and an estimate of relative abundance made for each entry. Although weather conditions at the time were ideal, the area is suffering from an unusually dry period, and many herbaceous plants could not be identified from the sparse organic material remaining. The likelihood that these represent other than non-native pasture species is extremely low; wetter conditions would alter species abundance records but not our conclusions.

Figure 2. View from vicinity of Kula Kai Booster towards the Kula Kai Reservoir across pasture land. A shallow gulch lies just beyond biologist at center.

To quantify usage by birds, one avian count stations was sited close to the *mauka* boundary of the project site, and another close to the *makai* end of the site. A single eight-minute avian point count was made at each of the two count stations. Field observations were made with the aid of Leica 8 X 42 binoculars and by listening for vocalizations. The avian counts were conducted in the early morning hours. Time not spent counting at the point count stations was used to search the rest of the site for species and habitats not detected during the point counts. Weather conditions were ideal, with no clouds or rain, unlimited visibility, and winds between 2 and 7 kilometers per hour.

The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal signs. A running tally was kept of all terrestrial vertebrate mammalian species detected within the project area. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or *ʻōpeʻapeʻa* as it is known locally, all terrestrial mammals currently found on the Island of Maui are alien species, and most are ubiquitous.

The nomenclature of the flowering plants follows that of Wagner, Herbst, and Sohmer (1990, 1999) for both the native and naturalized plants. Names for gymnosperms come from Staples and Herbst (2005). Ferns follow Palmer (2003). The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 53rd supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chesser et al., 2009, 2010, 2011, 2012). Mammal scientific names follow (Tomich, 1986).

Results

Waterways

A single, unnamed gulch[2] is present in the area where the proposed water line crosses (to be trenched typically 3 ft under the existing surface). This feature originates on the slopes of East Maui Mountain, upslope of Haleakalā Highway around the 3600-ft elevation and appears to merge with the surrounding landscape down from Lower Kula Road. However, the gulch is shown on USGS topographic maps as a non-perennial "blue-line stream" arising in the Project area (at the ranch road crossing) and continuing downslope to the 2200-ft elevation some 900 ft below Kula Highway (USGS, 1983). The gulch can be carefully traced by contours to the 500-ft elevation where it opens into Pūlehu Gulch, flow from which eventually dissipates across the Maui Isthmus.

[2] The name Waikapu is associated with this feature in DLNR-DAR (2004).

The gulch was dry during both of our surveys. Scott Miedell of Haleakalā Ranch reports that water has flowed through the swale only once or twice in the last three years. Minimal evidence of a bed and banks occurs in the Project area and an ordinary high water mark (OHWM) is not discernible (AECOS, 2012; USACE, 2005; see Fig. 3).

Figure 3. Gulch in project area, here showing no bed or banks and no discernible OHWM.

Vegetation

The site is open pasture covered mostly by Kikuyu grass (*Pennisetum cladestinum*) and broken by scattered boulder outcrops, numerous cactus plants (*panini* or *Opuntia ficus-indica*), and a shallow gulch (Figs. 3 and 4). The ground cover consists mostly of patches of dead, dried plants and patches of stressed, but green grass. Remains of various annual herbs are evident. The vegetation changes very little into the gulch or swale, although is more diverse and healthier (thicker, greener turf), presumably due to protection from the wind, reduced grazing by ungulates, and as the recipient of whatever rainfall runoff has occurred recently. A grove of planted pines (possibly two

different ornamental species), conspicuous in the satellite image (Fig. 1), occupies an area immediately upslope of the Kula Kai Reservoir parcel.

Flora

A list of plant species observed during the surveys is provided as Table 1. The table includes the scientific name, common name, status, and relative abundance for each species. Notes provide additional information on occurrences and other observations made during the botanical survey. The table is divided into two parts: Table 1a listing non-native and late introductions to the Hawaiian Islands (naturalized and non-naturalized species) and Table 1b of native species and early Polynesian introductions. Only plants in the Table 1b listing would have resource value of potential concern to resource agencies (an exception would be designated exceptional trees).

Figure 4. View towards the coast at Kihei (southwest) showing area of dense *panini* near Kula Kai Booster site.

The total number of species identified from the site is 53. Of these 53 species, native species (plants of status indigenous or endemic) number 8 (15%). More than half of

the truly native species are ferns (Table 1b). Ten species were associated with the gulch (Note <2>), where nearly all of the ferns (native and non-native) were observed. No plant of any particular concern in terms of rarity in the Hawaiian Islands was found.

Table 1. Checklist of plants observed in Lower Kula Waterline survey area.

Species	Common name	Status	Abundance	Notes
Table 1a. non-native plants				
	FERNS AND FERN ALLIES			
BLECHNACEAE				
Blechnum appeniculatum Willd.	---	Nat	R2	<2, 4>
PTERIDACEAE				
Adiantum hispidulum Sw.	rough maidenhair	Nat	R1	<2, 4>
	GYMNOSPERMS			
ARAUCARIACEAE				
Araucaria columnaris (Forst.) Hook.	Cook pine	Nat	R	
PINACEAE				
Pinus thunbergiana Franco	Japanese black pine	Orn	R3	<4>
Pinus pinea L.	Italian stone pine	Orn	R	<4>
	ANGIOSPERMS			
	DICOTYLEDONS			
AMARANTHACEAE				
Amaranthus spinosus L.	spiny amaranth	Nat	R	<3>
ANACARDIACEAE				
Schinus molle L.	Calif. pepper tree	Nat	R	
APIACEAE				
Foeniculum vulgare Mill.	fennel	Nat	R	<2>
APOCYNACEAE				
Thevetia peruviana (Pers.) K. Schum.	be-still tree	Nat	R	<3>
ASCLEPIADACEAE				
Asclepias physocarpa (E. Mey.) Schlecter	balloon plant	Nat	U	
ASTERACEAE (COMPOSITAE)				
Bidens pilosa L.	*ki*	Nat	R	
Conyza bonariensis (L.) Cronq.	hairy horseweed	Nat	R	
Senecio madagascariensis Poir.	---	Nat	C	<1>
Sonchus oleraceus L.	sow thistle	Nat	R	<3>
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	Nat	U	

Table 1 (continued).

Species	Common name	Status	Abundance	Notes
CACTACEAE				
Opuntia ficus-indica (L.) Mill.	*pānini*	Nat	A	
CHENOPODIACEAE				
Chenopodium murale L.	*'aheahea*	Nat	R	
EUPHORBIACEAE				
Ricinus communis L.	castor bean	Nat	R	
FABACEAE				
Acacia mearnsii De Wild.	black wattle	Nat	R	
Canavalia sp.	juv.	Nat	R	<3>
Chamaecrista nictitans (L.) Moench	partridge pea	Nat	R	
Desmodium cf. *intortum* (Mill.) Urb	---	Nat	O	<3>
Indigofera suffruticosa Mill.	indigo	Nat	O	
MALVACEAE				
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	Nat	R	
Malva parviflora L.	cheese weed	Nat	U3	
MYRTACEAE				
Eucalyptus sp.	sm. eucalyptus, dead	Nat.	R	<2,3>†
Psidiuum cattleianum Sabine	strawberry guava	Nat	R	<2>
Psidium guajava L.	common guava	Nat	R	
NYCTAGINACEAE				
Mirabilis jalapa L.	marvel of Peru	Nat	U	
OLEACEAE				
Olea europaea L.	*'oliwa haole*	Nat	R	
PASSIFLORACEAE				
Passiflora sp.	---	Nat	R	<3>
PLANTAGINACEAE				
Plantago lanceolata L.	nrw-lvd plantain	Nat	R	
PORTULACACEAE				
Portulaca oleracea L.	pigweed	Nat	R1	<3>
ROSACEAE				
Rubus argutus Link	pricklyFlorida blackberry	Nat	U	
PROTEACEAE				
Grevillea robusta A. Cunn. ex R. Br.	silk oak	Nat	R	
VERBENACEAE				
Lantana camara L.	lantana	Nat	C	
Verbena littoralis Kunth	*ōwī*	Nat	R	
	ANGIOSPERMS			
	MONOCOTYLEDONS			
POACEAE (GRAMINEAE)				
Bothriochloa pertusa (L.) A. Camus	pitted beardgrass	Nat	U	<1>

Table 1 (continued).

Species	Common name	Status	Abundance	Notes
POACEAE (continued)				
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	Nat	U	<1>
Melinus minutiflora P. Beauv.	molasses grass	Nat	R	<2>
Melinus repens (Willd.) Zizka	Natal redtop	Nat	O	<1>
Pennisetum clandestinum Chiov.	Kikuyu grass	Nat	AA	
Sporobolus sp.	rat-tail grass	Nat	U	
indet. grass	---	Nat	U	<3> †

Table 1b. Native and early Polynesian plants

Species	Common name	Status	Abundance	Notes
	FERNS AND FERN ALLIES			
BLECHNACEAE				
Sadelaria sp.	*ʻamaʻu*	**End**	R	<2, 3, 4>
DENNSTAEDTIACEAE				
Pteridium aquilinum decompositum (Gaud.) R. M. Tyron	*kīlau*	**End**	O	
LINDSAEACEAE				
Sphenomeris chinensis (L.) Maxon	*palaʻā*	**Ind**	R1	<2, 4>
NEPHROLEPIDACEAE				
Nephrolepis exaltata hawaiiensis W. H. Wagner	*niʻaniʻau, kupukupu*	**End**	U1	<2>
PSILOTACEAE				
Psilotum nudum (L.) P. Beauv.	*moa*	**Ind**	R	<2, 4>
	ANGIOSPERMS			
	DICOTYLEDONS			
CONVOLVULACEAE				
Ipomoea indica (J. Burm.) Merr.	*koali ʻawa*	**Ind**	U	
OXALIDACEAE				
Oxalis corniculata L.	*ʻihiʻai*	Pol	R	
ROSACEAE				
Osteomeles anthyllidifolia (Sm.) Lindl.	*ʻūlei*	**Ind**	R	
STERCULARIACEAE				
Waltheria indica L.	*ʻuhaloa*	**Ind**	U	

Table 1 Legend

STATUS:

End = endemic; native to Hawaiʻi and found naturally nowhere else.
Ind = indigenous; native to Hawaiʻi, but not unique to the Hawaiian Islands;

Table 1 (continued).

Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.
Pol = introduced to Hawai'i by Polynesian migrants before 1778.

ABUNDANCE:
R – Rare - only one or two plants seen.
U - Uncommon - several to a dozen plants observed.
O - Occasional - found regularly, but not abundant anywhere.
C - Common - considered an important part of the vegetation and observed numerous times.
A - Abundant - found in large numbers; may be locally dominant.
AA - Abundant - very abundant and dominant; defining vegetation type.

Numbers (as in R3) offset occurrence ratings (1 – several plants; 2 – many plants; 3 – abundant in a limited area) in cases where distribution across the survey area may be limited, but individuals seen are more than indicated by the occurrence rating alone.

NOTES:
<1> - Likely far more abundant during wetter periods.
<2> - Associated only or mostly with the shallow gulch.
<3> - Plant lacking diagnostic characteristics (e.g., flowers or fruit) and therefore identification tentative.
<4> - Observed during the survey, but outside of pipeline corridor.
† - No living plants present; identified from dead material.

Fauna

A total of 42 individual birds of nine species, representing eight separate families, were recorded during station counts (Table 2). One of these, Pacific Golden-Plover (*Pluvialis fulva*), is native to the Hawaiian Islands. Pacific Golden-Plover is an indigenous migratory shorebird species. One species detected, chicken (Red Jungelfowl; *Gallus gallus*), is not established in the wild on the Island of Maui. One additional avian species, Ring-necked Pheasant (*Pasinanus colchicus*), was recorded incidentally by the biologists in October. The remaining nine species recorded are all alien to the Hawaiian Islands.

Avian diversity and densities were both very low but in keeping with the depauperate habitats present on the site. Three species, Sky Lark (*Alauda arvensis*), Grey Francolin (*Francolinus pondicerianus*), and Common Myna (*Acridotheres tristis*), accounted for 62% of all birds recorded during station counts. The most frequently recorded species was Sky Lark, which accounted for 33% of the total number of individual birds recorded during station point counts.

Two terrestrial mammalian species were detected during the course of this survey. Scat, tracks and sign of cows (*Bos taurus*) covered the site. Additionally, a cow femur

was encountered. Dogs (*Canis f. familiaris*) were heard barking from both upslope and downslope of the study site. Both of these species are alien to the Hawaiian Islands.

