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GOVERNOR



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SEP 23 2016

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IN REPLY REFER TO:
HWY-DD 2.2079

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

August 30, 2016

TO: SCOTT GLENN, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: FORD N. FUCHIGAMI
DIRECTOR OF TRANSPORTATION

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT
FOR KAUMUALII HIGHWAY, HANAPEPE RIVER BRIDGE
REPLACEMENT, PROJECT NO. HI STP SR50(1)
WAIMEA DISTRICT, ISLAND OF KAUAI
TMKS: [4] 1-9-007:001 (POR.) HANAPEPE RIVER, 013 (POR.), AND 034
(POR.); AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.);
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

OFC. OF ENVIRONMENTAL
QUALITY CONTROL

16 SEP -8 P 1:51

RECEIVED

With this letter, the Department of Transportation hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the Hanapepe River Bridge Replacement Project in the Waimea District on the island of Kauai for publication in the next available edition of the *Office of Environmental Quality Control (OEQC) Environmental Notice*.

We have included copies of comments and responses that were received during the 30-day public comment period on the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI). Enclosed is a completed OEQC Publication Form, one hardcopy of the FEA-FONSI, a PDF file of the same, and the publication form in MS WORD.

Should you have any questions, please call Christine Yamasaki of our Design Section, Design Branch, Highways Division at (808) 692-7572 or email at christine.yamasaki@hawaii.gov and reference letter number HWY-DD 2.2079 as noted above.

Enclosures

cy/

c: Thomas Parker (FHWA-CFLHD), Kathleen Chu (CH2M HILL)

bc: HWY-DD(CY)

17-103

**AGENCY
PUBLICATION FORM**

FEB 23 2016

Project Name:	Hanapepe River Bridge Replacement, Kaunualii Highway, State Route 50, Island of Kauai
Project Short Name:	Hanapepe River Bridge Replacement
HRS §343-5 Trigger(s):	Use of State lands and funds
Island(s):	Kauai
Judicial District(s):	Waimea
TMK(s):	[4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por., and [4] 1-9-010: 014 por., 015 por., 046 por., and 050 por., Kaunualii Highway and Iona Road Rights-of-Way
Permit(s)/Approval(s):	Department of the Army Permit (Clean Water Act Section 404 and Rivers and Harbors Act Section 10), U.S. Army Corps of Engineers Section 408 Approval, Section 401 Water Quality Certification, Stream Channel Alteration Permit, National Historic Preservation Act Section 106/HRS 6E Consultation, Endangered Species Act Section 7 Consultation, Essential Fish Habitat Consultation, Coastal Zone Management Act Consistency Review, National Pollutant Discharge Elimination System Permit, Occupancy and Use of State Highway Right of Way Permit, Community Noise Permit/Variance, Grading/Grubbing/Stockpiling Permit
Proposing/Determining Agency:	State of Hawaii, Department of Transportation
Contact Name, Email, Telephone, Address	Christine Yamasaki christine.yamasaki@hawaii.gov 808-692-7572 601 Kamokila Boulevard, Room 609 Kapolei, HI 96707
Accepting Authority:	(for EIS submittals only)
Contact Name, Email, Telephone, Address	
Consultant:	CH2M HILL (under contract to Federal Highway Administration, Central Federal Lands Highway Division)
Contact Name, Email, Telephone, Address	Kathleen Chu kathleen.chu@ch2m.com 808-440-0283 1132 Bishop Street, Suite 1100 Honolulu, HI 96813

Status (select one) DEA-AFNSI FEA-FONSI FEA-EISPN Act 172-12 EISPN
("Direct to EIS") DEIS**Submittal Requirements**

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.

Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.

Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a

searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.

- FEIS Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
- FEIS Acceptance Determination The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
- FEIS Statutory Acceptance Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
- Supplemental EIS 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 or is not required; no EA is required and no comment period ensues upon publication in the Notice.
- Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.
- Other Contact the OEQC if your action is not one of the above items.

Project Summary

Provide a description of the proposed action and purpose and need in 200 words or less.

The State of Hawaii Department of Transportation proposes to replace the Hanapepe River Bridge on the island of Kauai. This project would replace the existing three-span structure with a slightly longer and wider three-span bridge that would accommodate two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks. A temporary two-lane bypass route would be provided on the *mauka* (mountainward) side of the highway throughout construction. The project also includes scour protection, supporting walls and slopes, utility relocations, and temporary staging areas. This project is needed to maintain mobility for highway users, address existing structural deficiencies, and meet current design standards for roadway width, load capacity, barrier railing and transitions, and approach roadways.

This project would not result in significant adverse impacts to protected plant and animal species. The proposed bridge railings and an arched substructure are intended to reflect the aesthetics and historic character of the existing bridge such that impacts to historic and visual resources would be less than significant. Because highway capacity would not increase, the project would not result in secondary or cumulative effects on land use or population growth. Short-term construction impacts, such as noise, dust, and erosion, would be mitigated through best management practices.

FINAL ENVIRONMENTAL ASSESSMENT

Hanapepe River Bridge Replacement, Kaumualii Highway, State Route 50, Island of Kauai, Hawaii

Project No. HI STP SR50(1)

TMKs: : [4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por.,
and 1-9-010: 014 por., 015 por., 046 por., and 050 por.
Kaumualii Highway and Iona Road Rights-of-Way

Submitted Pursuant to Hawaii Revised Statutes, Chapter 343



State of Hawaii, Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, HI 96813

September 2016

**HANAPEPE RIVER BRIDGE REPLACEMENT PROJECT
KAUMUALII HIGHWAY
Project No. STP SR50(1)
Kauai, Hawaii**

**Final Environmental Assessment/
Finding of No Significant Impact**

Submitted Pursuant to
Hawaii Revised Statutes, Chapter 343

State of Hawaii, Department of Transportation, Highways Division

8.29.16
Date of Approval


For State of Hawaii, Department of Transportation

Ford N. Fuchigami, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, HI 96813
Ph. (808) 587-2150

This Final Environmental Assessment (FEA) documents impact studies of proposed improvements to Hanapepe River Bridge on Kaumualii Highway (crossing Hanapepe River at approximately Milepost 16.6) in the Waimea District on the island of Kauai.

This project would replace the existing three-span structure with a slightly longer and wider three-span bridge that would accommodate two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks. A temporary two-lane bypass route would be provided on the *mauka* (mountainward) side of the highway throughout construction. The project also includes scour protection, supporting walls and slopes, utility relocations, and temporary staging areas. This project is needed to maintain mobility for highway users, address existing structural deficiencies, and meet current design standards for roadway width, load capacity, barrier railing and transitions, and approach roadways.

This project would not result in significant adverse impacts to protected plant and animal species. The proposed bridge railings and an arched substructure are intended to reflect the aesthetics and historic character of the existing bridge such that impacts to historic and visual resources would be less than significant. Because highway capacity would not increase, the project would not result in secondary or cumulative effects on land use or population growth. Short-term construction impacts, such as noise, dust, and erosion, would be mitigated through best management practices. Therefore, a Finding of No Significant Impact (FONSI) has been issued under HRS, Chapter 343.

FINAL ENVIRONMENTAL ASSESSMENT

Hanapepe River Bridge Replacement, Kaumualii Highway, State Route 50, Island of Kauai, Hawaii

Project No. HI STP SR50(1)

TMKs: [4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por.,
and 1-9-010: 014 por., 015 por., 046 por., and 050 por.
Kaumualii Highway and Iona Road Rights-of-Way

Submitted Pursuant to Hawaii Revised Statutes, Chapter 343

Prepared for:
State of Hawaii, Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, HI 96813

Prepared by:
CH2M HILL
1132 Bishop Street, Suite 1100
Honolulu, HI 96813

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- Determination and Delineation of Wetlands and Other Waters of the U.S. for the Hanapepe River Bridge Project, March 2015

B Summary of Environmental Data Resources Radius Map Report™ with GeoCheck®, May 13, 2015

C Endangered Species Act Section 7 Consultation Documentation

- Consultation Letter Requesting Species and Critical Habitat List (dated November 21, 2014)
- Hawaii Bridges Program Summary Map Set (Hanapepe River Bridge only)
- Correspondence from U.S. Fish and Wildlife Service (dated December 22, 2014)
- Correspondence from State of Hawaii Division of Aquatic Resources (dated January 9, 2015)
- Consultation Letters (dated February 23, 2016)
- Biological Assessment for the Proposed Hanapepe River Bridge Project, January 2016
- U.S. Fish and Wildlife Service Concurrence Letter (dated August 4, 2016)

D Archaeological Inventory Survey

- State Historic Preservation Division, Archaeological Inventory Survey Report Acceptance Letter (dated August 10, 2016)
- Final Archaeological Inventory Survey Report for the Hanapepe River Bridge Replacement Project, Hanapepe Ahupuaa, Waimea District, Kauai, August 2016

E Historic Resource Inventory Form, Reconnaissance Level, March 23, 2016

F Cultural Impact Assessment Report, April 2016

- G National Historic Preservation Act Section 106 and HRS Chapter 6E Consultation Documentation
- Legal Notice
 - Letter Initiating Consultation (dated August 26, 2015)
 - Area of Potential Effects (U.S. Geological Survey Map and Aerial Imagery)
 - Correspondence from Office of Hawaiian Affairs (dated September 30, 2015)
 - Kauai Historic Preservation Review Commission Minutes (Meeting on October 1, 2015)
 - Correspondence from Historic Hawaii Foundation (dated December 9, 2015)
 - State Historic Preservation Division Consultation Letter and Request for Concurrence (dated May 11, 2016)
 - State Historic Preservation Division Concurrence Letter (dated August 24, 2016)
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Acronyms and Abbreviations

°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
AASHTO	American Association of State Highway and Transportation Officials
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ADT	average daily traffic
AIS	Archaeological Inventory Survey
AMSD	approximate minimum search distance
amsl	above mean sea level
APE	Area of Potential Effects
ASTM	ASTM International
BA	Biological Assessment
BMP	best management practice
CAA	Clean Air Act
CAS	Certified Asbestos Supervisor
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CER	computerized environmental report
CFLHD	Central Federal Lands Highway Division
CFR	<i>Code of Federal Regulations</i>
CIH	Certified Industrial Hygienist
CO	carbon monoxide
CSH	Cultural Surveys Hawaii
CWA	Clean Water Act
CZM	Coastal Zone Management
DAR	State of Hawaii Division of Aquatic Resources
dBA	decibels (A-weighted scale)
DLNR	State of Hawaii Department of Land and Natural Resources
DOT	U.S. Department of Transportation
DOW	Kauai Department of Water
EA	Environmental Assessment
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
FWCA	Fish and Wildlife Coordination Act
FWPCA	Federal Water Pollution Control Act

HAR	Hawaii Administrative Rules
HDOH	State of Hawaii Department of Health
HDOT	State of Hawaii Department of Transportation
HEER	Hazard Evaluation and Emergency Response
HHF	Historic Hawaii Foundation
HmA	Hanalei silty clay loam, 0 to 2 percent slopes
HOT	High occupancy toll
HOV	high occupancy vehicle
HRS	Hawaii Revised Statutes
JKB	Jaucus loamy fine sand, dark variant, 0 to 8 percent slopes
KHPRC	Kauai Historic Preservation Review Commission
KIUC	Kauai Island Utility Cooperative
kV	kilovolt
LBP	lead-based paint
LRFD	Load and Resistance Factor Diagram
LUST	leaking underground storage tank
<i>makai</i>	oceanward
MAP-21	Moving Ahead for Progress in the 21st Century Act
<i>mauka</i>	mountainward
MBTA	Migratory Bird Treaty Act
MOA	memorandum of agreement (Section 106, National Historic Preservation Act)
MP	Milepost
mph	miles per hour
MSAT	mobile source air toxics
N/A	not applicable
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OEQC	Office of Environmental Quality Control
OP	Office of Planning
PdA	Pakala clay loam, 0 to 2 percent slopes
PM _{2.5}	particulate matter less than 2.5 microns
ppb	parts per billion
ppm	parts per million
ROW	right-of-way

SHPD	State Historic Preservation Division
SHPO	State Historic Preservation Officer
SHWS	State Hazardous Waste Site
SIHP	State Inventory of Historic Properties
SLR	sea level rise
SMA	Special Management Area
SO ₂	sulfur dioxide
SOEST	School of Ocean and Earth Science and Technology
SPCC	spill prevention, control and countermeasure
STIP	Statewide Transportation Improvement Program
SWCA	SWCA Environmental Consultants
TMDL	Total Maximum Daily Load
TMK	Tax Map Key
TMP	Traffic Management Plan
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WQC	water quality certification

Project Summary

Table PS-1 contains a description of the project and applicable land-use designations.