Table 2 – Avian Species Detected Within the Lower Kula Waterline Bypass Site

Common Name	*Scientific Name*	*ST*	*RA*
	GALLIFORMES		
	PHASIANIDAE - Pheasants & Partridges		
	Phasianinae - Pheasants & Allies		
Gray Francolin	*Francolinus pondicerianus*	A	3.00
Red Junglefowl	*Gallus gallus*	D	0.50
Ring-necked Pheasant	*Phasianus colchicus*	A	I
	CHARADRIIFORMES		
	CHARADRIIDAE - Lapwings & Plovers		
	Charadriinae - Plovers		
Pacific Golden-Plover	*Pluvialis fulva*	IM	1.00
	COLUMBIFORMES		
	COLUMBIDAE - Pigeons & Doves		
Zebra Dove	*Geopelia striata*	A	1.50
	PASSERIFORMES		
	ALAUDIDAE - Larks		
Sky Lark	*Alauda arvensis*	A	7.00
	ZOSTEROPIDAE - White-eyes		
Japanese White-eye	*Zosterops japonicus*	A	1.00
	MIMIDAE - Mockingbirds & Thrashers		
Northern Mockingbird	*Mimus polyglottos*	A	2.00
	STURNIDAE - Starlings		
Common Myna	*Acridotheres tristis*	A	3.00
	FRINGILLIDAE - Fringilline and Carduleline Finches & Allies		
	Carduelinae - Carduline Finches		
House Finch	*Haemorhous mexicanus*	A	1.50

KEY TO TABLE 2

ST	Status
A	Alien – Introduced to the Hawaiian Islands by humans
D	Domesticated – Species not considered to be established in the wild on the Island of Maui
IM	Indigenous Migratory – native but not unique to the Hawaiian Islands, does not breed in Hawai'i
RA	Relative Abundance – Number of birds detected divided by the number of count stations (2)
I	Incidental - A species recorded as an incidental observation while transiting between count station

Discussion

The fluvial feature in the Project area is a swale draining only uplands. The "blue-line stream" is not evident in the field in the project area, even as a dry stream. Very infrequent flows in the gulch may well reach Pūlehu Gulch, but this normally dry gulch does not discharge to tidal waters or traditional navigable waters. Pursuant to the joint memorandum based upon the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (USEPA and USACE, 2008), this feature would not be considered waters of the U.S. (that is, it is not jurisdictional).

Biological Resources

The findings of the botanical survey revealed a pasture with minimal floristic resources other than pasture grasses of value to Haleakala Ranch. No doubt, the number of species would be somewhat greater during a wetter period; however, these additional species can be expected to be entirely ruderal weeds and other non-native herbaceous species characteristic of pasture lands at the Project elevation. The gulch presently harbors a greater diversity of plant species, but, owing to its small size and the ready access of ungulates to its bottom and margins, does not harbor a remnant native plant community. A majority of the ferns recorded are associated with a rock face escarpment at the upper end of the survey area.

The findings of the avian survey are consistent with the location of the site and the habitats present. A total of 10 avian species were recorded on the site, nine during point counts and an additional species during the October gulch survey. As previously discussed, one of the species detected is native to the Hawaiian Islands (Table 2). The, Pacific Golden-Plover is an indigenous migratory shorebird species that nests in the high Arctic during the late spring and summer months, returning to Hawai'i and the Tropical Pacific to spend the winter months each year. Golden Plover leave Hawai'i for the trip back to the Arctic in late April or the very early part of May each year. The remaining nine species recorded in our survey are alien to the Hawaiian Islands.

Although no seabirds were detected during this survey, it is probable that both the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened endemic sub-species of Newell's Shearwater (*Puffinus auricularis newelli*) over-fly the project area between April and the middle of December each year. Both species have been recorded flying to and from their nesting colonies located on the mountain *mauka* of the project site (Cooper and Day, 2003, 2004; Day and Cooper, 1999; Hamer Environmental, 2010; Planning Solutions and Rana Biological Consulting, 2010). Both of these pelagic seabird species nest high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*) fern. There is no suitable nesting habitat for either of these seabird species on or close to the Project site.

The primary cause of mortality in the aforementioned seabirds is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered second most as a cause of mortality of these seabird species in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds may collide with man-made structures and, if not killed outright, the dazed or injured birds are easy prey for feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003).

The findings of the mammalian survey are consistent with the location of the property and the habitats currently present in the area. Although no rodents were recorded, it is likely that the some, if not all, of the four established alien Muridae found on Maui—roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mouse (*Mus musculus domesticus*)—use various resources found within the general project area on a seasonal basis. All of these introduced rodents are deleterious to native ecosystems and native species dependent on them.

No Hawaiian hoary bats were detected during the course of this survey. Given the vegetation present on the site, any usage of the area by this species would be of an incidental foraging nature; there are no suitable roosting trees for this species along the route proposed for the pipeline.

Potential Impacts to Protected Species and Critical Habitat

No plant, avian, or mammalian species currently protected or proposed for protection under either the federal or State of Hawai'i endangered species programs were detected during the course of this survey (DLNR, 1998; USFWS; 2005a, 2012a). No federally designated (or recently proposed) critical habitat occurs in the Project area or vicinity (USFWS, 2012b,c). There is no equivalent statute under state law.

Blackburn□s sphinx moth - No Blackburn□s sphinx moths were observed on the site, nor were any native or non-native host plants utilized by the sphinx moth caterpillar recorded. Thus it is not expected that this project will result in any impacts to this listed species.

Seabirds - The principal potential impact that development poses to protected seabirds is increased threat of downing birds disoriented by lights associated with the Project, especially during the nesting season. The two main sources of outdoor lighting could pose a threat to nocturnally flying seabirds: 1) lighting used for nighttime construction and 2) following build-out, the use of security lighting. As neither of these

sources are anticipated for this Project, construction of the waterline will not result in impacts to protected seabird species.

Hawaiian hoary bat - The principal potential impact that development poses to bats occurs during clearing and grubbing when vegetation is removed. The removal of trees within a construction site may temporarily displace individual roosting bats. During the pupping season, females carrying their pups may be less able to rapidly vacate a roost site as trees are felled. Additionally, adult female bats sometimes leave their pups in the roost tree when they forage. Very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15-feet) during the pupping season (between June 15 and September 15). As there is no suitable bat roosting habitat within the Project site, it is not expected that the Project will have any impact to this listed species.

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APPENDIX B-1.

Preliminary Jurisdictional Determination of an Unnamed Gulch for Lower Kula Water System Improvements, Kula, Island of Maui

Preliminary jurisdictional determination of an unnamed gulch for Lower Kula Water System Improvements, Kula, Island of Maui

November 19, 2012
rev. January 17, 2013

AECOS No. 1334A

Susan Burr and Eric Guinther
AECOS, Inc.
45-939 Kamehameha Hwy, Suite 104
Kāne'ohe, Hawai'i 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: aecos@aecos.com

Introduction

In coordination with biological and water quality surveys conducted on October 10 and November 12, 2012, *AECOS* biologists assessed jurisdictional issues of an unnamed gulch on TMK (2) 2-3-04:13 in Kula, Maui. The purpose of the surveys and jurisdictional assessment is to aid in the planning process for the Lower Kula Water Systems Improvements Project. This report supersedes the letter report dated October 24, 2012 (*AECOS*, 2012a) and supplements the biological survey report dated November 15, 2012 (*AECOS*, 2012b) and concludes that the unnamed gulch on the property is likely not jurisdictional with respect to the Clean Water Act and the Rivers and Harbors Act. Determination of jurisdiction is the perview of the U.S. Army Corps of Engineers (USACE) after review of all information available and provided.

Site and Project Descriptions

The Project site is located on Haleakala Ranch pasture land on the northwest face of East Maui Mountain, between Kula Highway and Haleakalā Highway (Fig. 1) at around the 2700-ft elevation. The terrain is sloped, gently rolling with shallow gulches, and located directly upslope of the Kulamalu and Kula Kai residential subdivisions off Lower Kula Road. The site is reached from the upper end of Ka Drive.

The Project (Bypass Waterline for Phase IV Pumping Facilities) involves construction of approximately 1,320 ft of 18-inch waterline between the Kula Kai Booster at 2737-ft and Kula Kai Reservoir at 2774-ft elevation. The route must cross one of the shallow gulches found in the area (Fig. 2), a swale extending to the northwest from the project site along the north edge of Kula Kai subdivision.

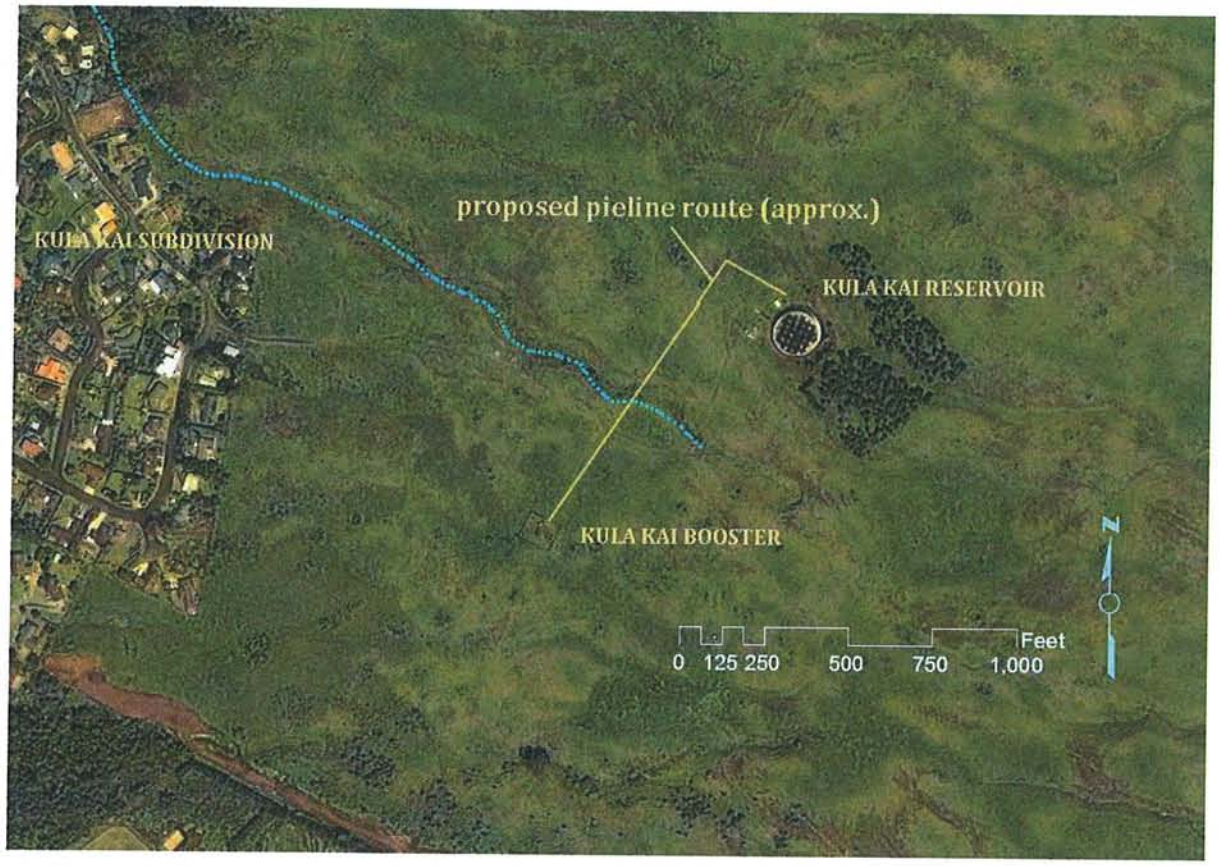

Figure 1. Project area located upslope of Kula Kai Subdivision.

Section 404 of the Clean Water Act (CWA) assigns regulatory authority to the U.S. Army Corps of Engineers (USACE) over certain activities in waters of the U.S.; the Rivers and Harbors Act applies only to "navigable waters " of the U.S., which this gulch is clearly not. If the gulch is considered to be "waters of the U.S." as defined in the CWA and construction of the waterline requires work below the Ordinary High Water Mark (OHWM; bounding limit of federal jurisdiction), the Project would require a Department of the Army permit.

Figure 2. Unnamed gulch in project area (looking downstream from proposed pipeline crossing point) showing no evidence of a stream bed or banks.

The OHWM is defined in the federal regulations [33 CFR 328.3(e); USACE, 1986] as:

> "... the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Methods

The gulch survey on October 10, 2012, involved two biologists walking upslope in or along the gulch from Kula Kai Subdivision to Haleakalā Highway, then visiting the gulch downslope where it crosses Lower Kula Road and, further down, Kula Highway. Within this survey area, the following physical characteristics—as provided in a

regulatory guidance letter (USACE, 2005)—were considered in an attempt to establish an OHWM for the fluvial feature:

Natural line impressed on the bank	Leaf litter disturbed or washed away
Shelving	Scour
Changes in the character of the soil	Deposition
Destruction of terrestrial vegetation	Multiple observed flow events
Presence of litter and debris	Bed and banks
Wracking	Water staining
Vegetation matted down, bent, or absent	Change in the plant community
Sediment sorting	

Results

A single, unnamed gulch[1] is present in the area where the proposed water line crosses (to be trenched typically 3 ft under the existing surface). This feature originates on the slopes of East Maui Mountain, upslope of Haleakalā Highway around the 3600-ft elevation, becomes a nearly imperceptible feature adjacent to the Kula Kai Subdivision, downslope from the Project site (Fig. 3), and appears to merge with the surrounding landscape down from Lower Kula Road (Fig. 4). Flow is directed through culverts under Lower Kula Road (Fig. 5).

The gulch was dry during both of our surveys. As an indication of how little flow is generated locally, a house (on Mano Drive) has been built at the bottom of the next gulch adjacent to the south. Minimal evidence of a bed and banks occurs in the Project area. All of the physical characteristics indicative of the OHWM (see Methods section, above) were considered by the biologists. None of the characteristics was observed and the biologists concluded that the gulch does not have an OHWM in the project vicinity.

The USGS topographic map (USGS, Kilohana Quadrangle, 1983) shows a non-perennial "blue-line stream" arising in the Project area (at the ranch road crossing) and continuing downslope to the 2200-ft elevation some 900 ft below Kula Highway (USGS, 1983; see Fig. 1 and Fig. 6). The gulch can be carefully traced by contours on USGS topographic sheets to the 500-ft elevation where it opens into Pūlehu Gulch. Flow from Pūlehu Gulch eventually dissipates across the Maui Isthmus.

[1] The name Waikapu is associated with this feature in DLNR-DAR (2004), though it likely refers to the larger watershed, which includes streams from both West Maui and East Maui mountains.

Figure 3. Gulch is a nearly imperceptible landscape feature seen here upslope of Lower Kula Road next to houses on Ka Drive.

Figure 4. Apparent gulch "terminus" between Lower Kula Road and Kula Highway.

Figure 5. Drainage flow is directed through two culvert pipes under Lower Kula Road.

Various sugar cane irrigation channels constructed over 100 years ago transport irrigation water across the Maui Isthmus. Water from Pūlehu Gulch may be captured or excluded in this system (Lowrie Ditch crosses Pūlehu Gulch at about the 450-ft elevation). The irrigation system eventually ends with outlets that flow into Kealia Pond at the south end of the Isthmus.

Discussion

The fluvial feature in the Project area is a swale draining only uplands. The "blue-line stream" shown on the USGS topographic quadrangle map (USGS, 1983), is not evident in the field in the Project area, even as a dry stream bed. Very infrequent flows in the gulch may well reach Pūlehu Gulch, but this normally dry gulch does not discharge to tidal waters or traditional navigable waters. Pursuant to the joint memorandum based upon the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (USEPA and USACE, 2008), we would regard this feature as not waters of the U.S. (that is, it is not jurisdictional).

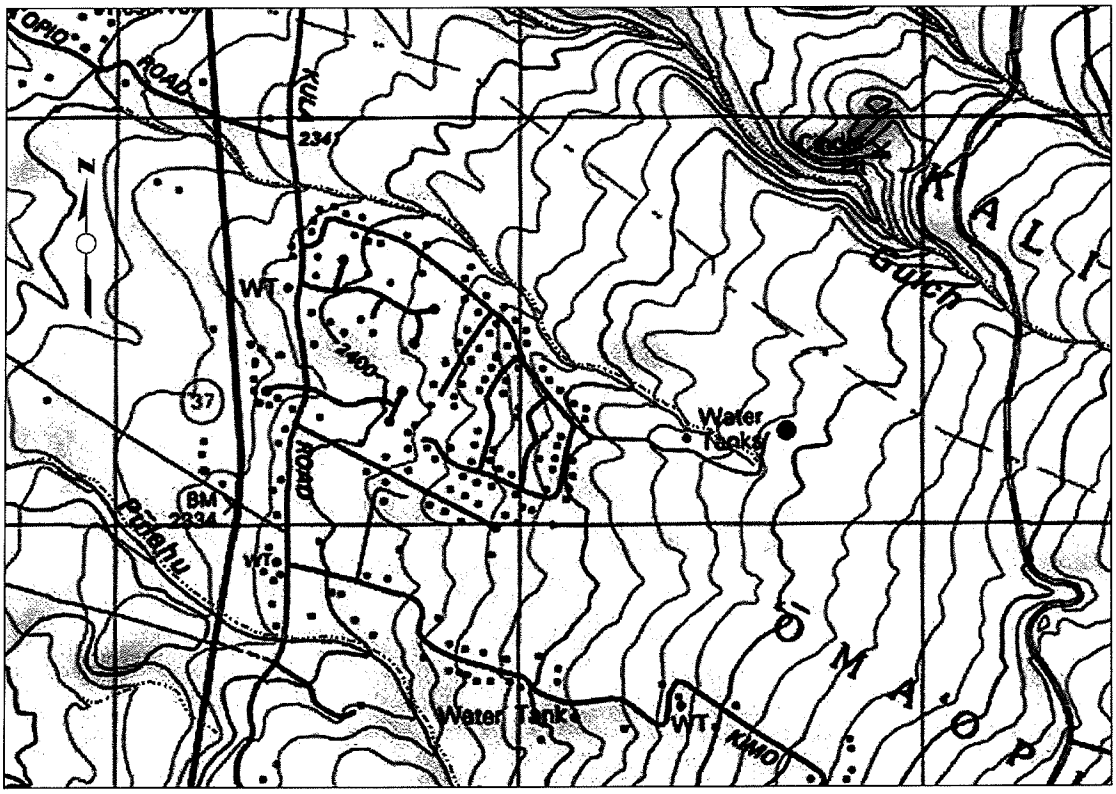

Figure 6. USGS topographic map showing gulch in Project vicinity (with overlay of hydrographic shapefile in blue from USGS, 1983).

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APPENDIX B-2.

USACE Approved Jurisdictional Determination

NOV 21 2012

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

REPLY TO
ATTENTION OF:

November 16, 2012

Regulatory Branch

File Number POH-2012-00249

Munekiyo & Hiraga, Inc.
Attention: Mich Hirano
305 High Street, Suite 104
Wailuku, Hawaii 96793

APPROVED JURISDICTIONAL DETERMINATION
NO PERMIT REQUIRED

Dear Mr. Hirano:

This is in response to your letter dated October 22, 2012 requesting Department of the Army (DA) review and comment on the permitting requirements for the proposed 18-inch Bypass Waterline Installation to support the Lower Kula Water System in Kula, Maui Island, Hawaii. We have assigned the project the reference number **POH-2012-00249**. Please cite the reference number in any future correspondence concerning this project.

We completed our review of the submitted documents pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404). For your information, Section 10 requires that a DA permit be obtained from the U.S. Army Corps of Engineers (Corps) prior to undertaking any construction, dredging, or other activity occurring in, over, or under or affecting navigable waters of the U.S. Section 404 requires that a DA permit be obtained for the discharge (placement) of dredged and/or fill material into waters of the U.S., including wetlands. For non-tidal waters, the lateral limits of the Corps' jurisdiction extend to the Ordinary High Water Mark or the approved delineated boundary of any adjacent wetlands.

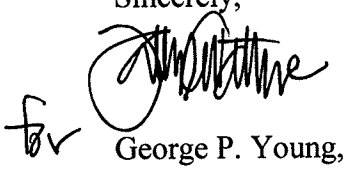
Based on your submitted documents, the proposed waterline appears to cross an unnamed gulch atop concrete pillars. Based on information readily available to our agency, the Corps has determined that the unnamed drainage feature lacks a hydrologic connection to a water of the U.S. therefore, it is not a water of the U.S. subject to Corps regulatory jurisdiction. Accordingly, **a DA permit will not be required for the proposed waterline installation** across the unnamed drainage gulch. This determination does not relieve you of the responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law for your proposed work.

This letter contains an approved Jurisdictional Determination (JD) for the property in question and is valid for a period of five (5) years unless new information warrants revision of the determination before the expiration date. If you object to this determination, you may request

an Administrative Appeal under Corps regulations at 33 Code of Federal Regulations (CFR) Part 331. Should you object to this determination, please notify this office and we will provide you with the informational materials required for an appeal and provide suspense dates based upon the date the appeal information is supplied to you.

Thank you for contacting us regarding this project. Should you have any questions, please contact Ms. Jessie Pa'ahana via e-mail at *Jessie.K.Paahana@usace.army.mil* or at *808.835.4107*. You are encouraged to provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at *http://per2.nwp.usace.army.mil/survey.html*.

Sincerely,



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

APPENDIX C.

Archaeological Assessment Survey Report

An Archaeological Assessment Survey of the Lower Kula Water System Improvements (Bypass Waterline for Phase VI Pumping Facilities) Located in Oma`opio *Ahupua`a*, Makawao District, Island of Maui (TMK (2) 2-3-04: 13 por. And 32)

Prepared on behalf of:

State of Hawai`i
Department of Hawaiian Home Lands

Prepared per the direction of:

R. T. Tanaka Engineers, Inc.
Wailuku, Maui

Prepared by

Xamanek Researches, LLC
Pukalani, Maui

Jennifer J. Frey
Erik M. Fredericksen

30 November 2012

ABSTRACT

Xamanek Researches, LLC conducted an archaeological assessment survey during the month of October and November 2012 on a parcel of land in the Oma`opio area of Kula. The project area is located in Oma`opio *Ahupua`a,* Makawao District, Island of Maui (TMK (2) 2-3-04: 13 por. and 32). This project area is located in the modern district of Makawao, but was part of the traditional district of Kula.

The archaeological assessment survey was performed in advance of scheduled improvements for the Lower Kula Water System Improvements (Bypass Waterline for Phase VI Pumping Facilities). The survey utilized a 100% pedestrian surface walkover of the project area, as well as 5 hand excavated 50 x 50 cm shovel test pits to assess subsurface conditions. Manually excavated soil was screened through $1/8^{th}$ inch wire mesh. The assessment survey did not identify any significant material culture remains within the project area.

Given the location of the project area and the presence of dry land agricultural terracing visible in the general area, precautionary monitoring is recommended during waterline trench excavation. This form of mitigation is recommended, because remnants of subsurface features, cultural deposits and/or human remains are known to be present in this portion of Up Country Maui. A monitoring plan will be prepared for review and comment per anticipated SHPD concurrence that precautionary monitoring take place for this project.