TABLE PS-1
Project Summary

Project Name	Hanapepe River Bridge Replacement, Kaunualii Highway, State Route 50, Island of Kauai
Proposing/Determination Agency	State of Hawaii Department of Transportation
Anticipated Determination	Finding of No Significant Impact under Hawaii Revised Statutes (HRS) Chapter 343
Tax Map Key(s)	[4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por., and [4] 1-9-010: 014 por., 015 por., 046 por. and 050 por., Kaunualii Highway and Iona Road Rights-of-Way; see Figures 1-3, 1-4, and 1-5.
Existing Uses of the Project Corridor	Roadway through Hanapepe town
State Land Use	Urban District
Special Management Area	No
Kauai General Plan	Residential Community
Zoning	Commercial (C-G), Residential (R-4), Open (O)
Proposed Project	This project would replace the existing three-span structure with a slightly longer and wider three-span bridge that would accommodate two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks. A temporary two-lane bypass route would be provided on the <i>mauka</i> (mountainward) side of the highway throughout construction. The project also includes scour protection, supporting walls and slopes, utility relocations, and temporary staging areas. This project would improve mobility for highway users; address existing structural deficiencies; and meet current design standards for roadway width, load capacity, barrier railing and transitions, and approach roadways.
Anticipated Impacts	Short-term construction related impacts (noise, dust, and erosion) would occur, but the implementation of best management practices would minimize the effects to the environment. A traffic control plan would mitigate temporary traffic impacts. Protected seabirds and waterbirds, and the Hawaiian hoary bat, have the potential to occur within the project limits, but restrictions on the timing of construction and minimization of the project footprint would preclude any long term effects to the species. Effects to two historic architectural resources—the bridge and a portion of the levee/wall—would be minimized and mitigated through project design.

Preface

The proposed project involves replacing the Hanapepe River Bridge, which is located on Kaunualii Highway (State Route 50) in the Waimea District, island of Kauai. As the proposed project would involve the use of State funds and State lands (comprising the Kaunualii Highway rights-of-way, under the jurisdiction of State of Hawaii Department of Transportation, compliance with Hawaii Revised Statutes (HRS) Chapter 343 is required. This Environmental Assessment (EA) has been prepared pursuant to HRS Chapter 343 (as amended), and Title 11, Chapter 200, Hawaii Administrative Rules.

The project would also use Federal funding provided by the U.S. Department of Transportation Federal Highway Administration (FHWA). Use of Federal funds subjects the project to environmental documentation requirements set forth under the National Environmental Policy Act (NEPA) of 1969; (42 U.S. Code Section 4321); the Council of Environmental Quality Regulations; 40 *Code of Federal Regulations* (CFR) Parts 1500-1508; and 23 CFR Parts 625, 640, 712, 771, and 790, Environmental Impact and Related Procedures. To comply with NEPA, the Central Federal Lands Highway Division (CFLHD) of FHWA is preparing environmental documentation that would be consistent with the findings of this EA.

Introduction

1.1 Proposing Agency and Action

The State of Hawaii Department of Transportation (HDOT) proposes to replace the Hanapepe River Bridge on the island of Kauai. This Environmental Assessment (EA) has been prepared in compliance with Hawaii Revised Statutes (HRS) Chapter 343.

This project would replace the existing three span structure with a slightly longer and wider three-span bridge that would accommodate two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks. The project would improve mobility for all highway users; address existing structural deficiencies; meet current design standards for roadway width, load capacity, pedestrian and bicycle traffic, bridge railing and transitions, bridge approaches; and protect against scour.

1.2 Project Overview

The proposed Hanapepe River Bridge project is located at Milepost (MP) 16.6 on Kaumualii Highway (State Route 50 or highway) in the Waimea District on Kauai (see Figures 1-1 and 1-2). The bridge and highway are under the jurisdiction of HDOT. The land under the Hanapepe River is owned by Alexander and Baldwin, Inc. The bridge site is located approximately 0.35 mile upstream from the outlet to Hanapepe Bay. Tax Map Key (TMK) information for the affected properties is shown on Figures 1-3 through 1-5. Photos of the Hanapepe River Bridge are included on Figure 1-6.

The Hanapepe River Bridge, built in 1938, is a concrete tee-beam bridge with two piers and three arched spans. The bridge measures 275 feet long and 35 feet, 10 inches wide (from outside of rail to outside of rail). There are two 12-foot-wide travel lanes and two 5-foot-wide raised sidewalks on each side.

Kaumualii Highway is classified as an Urban Minor Arterial with a posted speed limit of 35 miles per hour (mph) at the project location. In 2010, HDOT recorded an average daily traffic (ADT) count of 15,700 vehicles along the section of Kaumualii Highway that includes Hanapepe River Bridge. The 2016 construction year ADT is projected to be 16,330, and the 2036 design year ADT is projected to be 18,435.

Although not on the National Highway System, Kaumualii Highway is the primary route to the Hanapepe-Eleele and Waimea areas. It provides the only regional access for Kauai's west-side communities, a route that is vital for economic development, emergency response and safety, and general welfare. The highway is essential for connectivity to other modes of transportation, including Lihue Airport and the harbors at Nawiliwili and Port Allen. It also provides the only land transportation access for the U.S. Pacific Missile Range Facility at Barking Sands, which is approximately 15 miles west, and the only public landfill on the island, Kekaha Landfill. In addition to being a regional highway, Kaumualii Highway is the main corridor for local circulation in the town of Hanapepe. When the highway was constructed in the 1930s, the alignment bypassed the historic commercial center and attracted the development of retail businesses and services, community facilities, and churches. Consequently, numerous travel destinations are located along the highway. In addition to motorists, the highway is used by bicyclists and pedestrians.

The project area boundary extends between the east and west approaches to Hanapepe River Bridge and approximately 300 feet upstream and downstream of the bridge for the temporary bypass route and streambank improvements for scour protection and erosion control. The proposed improvements constitute a stand-alone project that would address the bridge condition, regardless of whether other highway system improvements are undertaken.

1.3 Project Purpose and Need

The purpose of the proposed project is to improve the Hanapepe River Bridge and its roadway approaches to maintain the river crossing as a safe and functional component of the regional transportation system. Several deficiencies or existing problems have been identified and the project is intended to address the following needs.

The bridge is considered structurally deficient. The U.S. Department of Transportation (DOT) requires that bridges be inspected every 2 years. The National Bridge Inventory Standards inspection produces a sufficiency rating, which is a single number that can vary from a high score of 100 to a low score of 0; scores higher than 50 indicate that a bridge meets current engineering design standards. Based on the most recent 2013 bridge inspection report, the Hanapepe River Bridge has a sufficiency rating of 22.8 and is considered structurally deficient because of the following five conditions:

- The bridge is unable to accommodate heavy loads. The inventory load rating (daily carrying capacity) is 0.53, which is below the minimum standard of 1.0 (American Association of State Highway and Transportation Officials [AASHTO], 2012). As the bridge's condition worsens, the load rating will likely need to be lowered.
- The bridge deck and superstructure are in poor condition. Significant girder cracks are present and are continually monitored, as the cracks continue to worsen. Surface cracking of the roadway at the abutments are creating a pathway for water to infiltrate the substructure.
- The bridge substructure is in poor condition. Cracking and spall repairs are evident throughout the structure, and can be expected to increase in length and number because of the corrosive coastal environment.
- There are concerns with scour that have led to HDOT's identification of the Hanapepe River Bridge as a scour critical bridge. A Scour Critical Bridge Plan of Action was prepared in 2011. The 2011 bridge inspection report indicated that scour is occurring at both piers and at the Lihue-side abutment. Pier scour has exposed the untreated timber piles, which has caused upstream timber piles to deteriorate because of debris impact, microorganisms, and age-related wear.
- The bridge does not meet current seismic standards or conform to AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications (AASHTO, 2012). The current bearing assemblies will continue to be susceptible to seismic collapse as they are not designed for seismic loading.

The bridge is also considered functionally obsolete for two reasons:

- The bridge railing is deteriorating and, at 32 inches high, does not meet the standard 42-inch-minimum height for pedestrian and bicyclist safety. The existing railing also contains openings larger than allowed by the current design code.
- The bridge is too narrow. The existing structure is 35 feet, 10 inches from rail to rail, accommodating two, 12-foot-wide travel lanes and two raised 5-foot-wide sidewalks. The width does not provide for a standard 8-foot-wide shoulder over the bridge, as there are currently no shoulders. The shoulder standard is based on the roadway's Urban Arterial functional classification and the volume of traffic (over 16,000 average daily traffic in 2016). Shoulders are the portion of the roadway contiguous with the traveled way that accommodates stopped vehicles and emergency use. Without shoulders, many safety and operational guidelines are not available for the traveling public.

In addition, the bridge does not meet current crash test standards, with the following issues:

- The existing railing is not structurally capable of resisting the design loading – it is an unapproved, understrength concrete railing. If a vehicle were to impact the existing railing, it would fail and result in either the vehicle leaving the roadway or significant damage to the vehicle.

- End posts, the bridge railing ends, have deficient end treatments/transitions that result in blunt end treatments in the direction of traffic. If a vehicle were to engage the railing at the location of these end posts, the result would be severe damage to the vehicle because of the blunt nature of the railing in the direction of travel.

1.4 Purpose of the Environmental Assessment

This EA discloses the environmental and cultural impacts that would result from the project's implementation, and commits to specific mitigation measures that would be implemented to avoid and/or minimize potential impacts. This EA has been prepared to satisfy the requirements of HRS Chapter 343 and Hawaii Administrative Rules (HAR) Title 11, Chapter 200, Environmental Impact Statement (EIS) Rules, and other environmental compliance requirements. The proposed project triggered the need to comply with the rules and regulations for environmental review because the project would use State lands and State funds.

1.5 Public Comment on the Environmental Assessment

The Office of Environmental Quality Control (OEQC) notifies the public when a Draft EA is available for review in its bimonthly bulletin, the OEQC *Environmental Notice*. The OEQC officially announced the availability of the Draft EA on May 23, 2016, which initiated a 30-day review and comment period that ended on June 21, 2016. Comments were received from 14 agencies, organizations, and individuals during the review period. Correspondence is summarized and included at the end of Chapter 7.