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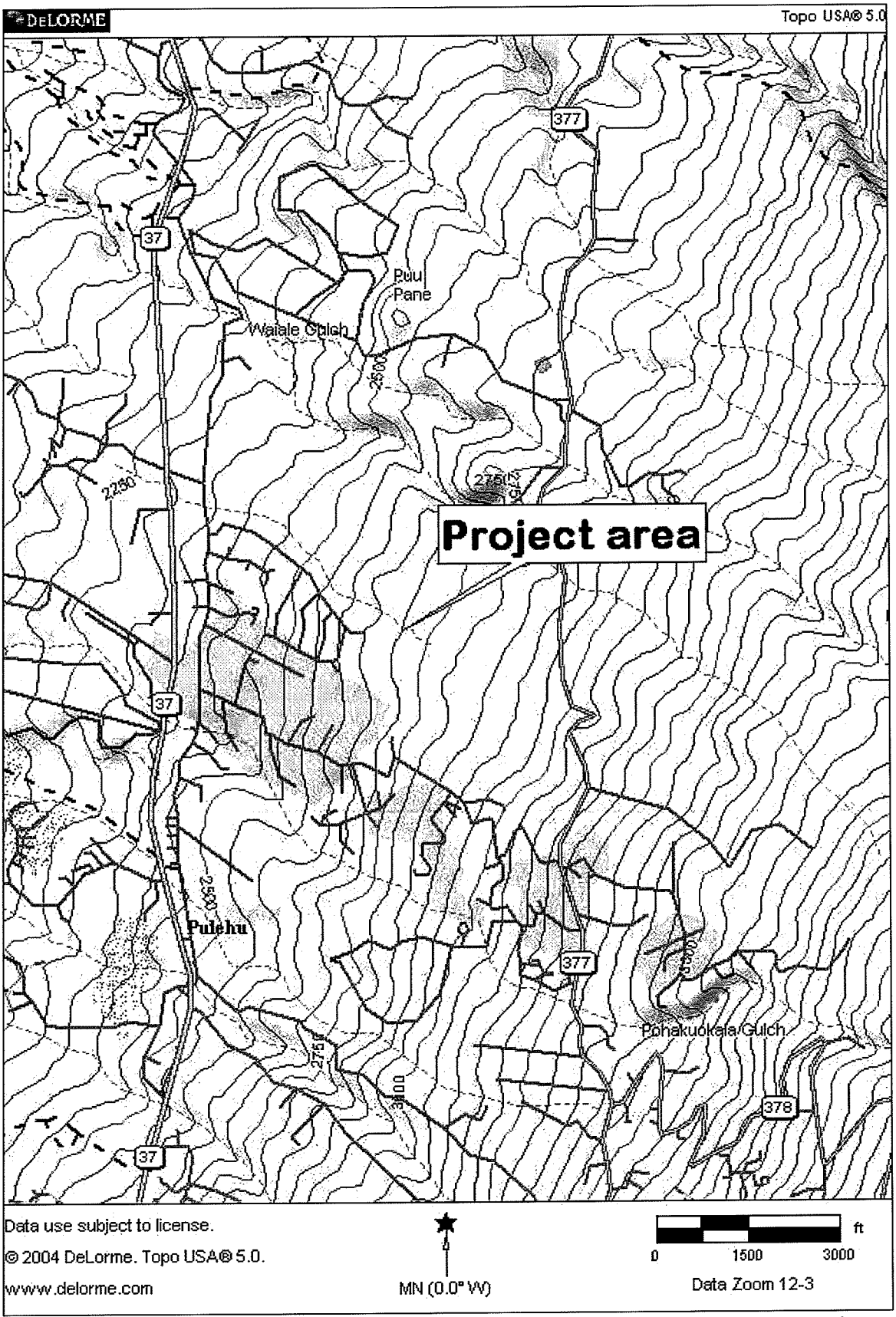

Figure 1: Portion of the 2004 Geological Survey topographic map showing approximate location of the project area.

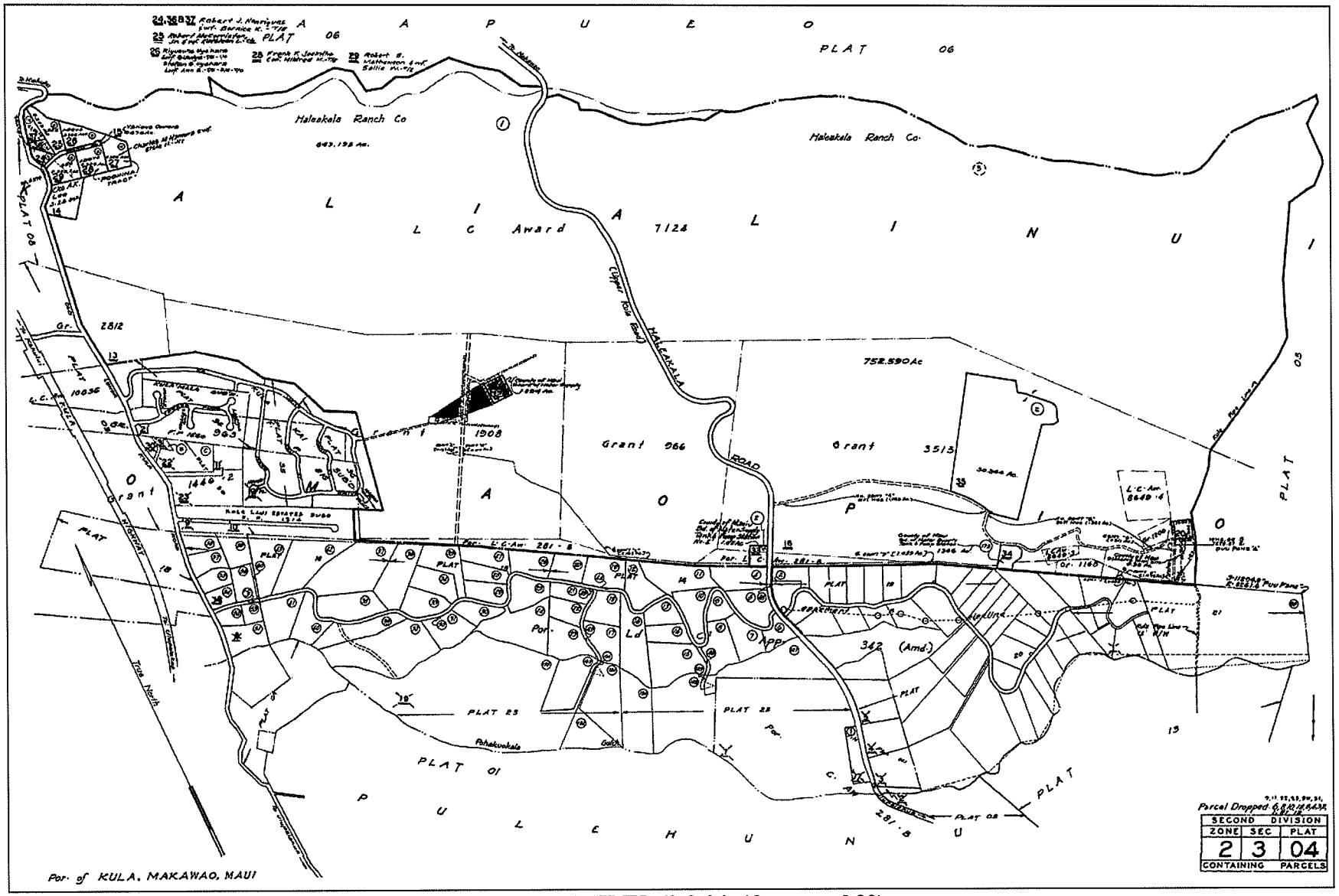

Figure 2: Tax Map Key showing current project area in red, TMK: (2-3-04: 13 por. and 32).

INTRODUCTION

Kirk Tanaka, President, R. T. Tanaka Engineers, Inc. contacted Erik Fredericksen of Xamanek Researches LLC in the summer of 2012 about the need for archaeological work in support of scheduled improvements for the Lower Kula Water System Improvements (Bypass Waterline for Phase VI Pumping Facilities). Given the location of the project area in Kula, Maui, an archaeological inventory/assessment was deemed necessary, because an Environmental Assessment was needed for the overall project. The project area is located in Oma`opio *Ahupua`a,* Makawao District, Island of Maui (TMK (2) 2-3-04: 13 por. and 32; Figures 1 and 2). This project area is located in the modern district of Makawao, but was once a portion of the traditional district of Kula.

This portion of the Lower Kula Water System Improvements project will be carried out on behalf of the State of Hawaii Department of Hawaiian Home Lands (DHHL). The c. 1,500-foot long project corridor was c. 30-feet wide, and contained a previously installed subsurface water line. The current project will install a new, 18-inch diameter ductile waterline, buried with c. 3-feet of cover. The study corridor is located in a portion of an actively grazed pasture within Haleakala Ranch lands. The following archaeological assessment report has been prepared on behalf of the State of Hawai`i Department of Hawaiian Home Lands per the direction of Kirk Tanaka of R. T. Tanaka Engineers, Inc, Wailuku, Maui.

STUDY AREA

The c. 1,100-foot long project corridor crosses existing pastureland. Surface vegetation is dominated by kikuyu grass (Pennisetum clandestinum), and some annual succulent weeds were noted, as well. In addition, clumps of prickly pear cactus or *panini* (Opuntia megacantha) were present near the corridor. The project area ranges from a low of c. 2,750 ft AMSL (Above Mean Sea Level) to a high of c. 2,780 ft AMSL. The project area is located c. 12.5 km inland east northeast of the shoreline.

This relatively arid portion of Maui receives approximately 25-35 inches of annual precipitation, and is fairly typical of the lower Kula region. It falls within the classification of the "Kula slightly dissected upland" physiographic region of our island (University of Hawaii, 1998, pp. 29-32). The underlying bedrock is primarily composed of lava from the Kula series, with occasional outcroppings visible on this parcel. Kula lavas are dated from between 400 and 800 years ago (MacDonald and Abbott, 1970, p. 268). The soils are generally classified as mollisols. They are further identified as the Pu`u Pa-Kula-Pane Association, described as deep, gently sloping to steep and well-drained with a medium or moderately fine-textured subsoil (Foote et al., 1972). These soils are generally powdery in texture and subject to erosion, unless held in place by surface vegetation such as kikuyu grass.

BACKGROUND RESEARCH

Pre-contact period/Early Post-contact Period

In prehistoric times Kula was known for the propagation of *`uala* or sweet potato. The "potatoes were planted in crumbling lava with humus, as on eastern Maui and in Kona....the soil is softened and heaped carelessly in little pockets and patches using favorable spots on slopes....rocky lands in the olden days were walled up all around with the big and small stones of the patch until there was a wall about 2 feet high" (Handy and Handy, 1972). Kula had the combination of good volcanic soil, cool temperatures, arid climate and frequent cloud cover that provided the ideal growing environment for the sweet potato.

The archaeological evidence supports the claims of a considerable population in the Kula area of the early Hawaiians. Walker (1931) recorded many *heiau* in the Makawao district around the 2000 – 3000 ft elevation indicating a large level of human activity. The slopes of Haleakala provided wood for fuel, shelter and canoe building. There were also a large variety of plants used to make medicines and native birds, which were caught for a variety of uses. Residents of Kula travelled downslope to the "coastal zone" in order to exploit the ocean resources (Cordy, 1977). This along with the resources of the upper Kula area made it possible for habitation on the slopes of Haleakala.

The slopes of Haleakala were also well suited for raising pigs. The abundance of *`uala* was ideal for feeding the pigs. Pigs were a supplementary food source, used as sacrifices in elaborate ceremonies and collected as taxes from chiefs. Later, pigs were provided to the sailors entering Lahaina to replenish their food supply.

Post-contact period/Early Historic Period

The Kula District was a relatively minor political territory under the jurisdiction of West Maui Chiefs. It is a relatively arid region with no perennial streams, located on the western slope of Haleakala Crater. The primary resources of the upland area of Kula district were dry forest products, and dry land agricultural products, e.g. sweet potatoes (*`uala*) [Kolb, July 1997, p. 25].

Kula land is described by Handy and Handy (1972, pg. 510) as:

> *"...open country, or plain, as distinct from valley or stream bottom, and has long been used as a term to distinguish between dry, or "kula land" and "wet-taro land". This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams. ...Kula was widely famous for its sweet-potato plantations. `Uala was the staple of life here."*

Within this larger traditional land division (*moku*) there are several long, narrow *ahupua`a* that stretch to the ocean shore. These are shown on Figure 3 below. The study parcel is centrally located in the upper inland portion of Oma`opio *ahupua`a*. Perusal of the Land Commission Awards data reveal a total of 21 claimants for 63 parcels in this *ahupua`a*. Of the parcels claimed, only 16 were awarded to 9 claimants. Interestingly, several of these parcels were awarded for Irish potato and/or sweet potato (*`uala*) production.

Between 1880 and 1910, numbers of Chinese families moved to the general Kula area. These families grew many different crops including Irish potatoes, corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and grains, and even cotton. They also raised pigs, ducks and chickens, which were corn fed because the corn was not very popular with the consumers (Mark, 1975).

The Chinese also grew various vegetables, fruits and flowers in their own gardens near their homes. Most Chinese yards were discernable by Mulberry trees and various types of fruits that they grew for their private use.

By the 1840's, the increased number of whaling ships anchoring off Maui shores created a substantial market for produce such as sweet potatoes and Irish potatoes, which grew well in inland areas of the Kula region. However, Irish potatoes were coveted more highly, and were thus of greater economic importance in the agricultural trade. The Chinese farmers were major providers of the potatoes, which were transported from the Kula fields to the shore, where they were often sold directly to ships that called at Kalepolepo and elsewhere in Makena. From there they were shipped to Lahaina, where the bulk of the whaling fleet was moored.

After the California Gold Rush began in 1848 an Irish potato boom commenced on Maui in the fall of 1849. A trading post was established in 1849 by Captain John Halstead[1] in the village of Kalepolepo on the coast, which allowed him to take advantage of this commercial activity. He built a large Pennsylvania Dutch-style, 3-story residence next to the south wall of Kalepolepo Fishpond. His trading station was located on the first floor of this structure. It was known locally for the Koa House. Halstead's large prominent house stood as a landmark for nearly one hundred years[2]—and was visited by Kamehamehas III, IV and V between 1850 and 1870.

Kuykendall (1938, p. 313) refers to an article in the Polynesian in November of 1849:

> *"The call for [potatoes] is loud and pressing, as some vessels bound for California have taken as many as 1,000 barrels each. The price is high, and the probability is that the market cannot be supplied this autumn. Kula, however, is full of people...preparing the ground for planting, so that if the demand from*

[1] Captain Halstead arrived in Lahaina from New York in 1838, and married the chiefess Kauwikiwikilani Davis, granddaughter of Isaac Davis, Kamehameha's advisor.

[2] In 1946 it was abandoned and was leased by the Kihei Yacht Club, the members of which tried to burn it down because it was so unsafe. Several attempts failed, but eventually the Maui Fire Department was called in and succeeded in reducing it to ashes in August of 1946 (Kolb, 1997, p. 70).

California shall be urgent next spring as it is now the people will reap a rich harvest."

In the 1850s the potato boom died down and much of the land was switched over to ranching. The Chinese then moved down the mountain and began to work in the sugarcane fields. There still remained farming in Kula, but the attention had turned to animal husbandry.

In 1843, construction of a small stone church was begun at Kalepolepo[3] under the direction of David Malo. This gentleman was a native Hawaiian, probably born in 1783 on the Big Island, who moved to Lahaina in the 1820's. He came under the influence of Reverend William Richards and was converted to Christianity. With the establishment of Lahainaluna High School in 1831, he enrolled as one of its first students. In 1843 he was licensed to the Christian ministry, and assigned to a congregation in Kalepolepo. He began construction of Kilolani Church, which continued until 1852. It was completed shortly before the death of David Malo on October 21, 1853. Following his death, his Kilolani congregation dispersed, and never met again at Kaleplepo. A fire is said to have damaged the structure, and a flood in the 1880's also added to the destruction of the little stone church. The ruins of this church are listed on the National Register of Historic Places (Site 50-50-09-1587). Religious services were once again begun at the ruins of this church in 1976. It is known today as "Trinity Church by the Sea".

Another activity in the Kula district was cattle ranching, which had become a booming enterprise by the 1880's. Large sections of land in Lower Kula became pastureland, and large sections of Crown land were leased for grazing acreage. Two large ranches operated in this part of Maui—Ka`ono`ulu Ranch, and Haleakala Ranch.

Haleakala Ranch began as a $50,000 land purchase in 1888, on a joint venture of well-known Hawaii figures Edward H. Bailey, Lorrin A. Thurston, W.H. Bailey and Henry Perrine Baldwin. By 1925 H.P. Baldwin's sons Harry and Samuel were the sole owners of the ranch. It is previously owned by members of the Baldwin Family. It still maintains several thousand cattle on its 32,000 acres.

Ka`ono`ulu Ranch lands to the south of the project area were originally part of an LCA to H. Hewahewa (LCA 8452 made up of 5715 acres), and LCAs 8452: 19 and 20 to A. Keohokaole. In the 1860's, ranch lands were obtained by a young Chinese immigrant, Young Hee, who was forced to return to China in the 1890s in order to settle family problems. At that time, the lands were acquired by William H. Cornwell, and they became the Cornwell Ranch. Harold W. Rice purchased the property in 1916, and it is currently operated by his grandson, Henry Rice, and consists of nearly 9,000 acres in its entirety.[4]

Another smaller ranch was located to the southwest of the project area—Kama`ole Ranch. An article in The Maui News (December 19, 1908) states that Antone F. Tavares of

[3]Halstead's trading post was built nearby.

[4] Ka`ono`ulu Ranch encompasses the entire *ahupua`a* of Ka`ono`ulu, which lies to the south of Oma`opio *ahupua`a*.

Makawao "purchased S. Ahmi's Kamaole Ranch property." It goes on to say that Mr. Ahmi refused a former offer for $9500.00 when he was asking $15,000.00 for it.[5]

The **Maui News** (March 17, 1928) noted:

> *"Senator A.F. Tavares has sold Kama`ole Ranch to Haleakala Ranch for approximately $110,000. For himself he retains the title to the cottage on the place and about 5.95 acres surrounding it...*
>
> *At present there are about 500 head of cattle running over the ranch and the purchasers have an option on this live stock at $30 per head.*
>
> *Kama`ole ranch has an area of approximately 1500 acres. It adjoins the Ulupalakua ranch which is owned by Frank F. Baldwin.*
>
> *Alexander and Baldwin, Ltd., is agent for Haleakala ranch and the purchase of Kama`ole brings together two properties which occupy many thousands of acres of cattle land on the slopes of Haleakala. Kama`ole is to be continued by the purchasers as a cattle ranch."*

Another influence that changed the landscape of this part of Maui was the presence of the military on the island during the Second World War. In 1940, responding to the increased turmoil in Asia, the United States began to prepare for war. The Pu`unene Naval Air Station was built, and over the war years, thousands of military personnel passed through Maui. The terrain of the island was ideal for training men for combat in the South Pacific, as much of it was similar. All types of exercises were conducted—from amphibious landings on the beaches of Kihei (Kalama) and Makena, to the training soldiers on how to find and fight their way through dense sugarcane fields. In mauka areas of Kihei and portions of lower Ulupalakua artillery practice was undertaken in barren areas, away from populated areas. Various concrete bunkers and pill boxes were built in various coastal portions of Maui, as well as the Kula and Olinda areas.[6] After the war, the National Guard took over from the WWII military, and set up a training area at Ulupalakua.[7] Training activities were probably conducted in this area up until about 10 to 20 years ago. A fenced training area at Pu`u o Kali, is still in use.

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[5] Mr. Ahmi was also known as Sun Mei, a notable personage in Kula in the early part of the century. In 1901 he was arrested for stealing cattle, and he sued for false imprisonment a few weeks later. In 1903 he was indicted in a police bribery case, but was later acquitted. He was also involved in civil suits, and tax cases, as well as being outspoken in political matters during 1904 and 1905. By 1906 his property was listed in a sheriff's sale, and sold in 1908 (Bartholomew, 1985).

[6] A number of concrete bunkers are located c. 2 km *mauka* of the Polo Field in a grove of eucalyptus trees just to the southeast of Haleakala Highway above Pukalani.

[7] Personal communication with Ms. Helene Takamoto of the Formerly Used Defense Sites (FUDS) Program, Army Corps of Engineers at Fort Shafter—June 12, 2002.

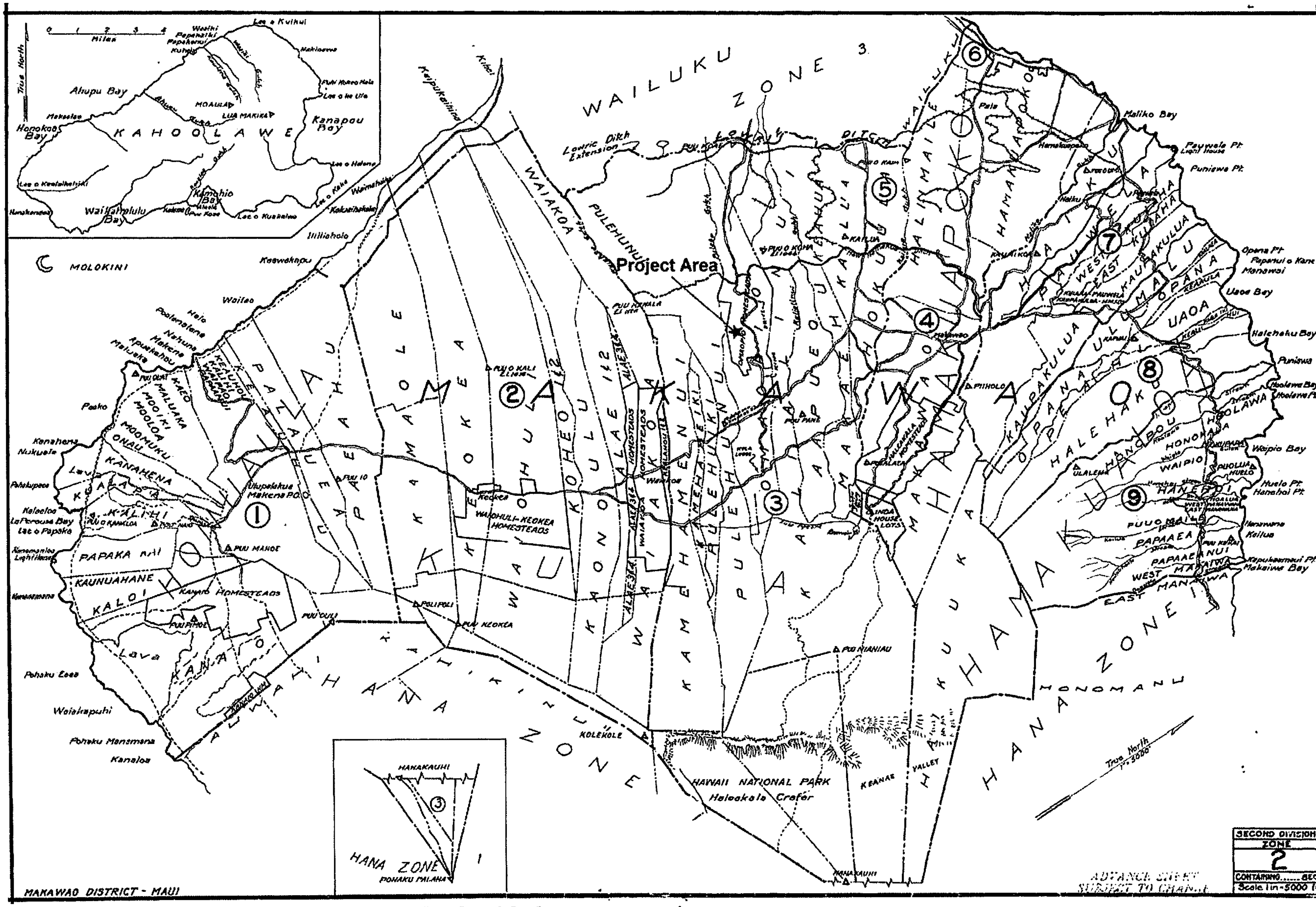

Figure 3: Tax Map Key showing Makawao lands with the current project area.

Previous Archaeological Research

A perusal of previous archaeological investigations in the Makawao District reveals 29 studies, which encompass over 5,500 acres of Kula land. These studies identified nearly 500 sites with over 1500 features, which include permanent habitation features, temporary habitation areas, various agricultural features, human burials and possible burials. The bulk of the post-contact features were comprised of ranch era walls.

Two large surveys were carried out on Department of Hawaiian Homes Lands to the south in Waiohuli and Keokea. The Bishop Museum conducted a survey of c. 800 acres in 1986. A total of 113 sites, composed of 252 features were located (Riford, October 1986). Additional work was recommended and has subsequently been carried out on portions of this land. PHRI conducted an extensive inventory survey of 1,025 acres in DHHL Keokea and Waiohuli subdivisions between 1,800-3,000 ft AMSL in early 1989. A total of 160 sites were identified—108 in Keokea, and 52 in Waiohuli *ahupua`a* to the south. The various site types included habitation and agricultural complexes, enclosures for possible precontact ceremonial uses, ranch-era animal containment features, and human burials (Brown and Haun, 1989).

Kolb et al. (1997) provide the most comprehensive summary of prehistoric chronology, settlement, and subsistence for the general Kula area. The authors' chronology, based on over 200 radiocarbon dates, gives a mid-precontact time frame for upland temporary and permanent habitation of 1200-1400 AD.

These large upland surveys reported a substantial number of archaeological features. These large scale studies provide evidence of extensive habitation and agricultural activity from 2,000-2800 ft AMSL. Haun and Henry (2000) interpret the late precontact to early post-contact settlement pattern in Kula as follows:

> *"Upland permanent habitation increases markedly in the 1500's and 1600's and coincides with the development of agricultural field systems and heiau construction and use. During the 1660's and 1700's, the upland settlements continued to expand and are believed to have supported the largely external chiefly political economy through intensified production of pigs."*

It is interesting to note that Kolb et al.'s (1997) analysis of upland residential sites suggests that the Kula area was primarily utilized by commoners and low-ranking chiefs. An earlier study carried out by Cordy (1977) postulated this form of settlement.