1.6 Permits, Approvals, and Compliance Required or Potentially Required

The following requirements must be met to implement the proposed project:

1.6.1 Federal

- Department of the Army Permit (Section 10 of the Rivers and Harbors Act; Section 404 of the Clean Water Act [CWA]), U.S. Army Corps of Engineers (USACE)
- Section 408 Approval (Rivers and Harbors Act Section 14 and codified in 33 U.S. Code [U.S.C.] 408), USACE
- Section 106 Consultation (National Historic Preservation Act [NHPA]), State of Hawaii Department of Land and Natural Resources (DLNR), State Historic Preservation Officer (SHPO)
- Section 7 Consultation (Endangered Species Act), U.S. Fish and Wildlife Service; National Marine Fisheries Service
- Essential Fish Habitat Consultation (Magnuson-Stevens Fishery Conservation and Management Act), National Marine Fisheries Service
- Fish and Wildlife Coordination (Fish and Wildlife Coordination Act), U.S. Fish and Wildlife Service
- Section 4(f) (U.S. Transportation Act), Federal Highway Administration (FHWA)

1.6.2 State

- Section 401 Water Quality Certification, Clean Water Branch, State of Hawaii Department of Health (HDOH)
- National Pollutant Discharge Elimination System (NPDES) Permit, HDOH
- Stream Channel Alteration Permit, DLNR, Commission on Water Resource Management,
- Coastal Zone Management Act Consistency Review, Office of Planning, State of Hawaii Department of Business, Economic Development, and Tourism

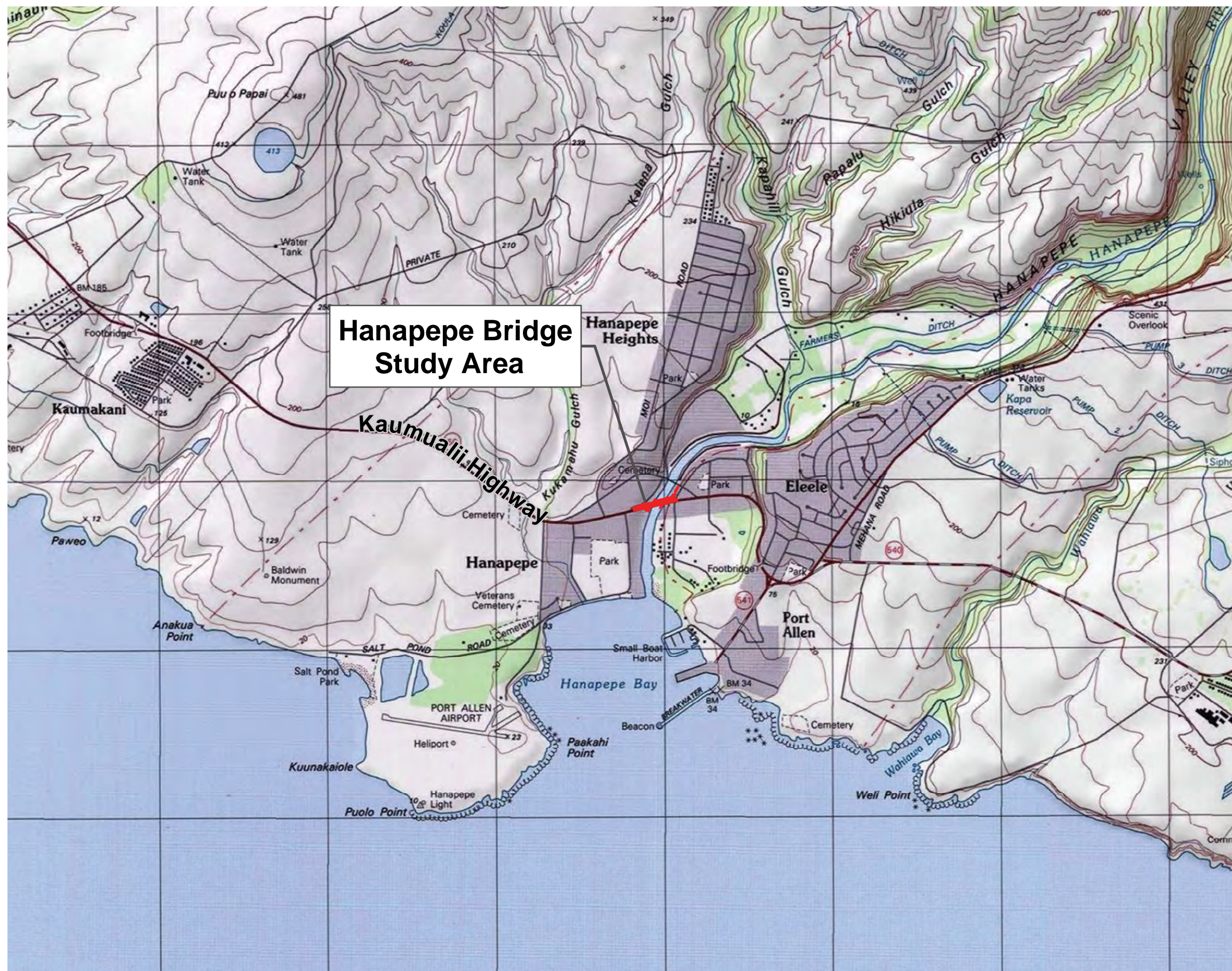
- Historic Preservation Review (HRS, Chapter 6E), DLNR, State Historic Preservation Division
- Americans with Disabilities Act (ADA) Review (HRS, §103-50), Disability and Communication Access Board, HDOH
- Occupancy and Use of State Highway Right of Way Permit, HDOT
- Community Noise Permit/Variance, HDOH

1.6.3 County

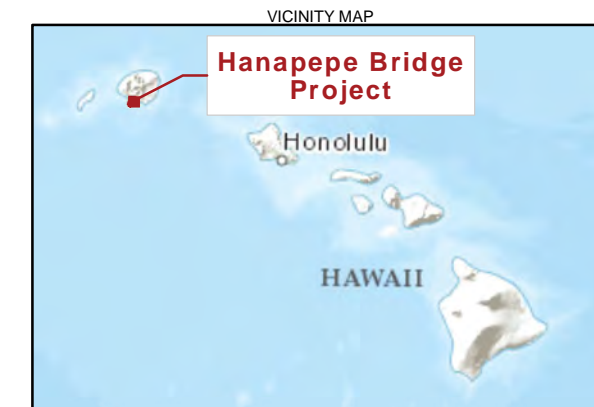
- Compliance with floodplain management requirements, Kauai Department of Public Works
- Grading, Grubbing, and Stockpiling Permits, Kauai Department of Public Works

1.7 References

American Association of State Highway and Transportation Officials (AASHTO). 2012. *Implementation for Load and Resistance Factor Rating of Highway Bridges, 6th Edition*.



Hanapepe Bridge Study Area



LEGEND

█ Study Area

Notes:
1. Imagery Source: ESRI USA Topographic Maps

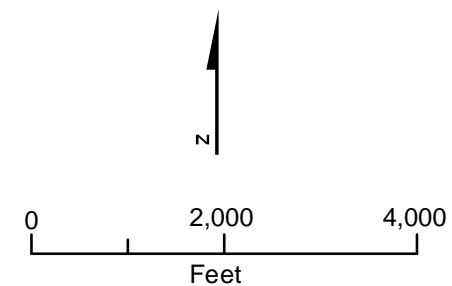
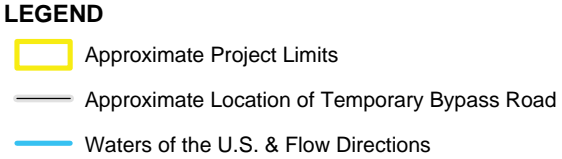
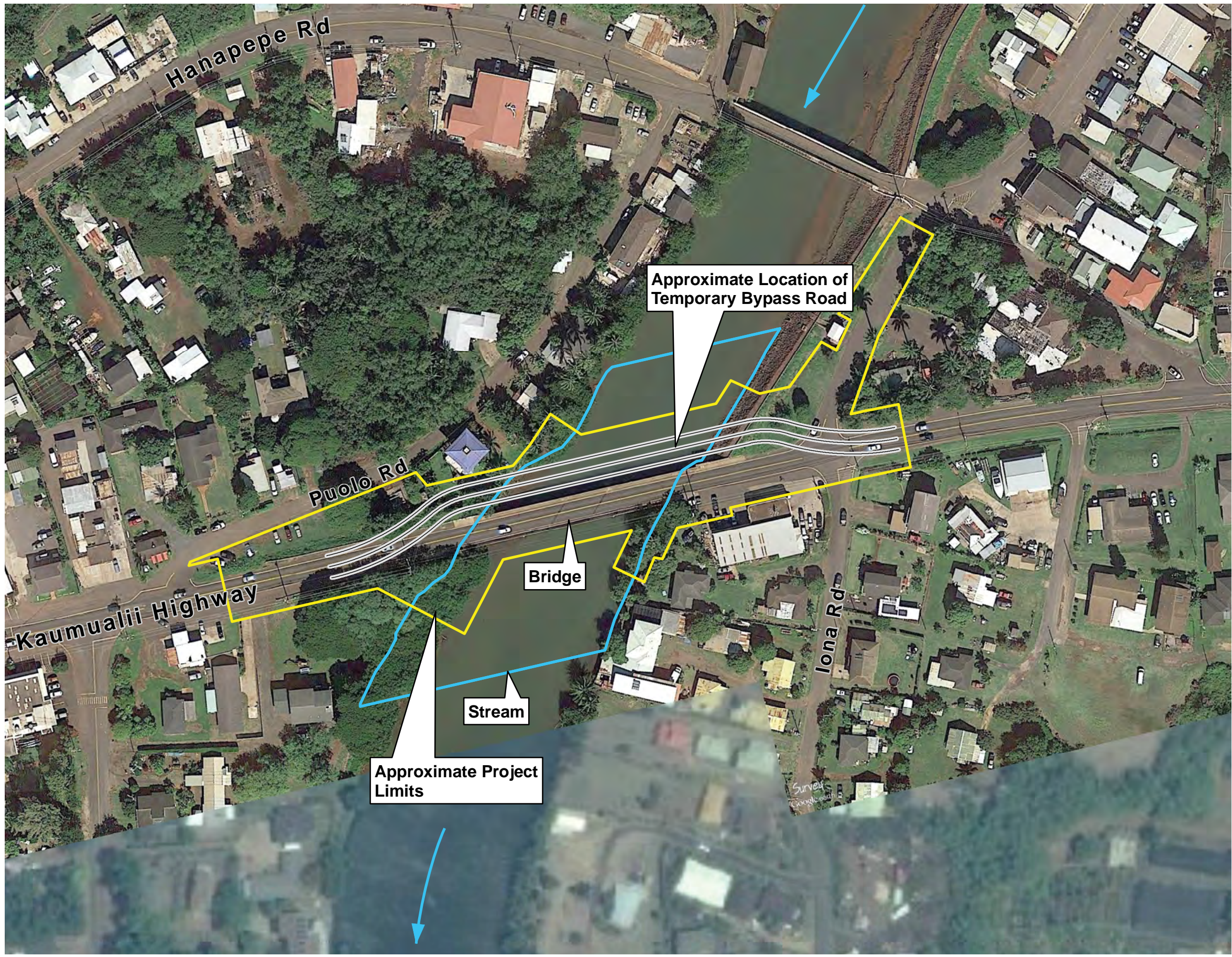


FIGURE 1-1
Project Location
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Notes:

1. High-Res Imagery Source: Google Earth 12/16/2013
2. Low-Res Imagery Source: Digital Globe 08/26/2011
3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