Oma`opio

Winslow Walker carried out the first island-wide assessment of notable sites on Maui in 1929-1930. Walker (1931) identified 23 *heiau* and an L-shaped enclosure within the general Kula area. Three of these Walker reported *heiau* are found in the adjacent Pulehunui *Ahupua'a* to the south, and four are located in Oma`opio *Ahupua`a*. The various *heiau* within Oma`opio are Mahia (Walker Site 226), Mana (Walker Site 225), Moomuku (Walker Site 224), and Poohinahale (Walker Site 227) *Heiau*. Of these ceremonial structures, only Mana *Heiau* has been

issued a SHPD site number—SIHP[8] No. 50-50-10-1057. This *heiau* was used as an interment area for post-contact burials. Former SHPD Maui staff archaeologist Theresa Donham (1992) notes that the presence of at least four identified *heiau* in Oma`opio *ahupua`a*, suggests that there was a relatively large permanent population in this portion of the island.

According to Donham (1992), two petroglyph sites have been previously identified within Oma`opio *ahupua`a*. The Upper Pulehu Gulch Petroglyphs, designated Site 50-50-11-1267, are located in the upper portion of the *ahupua`a* in this gulch. The site is located along the streambed near a dry waterfall and plunge pool. Site 1267 is composed of a small rock overhang shelter, a platform, 15 pictographs, and about 140 petroglyphs.

A second petroglyph complex, Site 50-50-11-1268, was partially documented in 1973 during the statewide inventory that was carried out at the time as part of the State of Hawaii inventory of Historic Places (Tulchin et al., 2003). A small rectangular enclosure (Site 50-50-11-1349), was first recorded in by Elspeth Sterling of the B. P. Bishop Museum in 1966 (Donham, 1992). This possible agricultural shrine is located along the edge of Pulehu Gulch. Both these sites have since been relocated and designated for preservation (Folk, 1993).

As SHPD Maui staff archaeologist, Donham (1992) conducted a surface survey of the 9-acre Koyanagi Subdivision in upper Oma`opio. Five sites were located during her walkover of the parcel. The documented sites included three ranch era rock walls, an agricultural rock clear pile, and 12 petroglyphs that were located along the southern slope of an unnamed gulch to the south of Oma`opio Road. These petroglyphs include images of human and abstract figures as well as two modern figures.

Fredericksen and Fredericksen (1992a) conducted an inventory survey of a 4-acre parcel of land in upper Oma`opio. This project was carried out in a largely developed neighborhood and identified one feature, a World War II era concrete bunker. This structure was about 1 ft (30 cm) thick by 14 ft (4.3 m) in width by 43 ft (by 13.1 m) in length. A second inventory survey of a largely impacted 7.2 acre property did not yield any material cultural remains (Fredericksen and Fredericksen, 1993).

In more recent times, there have been three inventory surveys carried out to the west of the project area in lower Oma`opio. The first of these surveys was conducted in 2000 and represents the first large-scale inventory survey carried out in the Oma`opio area. This inventory survey examined a 71-acre parcel in the lower portion of the *ahupua`a*. A total of 10 sites were identified, including 34 components made up of agricultural rock clear piles, several ranch era walls, an earthen water control ditch, two ranch era complexes, two sites with concrete foundations, and two precontact petroglyph panels in Pulehu Gulch (Haun and Henry, 2000).

Wilson and Dega (2004) carried an inventory survey of a 60-acre parcel in the lower Oma`opio area. The survey documented six new sites, including three ranch era rock walls and a group of agricultural rock clear piles. The two precontact sites consisted of a C-shaped enclosure, interpreted as a temporary habitation area, and a previously unrecorded agricultural *heiau* (Site 50-50-10-5533).

[8] **SIHP** = State Inventory of Historic Places

A more recent inventory survey carried out in the lower portion of Oma`opio *ahupua`a* was conducted in 2005. This survey examined a c. 40-acre portion of land and documented nine new sites (Chun, et al, 2005). Site types included two petroglyph groups, three probable precontact rock overhang shelters with modifications, and four ranch era sites.

In 2005 three newly identified sites were located on a parcel in Oma`opio in Makawao District (Fredericksen, Madeus, April 2006). These sites consisted of agricultural features with one possible ceremonial feature. A preservation plan was scheduled and in place preservation was recommended at that time. No further testing was conducted and a monitoring plan was deemed appropriate.

An archaeological inventory survey was conducted recently on a parcel of land c. 1 km southeast of the current project. The AIS identified one historic post-contact agricultural site dating to at least the 1940's-era. This site contained a roadbed and terracing rock walls. No Hawaiian precontact material was located (Frey, Fredericksen, 2012, Draft in process).

Settlement Patterns

The study area lies in the region that Cordy (1977, p. 11) classifies as the "upland field zone" of settlement. He also notes "Kula was not a political center on Maui; the ruler and high chiefs lived in other more productive lands (i.e., Hana, Lahaina, and Wailuku). Thus, at any one point in time in late prehistory...residents seem to have been commoners, with one resident low chief" (Ibid., p. 11). Finally, Cordy points out that temporary habitation sites tend to relatively rare in agricultural fields because these areas were within easy walking distance to permanent habitation sites. Instead, temporary habitation areas consisted of small rock shelters or overhangs, or small surface structures such as C-shaped enclosures, which were located in other areas (Ibid., p. 11-12).

Expected Findings

Ranching and post-contact agricultural activities have impacted portions of Oma`opio and the greater Kula area. It is interesting to note that the Irish potato boom in the mid-1800s brought about the adaptive reuse and/or expansion of traditional Hawaiian dry land field systems in the Kula area. Based on our background research and the types of Land Commission Awards in the general vicinity of the project area, the expected findings could include possible precontact dry land agricultural site remnants, and/or temporary habitation site remnants, possibly containing associated human burials. In addition, post-contact agricultural site remnants and/or house sites could be present. Finally, ranch-era sites such as walls could also be expected on the project area.

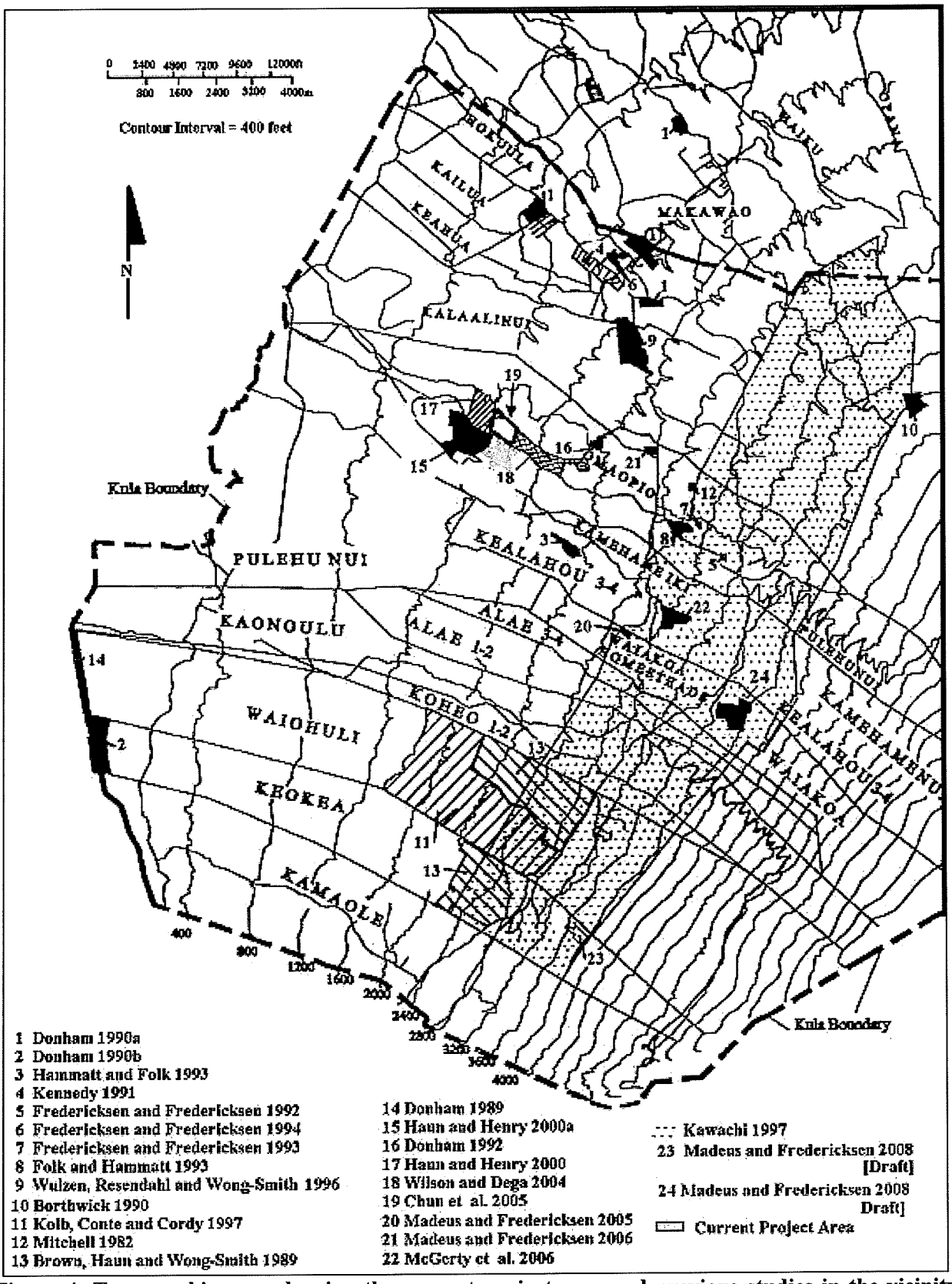

Figure 4: Topographic map showing the current project area and previous studies in the vicinity (adapted from Haun and Henry: 2000).

FIELD METHODS

Xamanek Researches, LLC conducted an archaeological inventory survey of the project corridor in October and November 2012 on a portion of land in Oma`opio *Ahupua`a,* Makawao District, Island of Maui (TMK (2) 2-3-04: 13 por. and 32). The project area is in the modern district of Makawao, but was part of the traditional district of Kula. The project area was covered by a 100% pedestrian surface survey, and assessed by 5 hand excavated 50 x 50 cm shovel units.

Erik Fredericksen conducted the surface survey, and field archaeologist Sam Young, B.A, conducted subsurface testing. Erik Fredericksen (SHPD Permit 12-06) was the project director and principal investigator for this project. The pedestrian survey was conducted on 19 October 2012, and subsurface investigation was completed in early November. A total of 3 field days were expended on the fieldwork for this archaeological assessment survey.

The archaeological investigation consisted of a 100% surface survey and controlled excavation of five 50 x 50 cm square shovel test units (ST's). The pedestrian inspection of the project area was accomplished through systematic sweeps oriented northeast/southwest direction at 5 m intervals. There were no surface sites encountered during this portion of the survey.

Subsurface testing consisted of 5 manually excavated shovel test units. The shovel test units were excavated along the proposed water line route. All excavated material from the shovel test units was sifted through 1/8th inch mesh hardware cloth. There were no significant material culture remains located during subsurface testing.

Following the excavation of the test units, a representative wall from each test unit was hand scraped with a trowel to aid in recording the soil stratigraphy. The wall profile was mapped to scale and described using Munsell soil colors and U.S Soil Conservation Service terminology. Photographs were taken with a digital camera. The completed subsurface tests were backfilled. Field notes and photographs are kept on site at the Xamanek Researches LLC facility in Pukalani, Maui.

Photo 1: Overview of the project area near ST 4, view to the southwest.

Photo 2: Overview of the project area near ST 3, view to the southeast. Note: dry land terracing visible well off the project area, upper center of photo.

RESULTS OF FIELDWORK

This project was undertaken to document all historic properties on the subject parcel along the proposed water line replacement route. A report designed to satisfy SHPD requirements will be submitted for review, prior to the installation of the proposed water line replacement. Previous archaeological studies that were conducted in the area are included in the background section of this report.

The assessment survey did not identify any new archaeological sites. The field archaeologist notes that in the distance there are visible remnants of agricultural terracing off the subject parcel, however, in the immediate vicinity there is no surface evidence of any agricultural activity.

Subsurface testing was undertaken in five locations during the assessment survey along the proposed water line replacement route. The shovel tests were all negative of any cultural or historical material. The subsurface testing results are discussed in the following site description section.

Subsurface Testing Results

Five Shovel Tests (ST's 1-5) were excavated during the archaeological assessment survey to determine the possible occurrence of any historical or cultural material in this area.

ST-1

ST-1 was excavated to a depth of c. 30 centimeters below surface. One stratigraphic layer was encountered in ST-1. Layer I was a sterile soil deposit and was terminated due to the lack of cultural material.

Layer I (0 to 30 cmbs)	2.5YR 5/8, 6/8, red to light red, sticky clay loam, inclusions include roots and angular basalt pebbles; contains no cultural material remains.

There was no cultural material remains discovered in either layers of this TU during excavation.

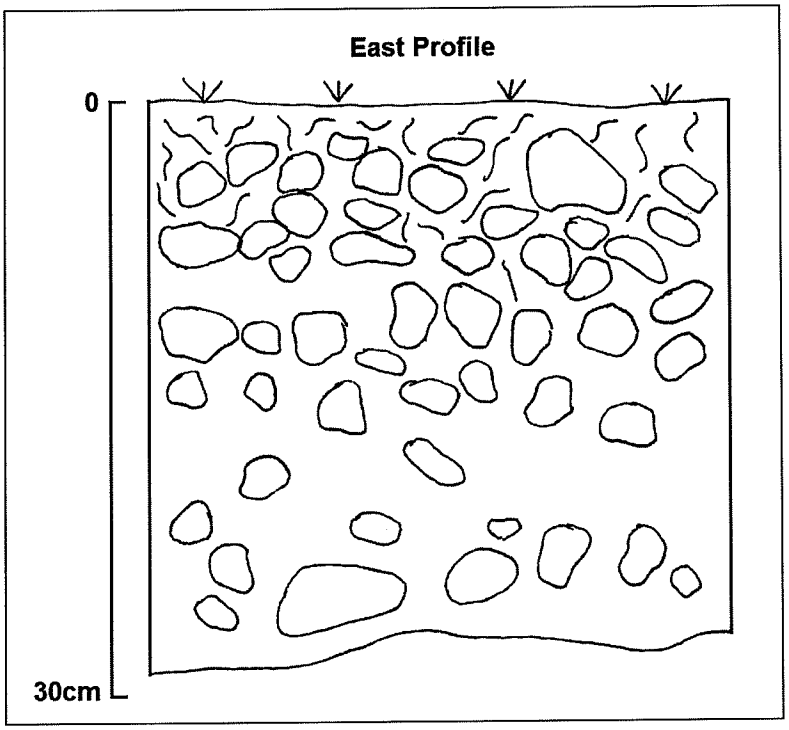

Figure 5: East face profile of ST-1.

Photo 3: Overview of ST-1, view to the east - excavation in process.

ST-2

ST-2 was excavated to a depth of c. 20 centimeters below surface. One stratigraphic layer was encountered in ST-2. Layer I was a sterile soil deposit and was terminated due to the lack of cultural material and rock.

Layer I (0 to 20 cmbs)	2.5YR 5/8, 6/8, red to light red, sticky clay loam, inclusions include roots and angular basalt pebbles; contains no cultural material remains.

There was no cultural material remains discovered in either layers of this TU during excavation.

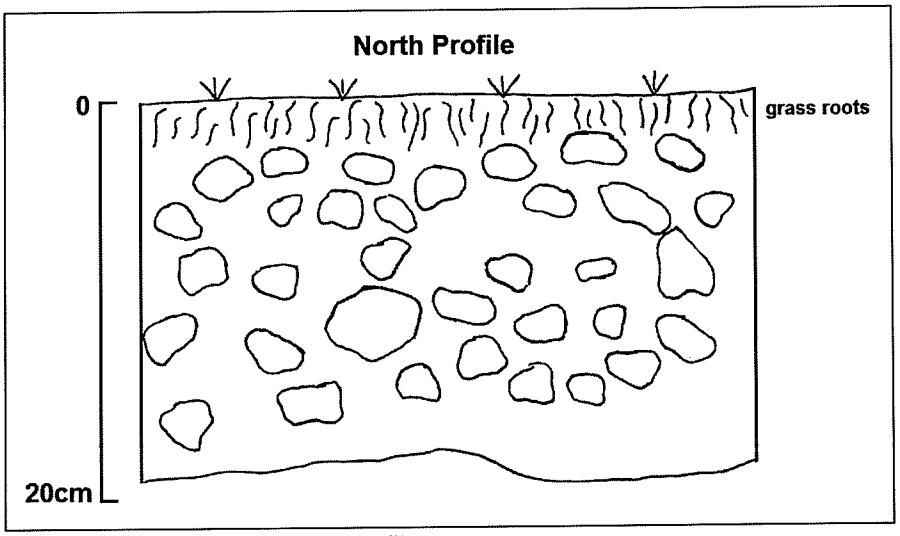

Figure 6: ST-2, north face profile.

Photo 4: Overview of ST-2, view to the northwest - excavation in process.

ST-3

ST-3 was excavated to a depth of c. 30 centimeters below surface. Two stratigraphic layers were encountered in ST-3. Layer I was a sterile soil deposit mainly consisting of the grassy rootlets. Layer II was also a sterile soil deposit. ST-3 was terminated due to the lack of cultural material and rock.

Layer I (0 to 5 cmbs)	2.5YR 6/8, light red, sticky clay loam, inclusions include grass rootlets; contains no cultural material remains.
Layer II (5 to 30 cmbs)	2.5YR 6/9, red, sticky clay loam, inclusions include roots and angular basalt pebbles; contains no cultural material remains

There was no cultural material remains discovered in either layers of this TU during excavation.

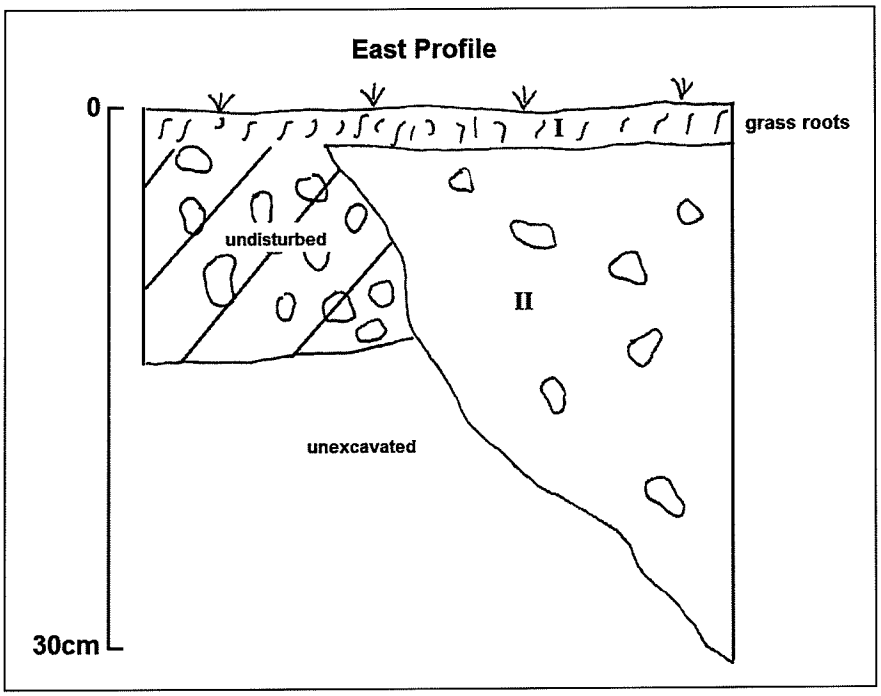

Figure 7: ST-3 east face profile.


Photo 5: Overview of ST-3, view to the east - excavation in process.

ST-4

ST-4 was excavated to a depth of c. 15 centimeters below surface. One stratigraphic layer was encountered in ST-4. Layer I was a sterile soil deposit and was terminated due to the lack of cultural material and rock.

Layer I (0 to 15 cmbs)	2.5YR 6/8, light red, sticky clay loam, inclusions include grass rootlets and angular basalt pebbles; contains no cultural material remains.

There was no cultural material remains discovered in either layers of this TU during excavation.

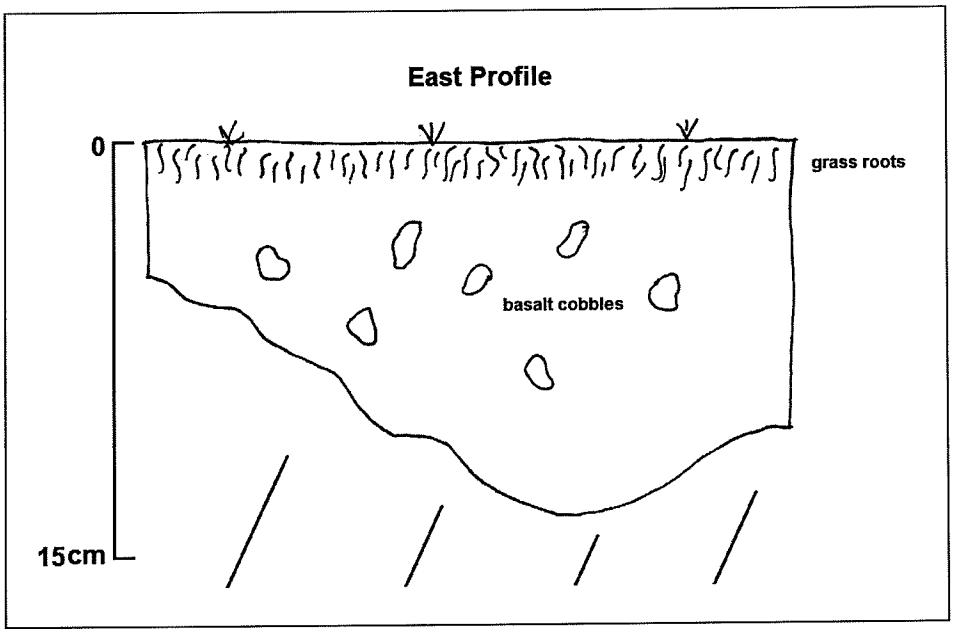

Figure 8: ST-4 east face profile.

Photo 6: ST-4 overview, view to the east - excavation in process.

ST-5

ST-5 was excavated to a depth of c. 15 centimeters below surface. One stratigraphic layer was encountered in ST-. Layer I was a sterile soil deposit and was terminated due to the lack of cultural material and rock.

Layer I (0 to 15 cmbs)	2.5YR 6/8, light red, sticky clay loam, inclusions include grass rootlets and angular basalt pebbles; contains no cultural material remains.

There was no cultural material remains discovered in either layers of this TU during excavation.

Photo 7: ST-5, view to the north - excavation in process.

The shovel tests were systematically laid out along the proposed water line route The shovel tests are discussed below. None of the shovel tests contained any cultural material.

Table 1: Summary for Shovel Tests 1-5

ST#	L x W	Wall profile	Layer	Depth (cm)	Layer descriptions	Cultural materials
ST-1	50x50cm	East face	I	0-30 cm	2.5YR, 5/8, 6/8, red to light red, sticky clay loam; inclusions include roots and angular basalt pebbles; contains no cultural materials	No cultural material remains discovered.
ST-2	50x50cm	North face	I	0-20 cm	2.5YR, 5/8, 6/8, red to light red, sticky clay loam; inclusions include roots and angular basalt pebbles; contains no cultural materials	No cultural material remains discovered
ST-3	50x50cm	East face	I	0-5 cm	2.5YR 6/8, light red, sticky clay loam; inclusions include grassy rootlets and angular basalt pebbles; contains no cultural materials	No cultural material remains discovered.
			II	5-30 cm	2.5YR 6/9, red, sticky clay loam; inclusions include roots and angular basalt pebbles; contains no cultural materials	No cultural material remains discovered.
ST-4	50x50cm	East face	I	0-15 cm	2.5YR, 5/8, 6/8, red to light red, sticky clay loam; inclusions include roots and angular basalt pebbles; contains no cultural materials	No cultural material remains discovered.
ST-5	50x50cm	North face	I	0-15 c m	2.5YR, 5/8, 6/8, red to light red, sticky clay loam; inclusions include roots and angular basalt pebbles; contains no cultural materials	No cultural material remains discovered.

Discussion

In general, two stratigraphic layers were noted during the subsurface testing along the proposed water line replacement route of the study area. The stratigraphic layers are similar across this tested area. All shovel tests were sterile and did not yield any cultural material, which suggests that this area may have been heavily impacted by post-contact activities associated with pasture development and maintenance, and/or the prior installation of the existing waterline that is located within the project corridor.