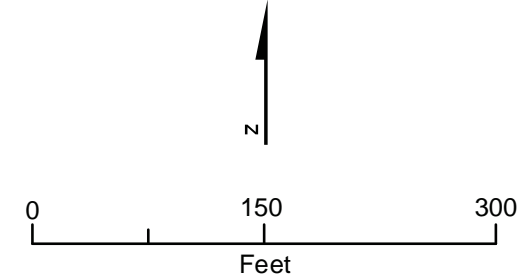


FIGURE 1-2
Project Limits
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

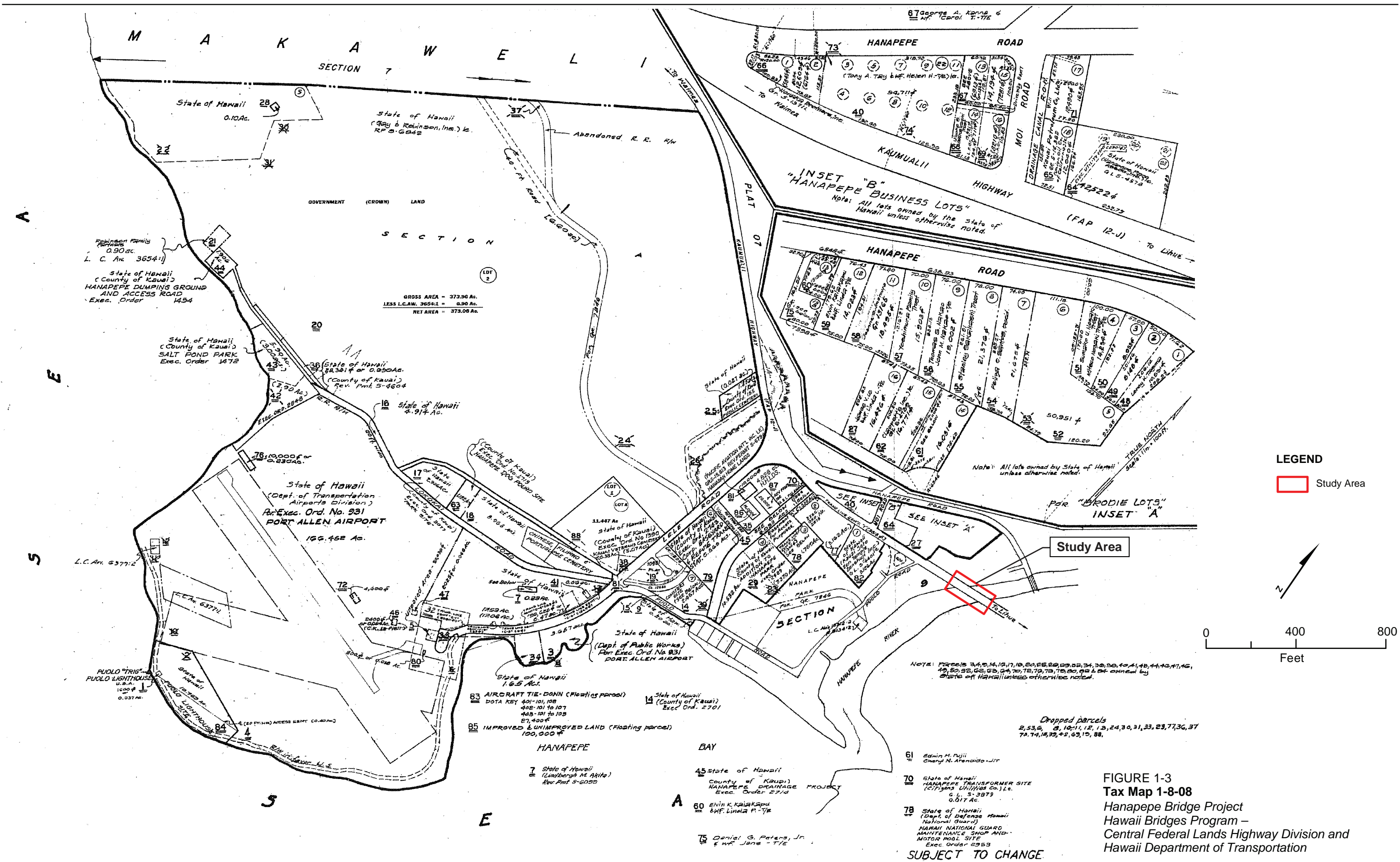
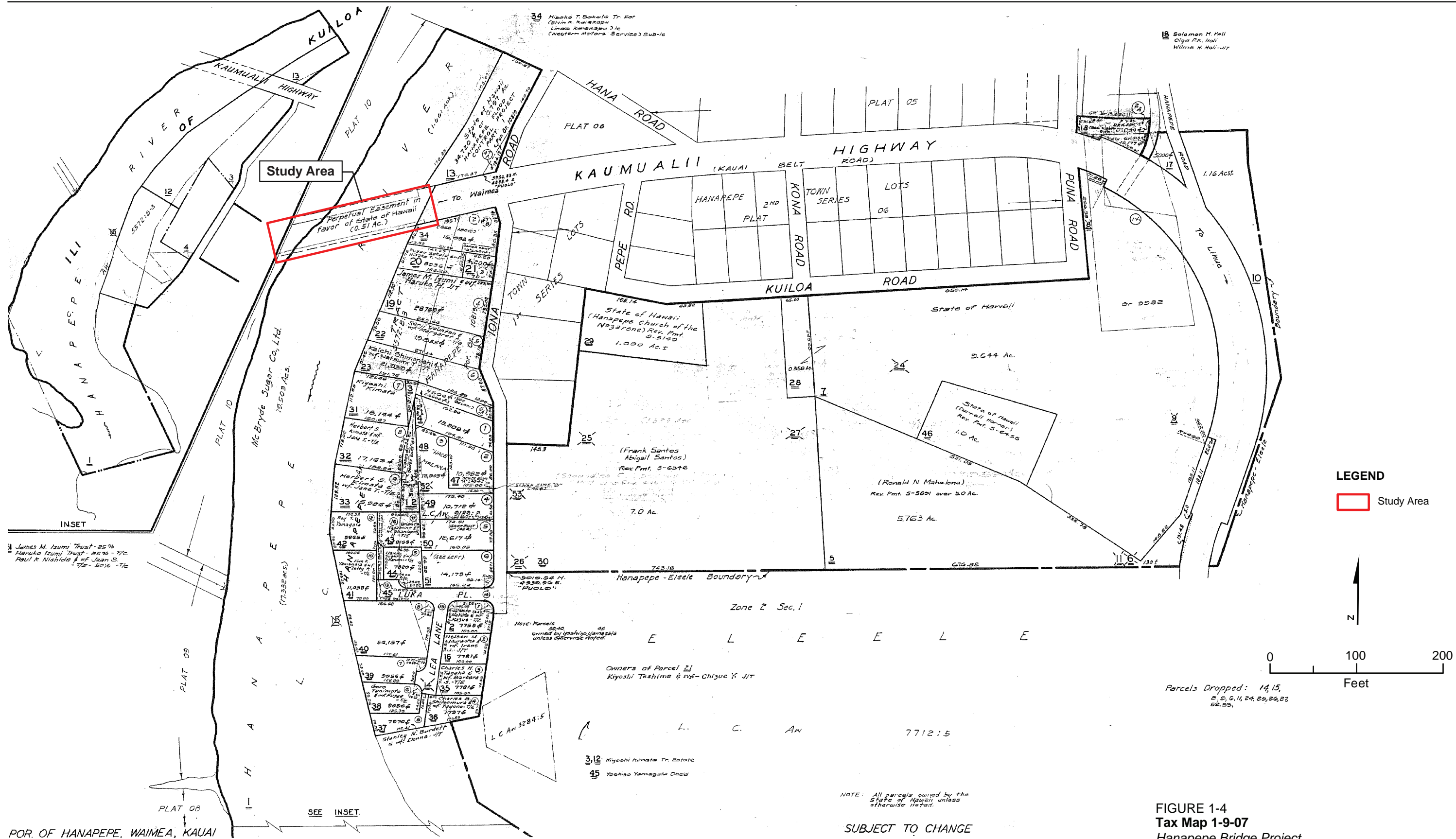
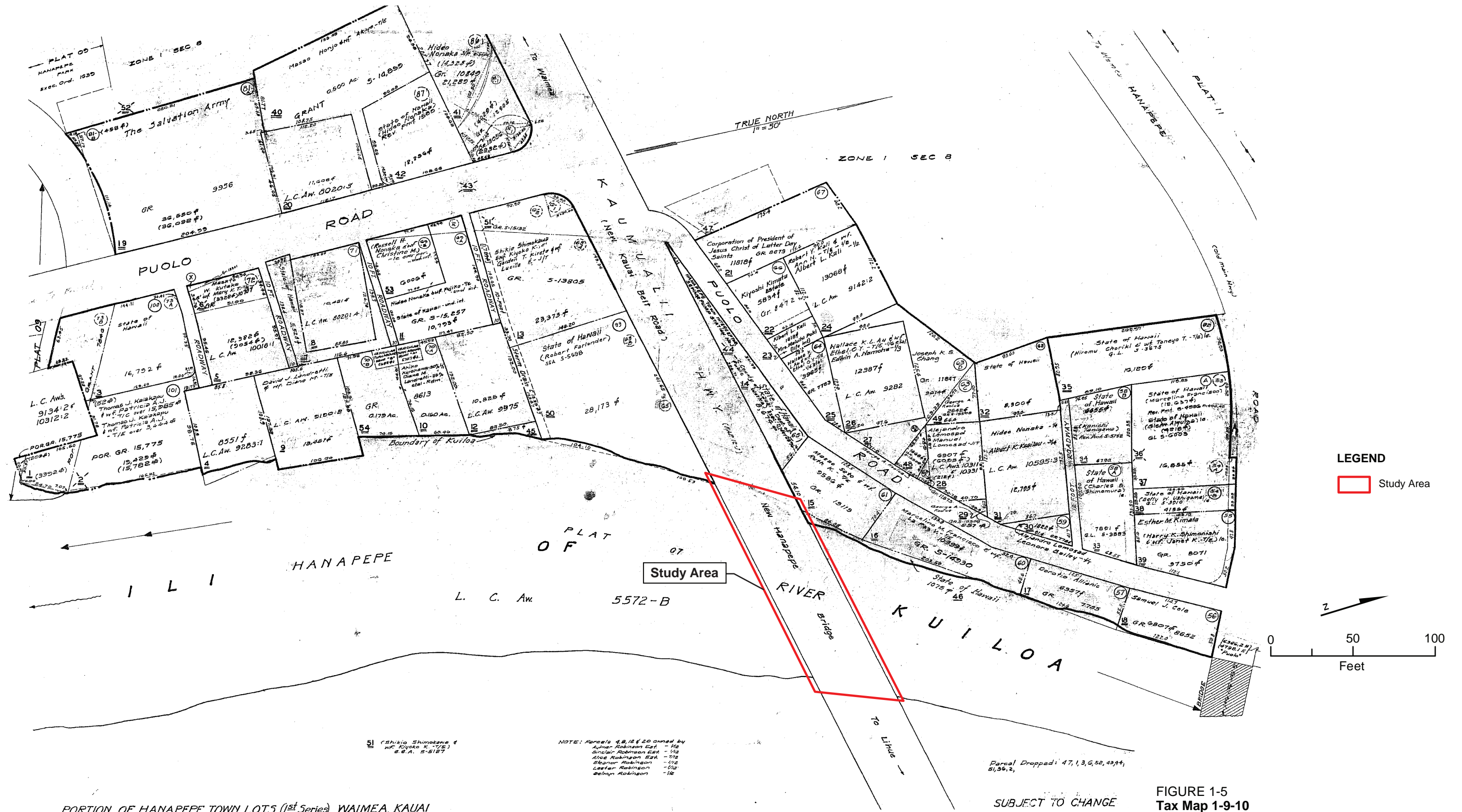


FIGURE 1-3
Tax Map 1-8-08
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

SUBJECT TO CHANGE





PORTION OF HANAPEPE TOWN LOTS (1st Series) WAIMEA, KAUAI

SUBJECT TO CHANGE

FIGURE 1-5
Tax Map 1-9-10
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



Deck of Hanapepe River Bridge, looking east.



West end of Hanapepe River Bridge, looking west.

FIGURE 1-6a
Project Area Photos
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Upstream side of Hanapepe River Bridge, looking west.



Substructure of Hanapepe River Bridge, view from east bank.

FIGURE 1-6b
Project Area Photos
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Bridge railing close up.



From bridge deck looking east toward levee on east bank.

FIGURE 1-6c
Project Area Photos
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation

Project Description

2.1 Project Location

The project is located in the heart of Hanapepe town at MP 16.6 on Kaunualii Highway (State Route 50). The highway, classified as an Urban Minor Arterial, is the primary access to and connection between the island's west side communities. The Hanapepe River Bridge is under the jurisdiction of HDOT.

2.1.1 Surrounding Land Uses

The project is on the coastal plain in the southwestern portion of Kauai. Hanapepe River is a perennial water way which conveys substantial flows beneath the highway bridge.