SUMMARY AND CONCLUSIONS

The results of this archaeological assessment survey of the project area generally conform to expectations derived from historical and archaeological background research. Predictions included the identification of traditional Hawaiian agricultural sites as well as post-contact agricultural and animal husbandry features. However, no sites were encountered. While there were no surface archaeology sites noted along the proposed water line replacement route, dry land rock faced terraces were noted c. 750 m upslope to the southeast of the project corridor.

The absence of sites on the project area may simply be related to the location of the project area and/or previous land alteration activities related with pasture development and maintenance, and/or prior waterline construction disturbance. As previously noted, the project is located on a portion of Haleakala Ranch, and is actively for grazing.

SITE SIGNIFICANCE AND RECOMMENDATIONS

Significance Evaluations

The following significance evaluations are based on the Rules Governing Procedures for Historic Preservation Review (DLNR 1996; Chapter 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling and association and shall meet one or more of the following criteria:

Therefore, the archaeological site assessed during this current inventory survey subject to the broad criteria established for the State and National Register of Historic Places.

- Criterion "a"—Be associated with events that have made an important contribution to the broad patterns of our history;
- Criterion "b"—Be associated with the lives of persons important in our past;
- Criterion "c"—Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- Criterion "d"—Have yielded, or is likely to yield, important information for research on prehistory or history;
- Criterion "e"—Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts.

The archaeological assessment survey discussed in this report was designed and completed to meet DLNR-SHPD requirements for a permit for the water line replacement. While no sites were identified during the assessment survey, rock faced dry land terracing was visible c. 750 m upslope and to the southeast of the project corridor.

Recommended Treatment

The archaeological assessment survey discussed in this report was designed and completed to meet DLNR-SHPD requirements in advance of an environmental assessment for the proposed water line improvements. Given that remnants of significant material culture remains could be located in untested portions of the project area, precautionary monitoring is recommended.

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APPENDIX D.

Cultural Impact Assessment Interviews

PROPOSED DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL) LOWER KULA WATERLINE CULTURAL IMPACT ASSESSMENT

Interview with: Angus Kealoha Peters

Interviewed by: Mich Hirano, AICP, Senior Vice President
Munekiyo & Hiraga, Inc.

The cultural impact assessment interview with Angus Kealoha Peters was held at his home in the Waiohuli subdivision on November 10, 2012.

Angus Kealoha Peters was born in the Paia Hospital. His father was George Peters Ferreira of Portuguese descent . His father was born in Honolulu and moved to Maui to work. His mother was Hellen Kululoio, a native Hawaiian born on Maui. Angus has three (3) brothers and an older sister. The family lived in the Paia plantation "Japanese camp". Angus attended Kihei School and graduated from Lahainaluna High School. Angus worked for 20 years in Pearl Harbor as an electrician with the federal government. He said his work at Pearl Harbor was his biggest accomplishment and he appreciated the opportunity it gave him to have a skilled job and career. He worked on the maintenance of the nuclear submarines in Pearl Harbor. He moved back to Maui after he finished work at Pearl Harbor. He later became an electrical inspector with the County of Maui for many years. Angus is now honored to work at Kamehameha School, where he talks about daily life to the students.

Angus has been asked by family friends to do funeral services and is often asked to say a "pule" (prayer) at social gatherings before the meal. He says that he is neither a "Kahu" (leader or minister) nor a priest, but talks from the heart. When asked what kind of ceremony he does, he says: "It's a Hawaiian-Portuguese ceremony because that is who I am". He attends Keawalai Congregational Church in Makena, where the Kukahiko family lived. The Keawalai Church was his mother's church and she is buried in the Keawalai cemetery. Angus is a very warm and generous person and he lived on the family property in Makena for many years. During the time he lived there he would take care of the land. He said over one hundred thousand (100,000) people visited the

land while he lived at Makena. During the interview, Angus brought out a beautiful oil lamp. The lamp is over 100 years old and holds a special meaning to Angus. When he put it on the table, he got very emotional. He said it was given to him by the owner. It was in her family for many generations and passed to her for safe keeping. She presented the lamp to Angus with the words, "You are now the keeper of the light". No doubt, the lamp was given to Angus in recognition of his generous spirit and care for the land.

Angus' familiarity of the project area comes from the time he was a young boy working on the farms along Omaopio Road and from his work with the County of Maui. Angus particularly recalled when he was around 14 or 15 years old, he worked on the farm that was leased by George Tam. He would feed the cows and help pick vegetables. He often would not get paid wages for his work, but was given food. He remembers that Omaopio area had lots of farmers and he used to eat sweet potato and corn. He was taught to eat everything that was put on the table and to show respect for others. He remembers the area as being very dry. He also remembers that all the water meters were by the water tank, and not in front of the farm properties. All the farmers along Omaopio Road had to put their own waterlines from the water meter to their lots. He found this odd, because he also noted that there were stand pipes right next to the farm lots. So, he figured there was a waterline in front of the farm lots, yet all the meters were by the tanks. He later figured this was how the County was saving money by having the farmers put in their own waterline from their water meter. When he was an Electrical Inspector with the County of Maui, one of his jobs was to inspect the electrical system in the Kula Kai Water Tank during construction.

Asked about native Hawaiian cultural practices in the vicinity of the waterline project area, he said he was not aware of any practices around the area. He said recognition of the native Hawaiian culture was not prevalent until the burials were found during the development of the Ritz Carlton Hotel in Kapalua. Native Hawaiian cultural practitioners such as Charlie Maxwell, Dana Naone Hall and his cousin, Leslie Kuloloio, who were knowledgeable of the Hawaiian culture and involved in the preservation of the Ritz Carlton burial site, started to raise awareness of the importance to protect burials and cultural resources. After that, he said, "Things started to pick up culturally". He noted, in the Hawaiian Home Lands' Waiohuli and Keokea subdivisions there are over 35 heiau's. He thinks that they should be preserved and incorporated with the development to make cultural educational programs, "To bring the kids to learn about native Hawaiian ways".

Asked if he had any cultural concerns with the development of the Lower Kula Waterline, Angus said that the contractors should be careful during construction. He thought that the early Hawaiians may have buried their deceased in the mountains. He also believes that there needs to be progress and any cultural issues can be worked out.

In closing he said, "The most important thing, is to show respect and be nice to people."

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PROPOSED DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL) LOWER KULA WATERLINE CULTURAL IMPACT ASSESSMENT

Interview with: Kekoa Enomoto

Interviewed by: Mich Hirano, AICP, Senior Vice President
Munekiyo & Hiraga, Inc.

The cultural impact assessment interview with Kekoa Enomoto was held at the office of Munekiyo & Hiraga, Inc., on November 9, 2012.

Kekoa Enomoto was born in San Francisco in 1946. She is the daughter of Curtis and Nenita Kekoa. Her father was full Hawaiian and born on the island of Oahu. Her mother's maiden name was Maldonado and she was born in Manila in the Philippines. Kekoa has three (3) younger brothers. Her father was a career officer in the U. S. Air Force and as such, the family lived in many places when Kekoa was growing up. Her father retired with the rank of Colonel.

Kekoa attended Kamehameha Schools on O`ahu and that is where she met her husband, Edmund Enomoto, who also was attending Kamehameha Schools. However, she noted when they were attending school, the girls' and boys' campuses were separate. She was the Feature Editor for the Kamehameha Schools' student newspaper and Edmund was the cartoonist. They have been married for 44 years and have a son living on Maui and a daughter living on Oahu.

Edmund was born in Puunene on Maui and Kekoa loved the Upcountry climate and trees. While they lived on O`ahu after they got married, Kekoa and Edmund purchased a lot on Haleakala Crater Road in 1972. They moved to Maui in 1998 and lived at that location until 2006. The property is located just to the east of the waterline project area. In December 2006, Kekoa and Edmund moved to the Waiohuli Homestead subdivision. Edmund taught art at King Kekaulike High School and Kekoa was a Copy Editor and writer for The Maui News. Both are now retired.

Kekoa is active in cultural pursuits and many community groups. She is a Kahuna Kakalaleo (chanter) and went through eleven (11) months of training and underwent "uniki" (graduation) from a Central Maui Halau. Kekoa is a member of Ahahui Kaahumanu (Hawaiian Woman's Society) Wailuku Chapter, a paddler in the Hawaiian Canoe Club, member of the Cultural Advisory Council for the Grand Wailea Resort and a freelance writer for the Office of Hawaiian Affairs (OHA) newspaper. She is also the Secretary for the Hawaiian Home Lands Keokea Farm Lots Association and she started a new DHHL-related organization, Waiohuli Undivided Interest Lessees Association, to seek funding to build the infrastructure for the Waiohuli Undivided Interest lots.

Kekoa mentioned five (5) aspects of cultural significance in the Upcountry area.

1. The Upcountry human *aumakua* (guardian spirit) is the "*`A`apueo*" (owl). The "*kinolau*" (human manifestation) of the "*`A`apueo*" (owl) is the female warrior.

2. There are many petroglyphs in the gulch to the south of the Maui Kamehameha Schools campus. The school campus is about two (2) miles northwest of the Lower Kula Waterline project area. There is one (1) very amazing petroglyph on a high ledge of the gulch which shows a canoe with a crab-cloth sail. Kekoa noted that this is a very striking and powerful image and it is depicted in Tommy Holmes' book, The Hawaiian Canoe.

3. Kekoa noted that archaeologists told her that the carbon dating of some of the artifacts found during the archaeological investigation of the Keokea Farm Lots were dated to the year A.D. 600. These were the oldest dates on Maui for carbon dated artifacts, they said.

4. It was told by Rubellitte Kawena Johnson, Professor Emeritus of Hawaiian Studies at University of Hawaii, Manoa, that a large Ulua (fish) skeleton was found Upcountry and also many fishhooks. Rubellitte conjectured the early Hawaiians living on the coast would trade fish for Upcountry produce such as sweet potato and fishhooks would be made from the fish bones.

5. There is a Rain Koa (shrine) or Heiau above the Kula Hospital. It's an indication that there would be water in the area of the koa or heiau. She mentioned past references to the sandalwood forests in the Upper Kula area. The Upcountry Polipoli forests would also indicate an abundance of rain. Kekoa was told by David Craddick, a past Director of the Department of Water Supply, that DHHL should dig a well above Keokea because he thought there would be a good source water in the area.

Having talked about the significant cultural aspects of the Upcountry area, Kekoa said that she is not aware of any cultural practices in the specific vicinity of the Lower Kula Waterline project area. She noted that her halau uses areas closer to Crater Road, where she used to live, to gather plants and greenery for their ceremonies. In regards to specific concerns for the project, Kekoa noted that, although not directly related, when Maui County wanted to develop an agricultural waterline in Kula, they used DHHL lands in Keokea as a justification to get funding for the waterline. Therefore, Kekoa feels that the agricultural waterline should be extended to the DHHL homestead agricultural lots so they can farm on the land.

In response to the question, "If the project proceeds, what cultural concerns should be considered in the development plans?", Kekoa said, "native Hawaiian protocol should be followed and the project, crew and land should be blessed with ti leaves, salt and water". She said, "it will facilitate the project".

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APPENDIX E.

Department of Water Supply Memo Dated May 30, 2001

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
P. O. BOX 1109
WAILUKU, HAWAII 96793-7109
TELEPHONE NO. (808) 270-7835
FAX NO. (808) 270-7833

FAX TRANSMITTAL

DATE: May 30, 2001

TO: TANAKA ENGINEERS FAX NO. 2447287

Attention: Kirk Tanaka PHONE # 2426861

Subject: Kula Residence Lots, Unit I SD 95-49
Kula Kai Booster Pump Station

No. of pages (including this transmittal): 1

REMARKS:

Our department has reviewed your May 17, 2001 facsimile and have the following response:

1) The booster pumps output capacity currently provided (4900 gpm) will be acceptable subject to items 2 and 3 below.
2) A waterline between the Kula Kai tank and the phase 6 pumps near the Kula Kai tank site shall be installed. This will separate the suction lines of the new DHHL booster and the existing phase 6 booster. This should solve the cavitation problem that occurs with the present piping.
3) Provide the factory supplied NPSH data for the booster pump installed.
4) The flow limiter proposed is not acceptable to our department. Item number 2 above is the solution for the stopping the cavitation.

Transmitter: Herbert Chang

Note: If you have not received all of the pages, please call (808) 270-7835.

TOTAL P.01