The project area is relatively flat and moderately developed. A County sewer pump station is located on the *mauka* (mountainward) side of the highway near the western approach. On the *makai* (oceanward) side of the highway near the eastern approach is a gas station and auto repair shop. Adjacent development on other privately owned lands include residences and small retail businesses and eating establishments. Nearby public and community facilities include a fire station and church.

USACE completed flood control improvements to the east and west banks of the river in 1959 and 1963, respectively. On the east (Lihue side) bank, the improvements include a floodwall atop a levee 2,200 feet long and an I-wall 185 feet long from Hanapepe Bridge upstream to the cliffs at the northeastern corner of Hanapepe Town. On the west (Waimea side) bank, there is a riprap-lined earth fill levee 4,465 feet long starting at the County-owned Hanapepe Road Bridge and extending upstream to high ground.

2.1.2 Other Nearby State and County Projects

There are no other State projects in the Statewide Transportation Improvement Program (STIP) in the immediate vicinity of the Hanapepe River Bridge project. The County of Kauai Public Works Department has identified Hanapepe Road for resurfacing. The entire length (5,400 feet) is planned to be resurfaced in 2017. The Hanapepe River Bridge project is adjacent to the planned resurfacing project. However, the construction areas are not expected to overlap. The County of Kauai Public Works Department also has a project to repair and/or rehabilitate the existing Hanapepe Road Bridge. The project is currently in the environmental review phase and is anticipated to be completed after the Hanapepe River Bridge project.

2.2 Existing Conditions along the Project Corridor

2.2.1 Right-of-Way and Surrounding Elevations

The right-of-way (ROW) for the Hanapepe River Bridge and associated approaches is approximately 80 feet wide. The bridge is at an elevation of 12.75 feet above mean sea level (amsl). Approximately 300 feet east of the bridge, the elevation is 8.4 feet amsl, and approximately 300 feet west of the bridge, the elevation is 9.3 feet amsl.

2.2.2 Bridge Structure and Approaches

Constructed in 1938, the existing Hanapepe River Bridge is a reinforced concrete tee-beam bridge approximately 275 feet long and 35 feet, 10 inches wide. The roadway atop the bridge carries two lanes of Kaunualii Highway, with one 12-foot lane in each direction and 5-foot sidewalks and bridge rails on each side. The bridge crosses the river at an oblique angle. This results in an approximately 45 degree skew between the alignment of the roadway and the two supporting bridge piers. The center span of the bridge is 114 feet long and includes a suspended center section supported on expansion bearings by cantilever sections extending toward the center from each of the bridge piers. The two outer spans, between the piers and each abutment, are 78 feet. The roadway approach has approximately 8-foot shoulders on the west side, and 5-foot shoulders on the east side.

The Hanapepe River fills the entire span of the bridge. Upstream of the Hanapepe River Bridge, the riverbank is stabilized on the east bank with a sloping riprap embankment about 12 feet high topped by a 2 feet, 6 inches high concrete levee wall. The upstream west bank is mostly concealed by thick vegetation, but a short exposed portion adjacent to the bridge is a lava rock rubble and concrete mortar retaining wall approximately 5 feet high that extends about 30 feet before disappearing into the vegetation. It appears that the remainder of the upstream west bank to the County's Hanapepe Road Bridge is either a retaining wall or an earthen bank. Both banks downstream of the bridge are also concealed by vegetation and appear to be either earthen bank or retaining wall. On both downstream banks and the west upstream bank, there are house lots that run down to the river. The east upstream bank, over the levee wall, has a grassy slope toward Iona Road.

2.2.3 Utilities

Providers with utilities or services within the project area include the following:

- Sandwich Isles Communications – Fiber Optic
 - Underground ducts with fiber optic cable on the *mauka* side of the bridge
- Hawaiian Telcom – Telecommunications
 - Overhead lines on the *makai* side that run parallel to the bridge
- Oceanic Time Warner Cable – Cable
- County of Kauai, Department of Water – Water
 - 12-inch waterline suspended on the *makai* side of the bridge
- County of Kauai, Department of Public Works, Wastewater Management Division– Sewer
 - 12-inch forcemain attached to the *mauka* side of the bridge
- HDOT – Street Lighting
 - Pole mounted lights on the east and west sides of the bridge

2.3 Proposed Project

The proposed project is to replace Hanapepe River Bridge to address the structural and functional deficiencies described in Section 1.3, Project Purpose and Need. Figure 2-1 shows typical sections. The project limits extend beyond the Hanapepe River Bridge to include the approach roadways and potential staging areas, approximately 1,000 feet along Kaumualii Highway and approximately 25 feet beyond the existing ROW. Where the Hanapepe River crosses beneath the bridge, the project area would extend 300 feet upstream and downstream of the bridge to include a temporary bypass route and encompass stream bank improvements related to scour protection and erosion control.

The project area encompasses a total area of 2.7 acres, which consists of 1.9 acres of permanent impact area and 0.8 acres of temporary impact area. The proposed permanent improvements would be within the existing HDOT ROW. Properties that would be affected by the project are discussed in Section 2.3.3. There would be no improvements or changes to the travel lanes or shoulders beyond the project limits.

HDOT and AASHTO standards and regulations govern the design criteria and construction methods and procedures for the proposed project. The design would meet or exceed both HDOT and AASHTO criteria (see Table 2-1). The posted speed limit of 35 mph on Kaumualii Highway would remain. The replacement bridge would not meet the HDOT Manual (HDOT, Highways Division 1980) criteria of 2 feet of freeboard (or clearance above flood waters); therefore, a design exception would be required.

TABLE 2-1
Project Design Criteria

Design Criteria	Existing Conditions	Standards		Proposed
		AASHTO	State	
Design Speed	Posted speed – 35 mph	45 mph	Urban 25 to 45 mph	Design speed = 45 mph Posted speed - 35 mph
Travel Way Width (feet)	12	11	12	12
Shoulder Width (feet)	N/A	8	10	8
Sidewalk Width (feet)	5	N/A	N/A	5
Bridge Width (feet)	35 feet, 10 inches	Match approach roadway width	N/A	52

Notes:

N/A = not applicable

HDOT’s *Design Criteria for Bridge and Structures* (2014) and AASHTO’s *Implementation for Load and Resistance Factor Rating of Highway Bridges* (6th Edition) (2012, including all subsequent revisions) would be followed for structure design.

The project would use HDOT’s *Design Criteria for Highway Drainage* (HDOT, 2010) to govern the hydraulic evaluation, analysis, and design. The project would consider incorporating low-impact development concepts, such as directing stormwater drainage into grass swales adjacent to the bridge and highway.

The approach travel lanes and shoulders would be designed to AASHTO and HDOT guidelines (*A Policy on Geometric Design for Highways and Streets* [AASHTO, 2011] and *Hawaii Statewide Uniform Design Manual for Streets and Highways* [HDOT, Highways Division, 1980], and all subsequent amendments).

2.3.1 Replacement Bridge Structure

The proposed project would replace Hanapepe River Bridge in its existing location. The new structure would be a three-span, shallow arch, girder bridge which reflects the aesthetics and historic character of the existing structure (see Figure 2-2). The new bridge would be longer than the existing bridge—increasing in length from 275 feet to 308 feet. It would also be wider than the existing bridge—increasing in width from 36 feet to 52 feet. Like the existing bridge, the replacement would accommodate two 12-foot wide travel lanes, but the shoulders would be widened to 8 feet. The new bridge would continue to provide 5-foot wide raised sidewalks on each side and the bridge railings would measure 1-foot thick.

The proposed bridge design includes shallow arched wide flange girders and a cast-in-place deck slab. Bridge railings and transitions would meet crash test requirements. The proposed railing (Texas Aesthetic Balustrade) is a concrete, parapet-style crash-tested rail with similarities to the existing bridge railing and would be 42 inches high for bicyclists’ safety (see Figures 2-3 and 2-4). Concrete end posts would be provided for the length of the approach slab as a transition from the bridge railings to the roadway metal guardrails.

Existing piers and pier caps (existing exposed timber piles) would be cut at the mudline and removed. The replacement bridge would be supported by deep foundations bearing on, or embedded within, competent soils beneath the soft soils. The foundation type for the bridge would likely consist of driven piles or drilled shafts. A driven pile foundation could have constructability issues associated with obstructions from boulders during driving, but is technically feasible. If drilled shafts are used, a large diameter shaft would be considered to minimize the potential for drilling difficulty because of cobbles and boulders in the alluvium. A larger diameter shaft, such as 60 inches, could be completed with augers and the greater diameter would

allow for boulders to be removed on the auger flights. Drilled shafts with a diameter that is smaller than the likely boulder size may encounter refusal. Foundation type would be selected during final design.

The existing vertical bridge abutments are currently located within the main channel. The existing abutments would be demolished and removed. New abutments would be constructed behind the location of the existing abutments and set back from the main channel, thereby avoiding interference with the existing foundation. This design also provides greater hydraulic capacity. By removing the existing abutments, the stream would be widened under the bridge to match the existing upstream and downstream channel profile and allow for additional conveyance of flood waters. A new riprap protected slope would be constructed to protect the underside of the new drilled shaft stub abutment and river banks from scour. The new northeast abutment would require removal of approximately 7 feet of the existing levee along the east bank with a new tie-in to the replacement bridge. At the abutments, wingwalls would cantilever behind the abutments for 20 feet on each side. On the east side, the wing walls would be extended by a concrete barrier wall supported on spread footings.

The proposed horizontal and vertical roadway alignments would closely match existing conditions as roadway profile changes would impact the adjacent properties along the roadway approaches to the bridge. Two retaining walls are expected on the west end of the bridge. Based on preliminary design, the wall on the *mauka* side would measure approximately 110 feet long, and the wall on the *makai* side approximately 55 feet long.

Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

2.3.2 Construction Activities

Staging of personnel and equipment would occur within the project limits. A potential staging area is identified along the east (Lihue side) bank, above the levee and between the highway bridge and County bridge. Because the temporary detour road is located on the *mauka* side of the bridge, equipment access would likely approach the construction zone from the *makai* side (see Figure 2-5). Specific construction means and methods would be determined by the contractor, who is not yet selected. However, general options would include equipment stationed on a barge or floating platform, or temporary trestle structure with a work platform.

Construction would occur both during normal work hours and on weekends. To minimize impacts to the surrounding residential areas, night work is not anticipated. The Hanapepe River Bridge would be closed to normal traffic for the duration of the project. During construction, a two-way temporary bypass and temporary bridge would be constructed on the *mauka* side of the existing bridge. The temporary bypass would provide two 10-foot lanes (one in each direction), 2-foot shoulders on each side, and barriers as needed. The posted speed of the temporary bypass road would be 15 mph.

There are currently sidewalks on the existing bridge for pedestrians to cross the Hanapepe River. During construction, the temporary bypass road would not accommodate bicyclists and pedestrians. However, bicyclists and pedestrians would be able to cross the river by using the County bridge north of the existing highway bridge (see Figure 2-6).

Utilities attached to the existing bridge, as well as overhead lines, would need to be temporarily relocated to the bypass bridge during construction. Affected utilities include telecommunications, water, sewer, and street lighting. The temporary bridge would need to support the weight of utility lines, as well as telecommunication conduits and cables currently supported by the existing span.

The temporary bypass does not fit in the existing ROW and would require a construction parcel. A sewage pump station and private residence on the west, *mauka* side of the bridge require that temporary retaining walls be constructed. On the east, *mauka* side of the bridge, there is a flood control levee wall that would be spanned to minimize construction impact.

2.3.3 Properties Affected by the Project

The land under the Hanapepe River is owned by Alexander and Baldwin, Inc. (TMK: 1-9-007:001). Parcels adjacent to the bridge abutments are owned by various public and private owners. The proposed project would not require the permanent acquisition in fee of private property outside of the existing ROW. However, as shown in Table 2-2, approximately 0.49 acres of land would be needed for permanent access and/or maintenance easements and approximately 0.64 acres of land would be needed for temporary easements to accommodate bridge construction and paving improvements.

TABLE 2-2
Right-of-Way Requirements

Tax Map Key	Land Use	Estimated Area Needed (Acres)	Project Requirement
(4) 1-9-007: 001	Urban	0.11	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 001	Urban	0.06	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 001	Urban	0.13	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 001	Urban	0.18	Construction parcel
(4) 1-9-007: 013	Urban	0.12	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 013	Urban	0.20	Construction parcel for temporary roadway bypass and staging
(4) 1-9-007: 034	Urban	0.03	Permanent easement for maintenance access
(4) 1-9-010: 014	Urban	0.20	Construction parcel for temporary roadway bypass and staging
(4) 1-9-010: 015	Urban	0.06	Construction parcel for temporary roadway bypass
(4) 1-9-010: 050	Urban	0.04	Permanent easement for maintenance access
Total	10 Parcels	1.13 Acres	

2.4 No Action Alternative

The no action alternative would retain the existing bridge with no changes. There would be no effort to repair or replace the bridge to meet current design standards for roadway width and load capacity. Deficiencies in bridge railings, transitions, and bridge approaches would not change.

Under the no action alternative, environmental impacts resulting from bridge replacement activities would be averted and bridge replacement costs would not be incurred by HDOT. However, the existing bridge would continue to deteriorate, and require regular inspection and increasing maintenance to maximize its useful lifespan. Eventually, the bridge may no longer provide a safe support for vehicle, bicycle, and pedestrian traffic and could face restricted use or closure. The No Action Alternative was eliminated from further consideration because it does not meet the purpose and need of maintaining Kaumualii Highway as a safe and functional component of the regional transportation system.

2.5 Bridge Alternatives Considered and Dismissed

2.5.1 Rehabilitation of the Existing Bridge

As described in Section 1.3, the existing bridge is classified as functionally obsolete, has a substandard load carrying capacity, does not meet current seismic requirements, and is scour critical. The existing bridge rails are decaying and do not meet current crash test requirements. Inspection of existing timber piles identified possible marine borer infestation and decay which may compromise load carrying capacity. In March 2012, an underwater inspection of the Hanapepe River Bridge was performed to evaluate the ongoing scour and

undermining conditions of the bridge piers. It was assessed that the exposed timber piles are in very poor condition — one pile has completely deteriorated from the concrete footing, another has lost at least 80 percent of its cross section, and others can be penetrated easily with a knife. Furthermore, it is unknown if a similar condition is affecting the unexposed piles still buried below grade. Monitoring of top of pier elevations or top of deck elevations occurs on a regular basis to ensure that the loss of support is not causing any settlement of the pier.

For rehabilitation to meet current design requirements, the existing bridge would require installing drilled shafts with new foundations and strengthening the existing girders in the substructure. The existing sidewalks would need to be demolished to extend the width of the deck (overhang slab) and construct bridge rails that meet crash test requirements. Additional upgrades would be needed for seismic loading. The extent of these improvements would essentially result in dismantling a substantial portion of the existing bridge.

Rehabilitation of the existing bridge was evaluated, but dismissed from further consideration based on the age and deteriorated condition of the existing bridge. The lifespan of a new bridge is estimated at 75 years. In comparison, rehabilitation could extend life expectancy by 40 to 50 years, but uncertainties about the existing foundations would affect what can be accomplished through design. Some of the unknowns would remain until the foundations were exposed during actual rehabilitation work. Because deteriorated bridge components will need to be replaced anyway and the complications of working around remaining components, the cost of rehabilitation could be 2 to 3 times higher than that of replacement.

2.5.2 Bridge Replacement (Two-span Girder Bridge)

This alternative consists of replacing the existing three-span structure with a wider, two-span precast post-tensioned bridge (see Figure 2-7). The new bridge would have wide flange girders and a cast-in-place concrete slab bridge deck. This design would be the most economical to construct. However, it would have a modern streamlined appearance that would not replicate the arched shape of the existing bridge and retain its aesthetic and historic character. Input received at a September 17, 2015, public meeting reflected a desire to move forward with an alternative that more closely resembles the existing bridge. This alternative was dismissed because it did not incorporate the aesthetics and historic character of the existing bridge.

2.5.3 Replication of the Existing Bridge

The replication alternative would involve rebuilding the existing bridge to its current configuration. The existing configuration is assumed to be all aspects of the bridge that are visually apparent. Foundation elements necessary to support the structure, internal steel reinforcing details, and substructure elements underground or underwater would not be part of the replication design and, therefore, could be modified to meet current loading requirements. Design elements intended to match the existing bridge would include rail type, girder shape and spacing, and cross section profile.

An analysis of replication and its ability to meet the project purpose and need was conducted. Although there are elements of a bridge replication that can be accomplished, there would be several deficiencies that would fail to address the project purpose and need, creating continued operational and safety concerns. The primary existing deficiencies that would persist include the inability for bearing replication to meet seismic standards, rails and end posts that do not meet crash testing requirements or guidelines for vehicle and pedestrian/bicyclists' safety, and a continued lack of shoulder, which creates an unsafe condition for vehicles and pedestrians, limits the route's functional operations when a stalled or maintenance vehicle is present, limits sight distance for safe traffic movements, and lacks room for emergency evasive maneuvers. Because this alternative failed to meet the project purpose and need, it was dismissed from further consideration.

2.5.4 Bridge Construction on a New Alignment

This alternative proposes retaining the existing Hanapepe River Bridge, but closing it to vehicular traffic in light of structural and functional deficiencies and restricting its use to pedestrians and bicycles. A replacement bridge for motor vehicles would be constructed off alignment. This alternative was dismissed because of the substantial adverse impacts and high costs involved in realigning the highway for a new river crossing. The Hanapepe coastal plain between the hillsides and the ocean is relatively narrow. Shifting the highway further *mauka* would cause disruptions to Hanapepe Town, while shifting the highway further *makai* would encroach on residences and parklands and be closer to coastal resources. Existing highway-oriented businesses would be affected by the loss of street traffic. At the same time, the existing bridge structure will continue to age and require public expenditures for operations and maintenance.

2.5.5 Construction Period Alternatives

2.5.5.1 Phased Construction with One-Lane Temporary Bypass

This alternative proposes a phased approach to constructing the replacement bridge. One lane would remain open to traffic on the existing highway bridge while demolition and construction of part of the new bridge takes place. A one-lane temporary bypass bridge would be constructed adjacent to the Hanapepe River Bridge on the *mauka* side to carry traffic in the other direction. Temporary walls would be needed to reduce impacts to adjacent *mauka* properties, and a construction parcel (temporary easement) would be needed for work outside the ROW.

The phased construction approach was dismissed because it would extend the preliminary construction schedule by 6 months, thereby extending the timetable from 24 months to 30 months.

2.5.5.2 Phased Construction with Use of County Bridge

This alternative proposes a phased construction approach in conjunction with use of the County bridge on Hanapepe Road upstream of Kaumualii Highway. The first phase would leave the eastbound lane on the existing highway bridge open and the single-lane County bridge would be used for the other direction of travel. Once the westbound half of the highway bridge was constructed, eastbound traffic would be moved over to the completed section, while the County bridge would be used for westbound traffic.

This alternative was dismissed because the County bridge is in poor condition with a low load limit that is inadequate for regional highway traffic. The County is currently planning to rehabilitate the bridge, but that work has not begun. Furthermore, this alternative would require that highway traffic be diverted to narrow local roads, such as Hana and Hanapepe Roads, thereby affecting adjacent residences.

2.5.5.3 Use of the Hanapepe Road Bridge and Construct Adjacent Temporary One-way Bridge

This alternative proposes that the Hanapepe Road Bridge be used for traffic in one direction and a new temporary bypass bridge be constructed adjacent to the County bridge for traffic in the other direction. The new temporary bypass would need to be constructed on the *makai* side of the County bridge because of an existing structure approximately 10 feet from the *mauka* side of the bridge which leaves insufficient space for a temporary bridge. While there is greater clearance on the *makai* side, there are other constraints, including existing stairs and walls on the west side, and the steep levee slope on the east side. A significant disadvantage of this alternative is the absence of a temporary crossing near Kaumualii Highway on which utilities could be hung during the construction period. As with the alternative described in Section 2.5.3.2, there would also be increased traffic on local residential roads and the County bridge has structural limitations. As such, this alternative was dismissed.

2.5.5.4 Two-lane Temporary Bypass on the *Makai* Side of Hanapepe River Bridge

This alternative proposes construction of a temporary two-lane bypass road and bridge on the *makai* side of the existing highway bridge. It was considered, but dismissed because of impacts on businesses and residences located adjacent to the proposed bypass alignment.

2.6 Statewide Transportation Improvement Program

The Hawaii Statewide Transportation Improvement Program (STIP) provides a multiyear listing of State and County transportation projects and identifies those projects slated for Federal funding. It is a multimodal transportation improvement program that is developed using existing transportation plans and policies, as well as current highway, transit, and transportation programming processes. The STIP delineates the funding categories and the Federal and local share required for each project. Although projects are on the STIP, that does not necessarily mean those projects will be planned, designed, or constructed within the fiscal period because of unforeseen occurrences such as project readiness or project priorities.

The current STIP, which covers the period from Federal Fiscal Year (FFY) 2015 to FFY 2018, was published by HDOT on October 27, 2014. The Kaumualii Highway (State Route 50) Hanapepe River Bridge project is listed on the STIP as a system preservation project.

2.7 Preliminary Cost Estimate and Schedule

In 2015, the estimated construction cost for the proposed project is approximately \$23 million. This includes surveying and staking, relocating utilities, temporary bypass road and bridge, new bridge, and associated roadway elements. Excluded are land acquisition fees. Construction of this project would occur after the project's design is completed and necessary entitlements are obtained.

The project is anticipated to start construction in late 2016/early 2017 and end in 2019 with an estimated duration of 24 months.

2.8 References

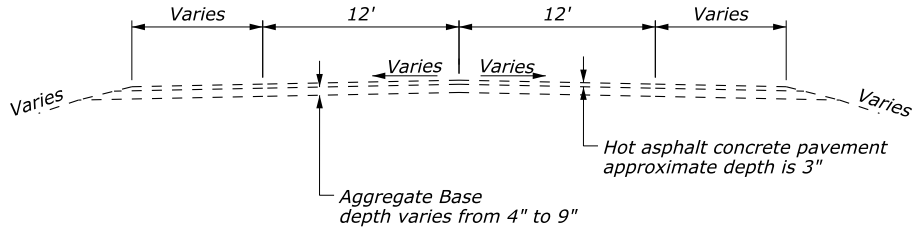
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American Association of State Highway and Transportation Officials (AASHTO). 2012. *Implementation for Load and Resistance Factor Rating of Highway Bridges, 6th Edition*.

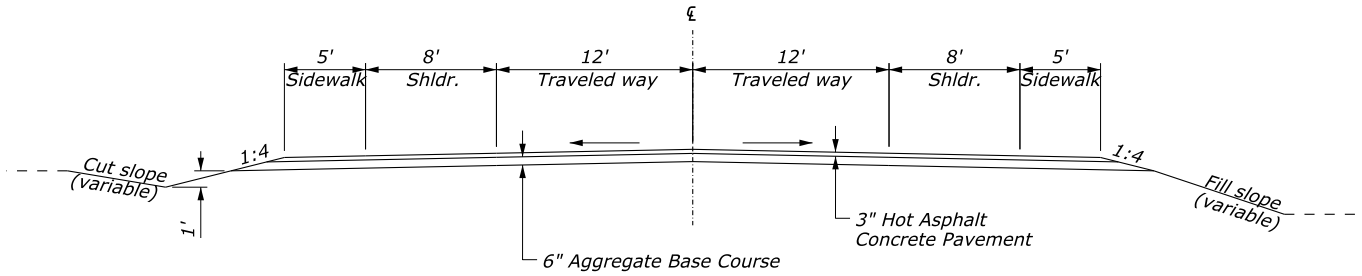
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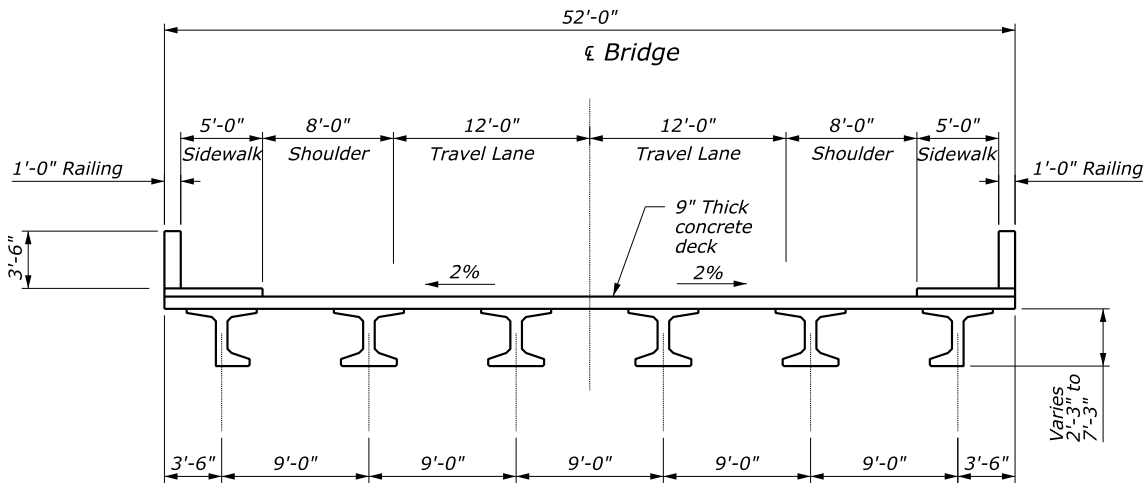
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EXISTING TYPICAL SECTION

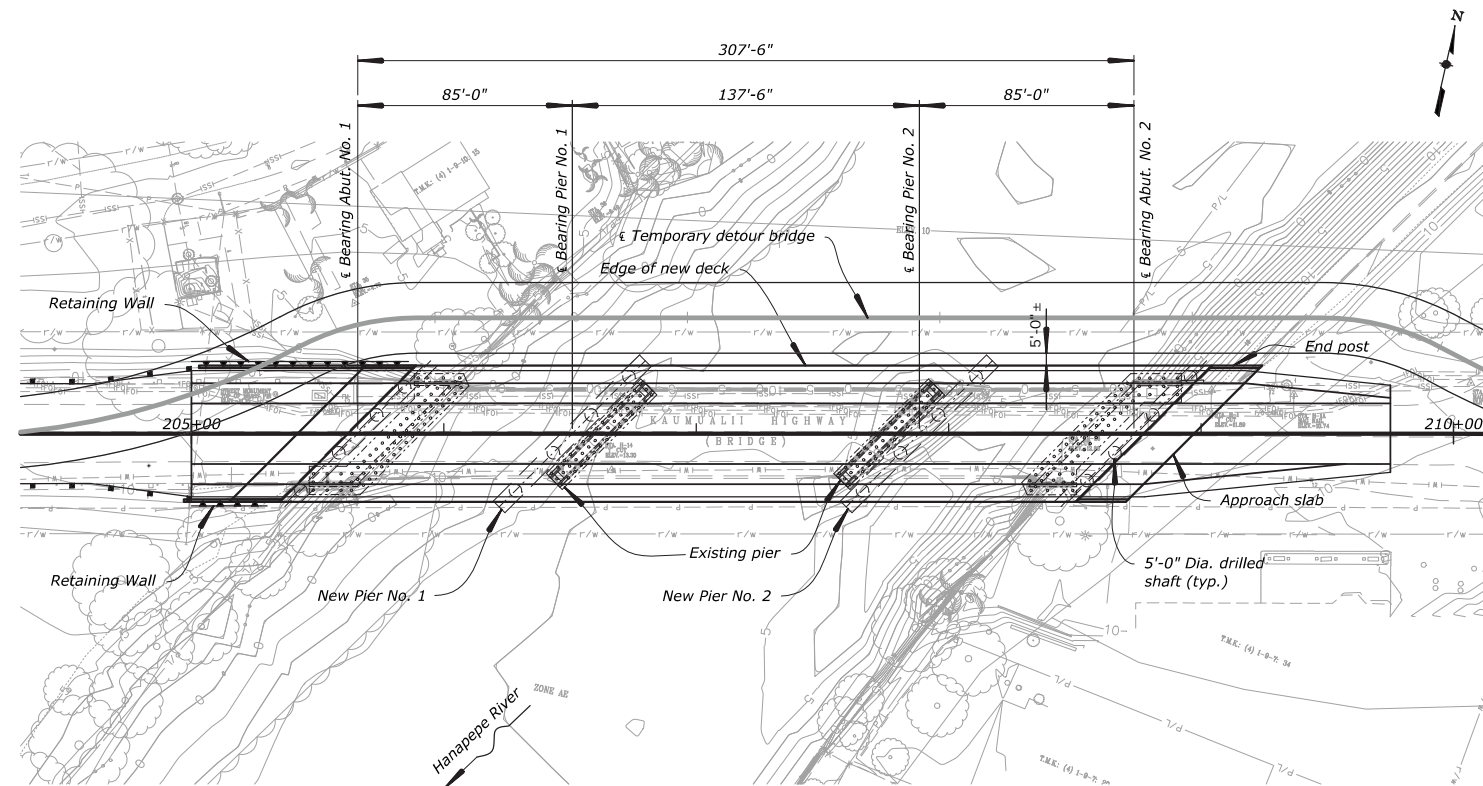


PROPOSED APPROACH TYPICAL SECTION

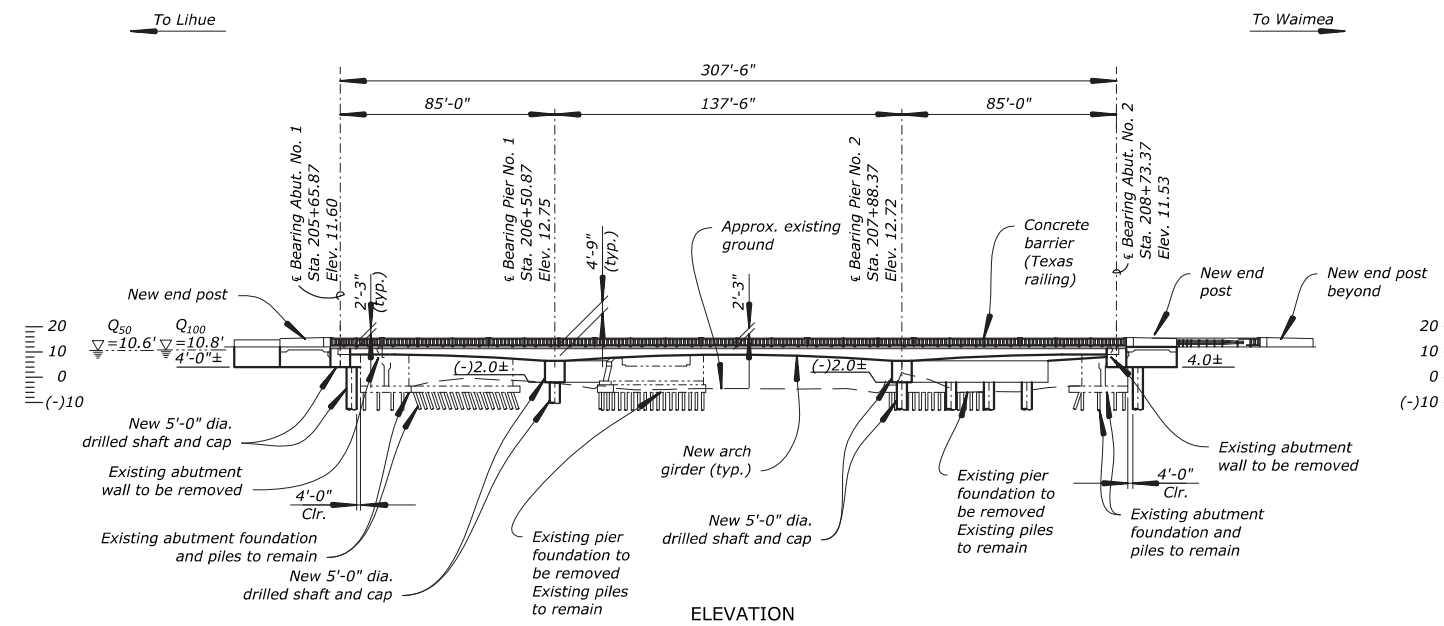


PROPOSED BRIDGE TYPICAL SECTION

FIGURE 2-1
Typical Sections
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

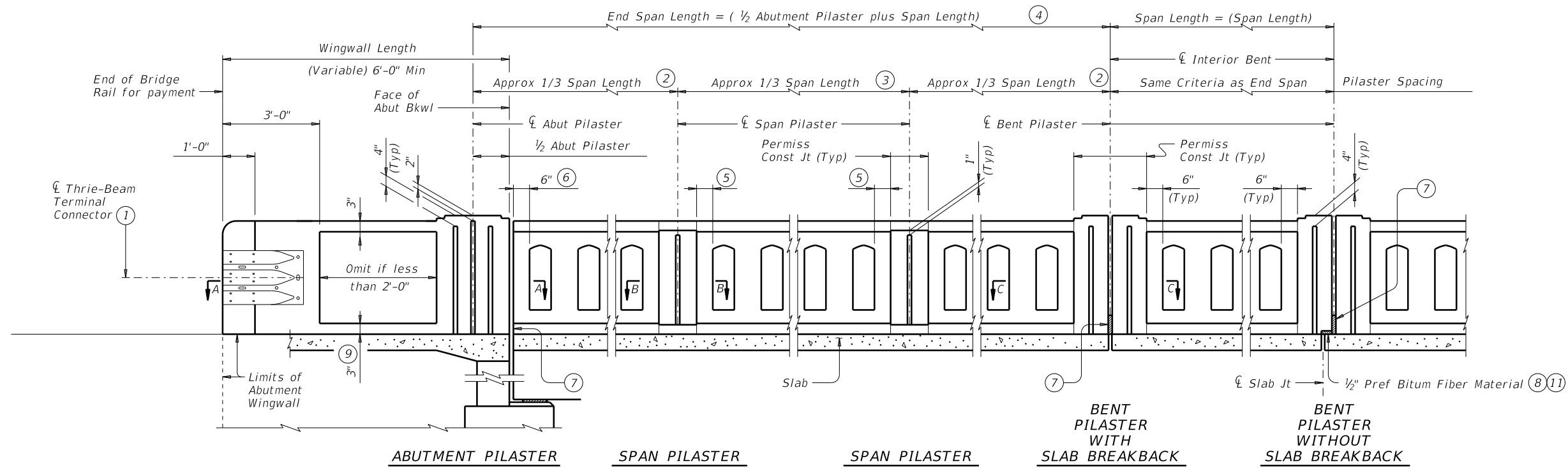


PLAN



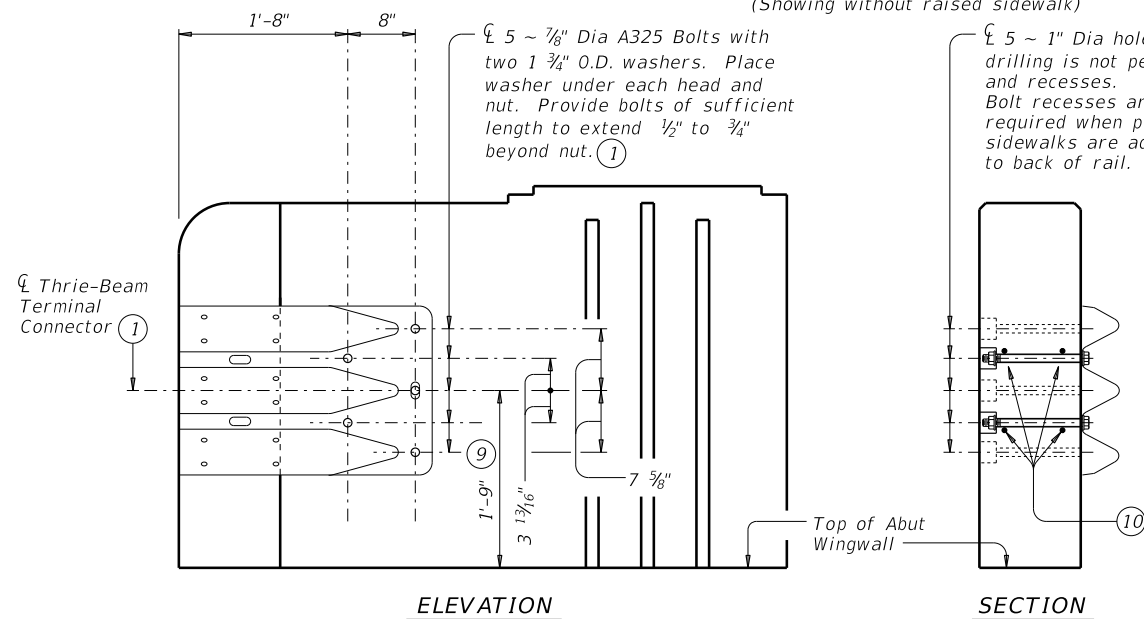
ELEVATION

FIGURE 2-2
Bridge Design (Preliminary)
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



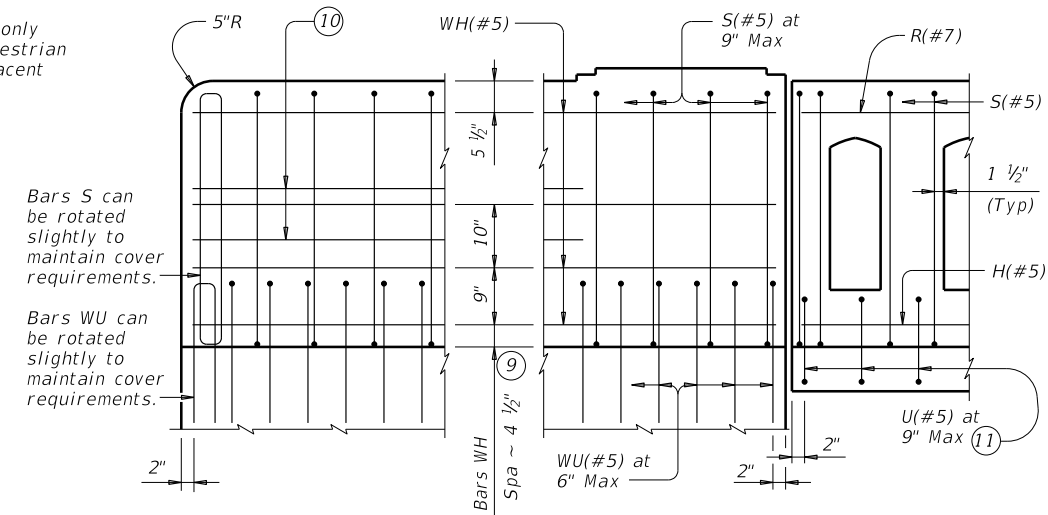
ROADWAY ELEVATION OF RAIL

(Showing without raised sidewalk)



TERMINAL CONNECTION DETAILS

(Showing parapet with Pilaster on 6'-0" Wingwall)



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

(Showing without raised sidewalk)

The use of this railing is restricted to speeds of 45 mph or less.

FIGURE 2-3
Bridge Railing Design
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

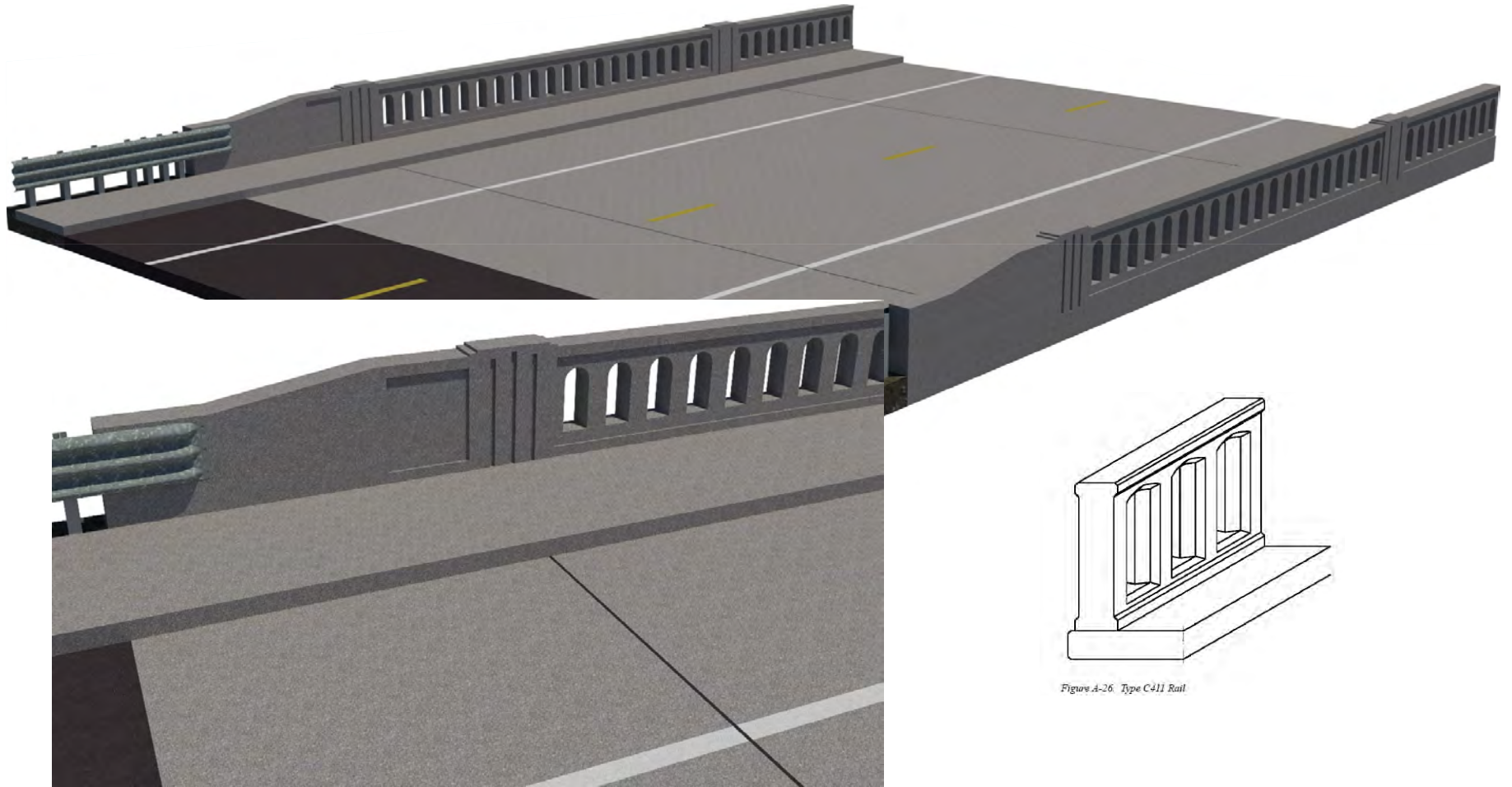
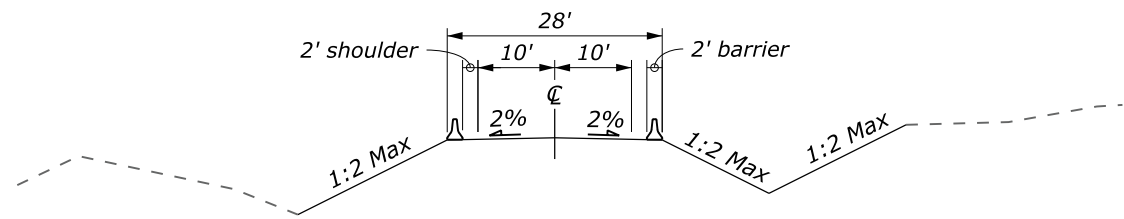
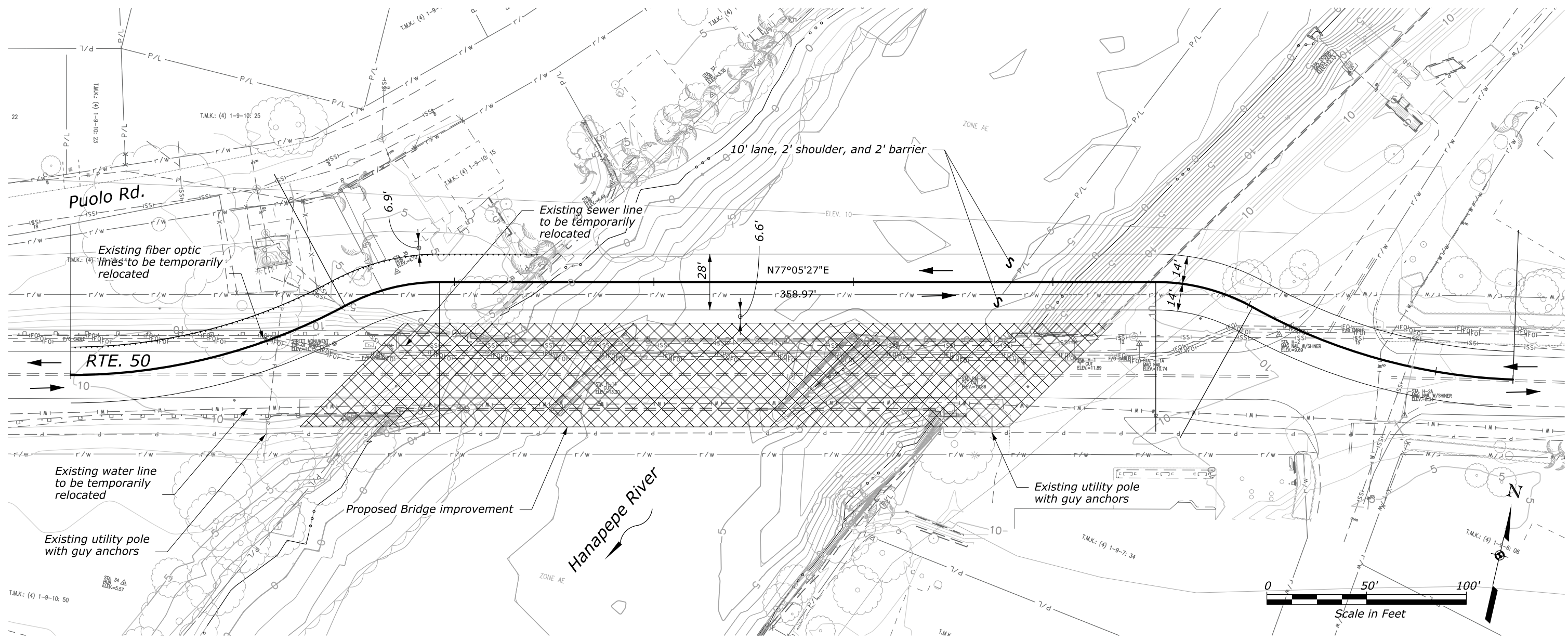


Figure A-26 Type C411 Rail

FIGURE 2-4
Proposed Bridge Rails and End Posts
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



TYPICAL SECTION

FIGURE 2-5
Temporary Vehicular Bypass
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



Aerial image courtesy of Google™ Earth, Image ©2015 Google.

LEGEND


 Temporary Bicycle and Pedestrian Bypass Route

FIGURE 2-6
Temporary Pedestrian Route
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation

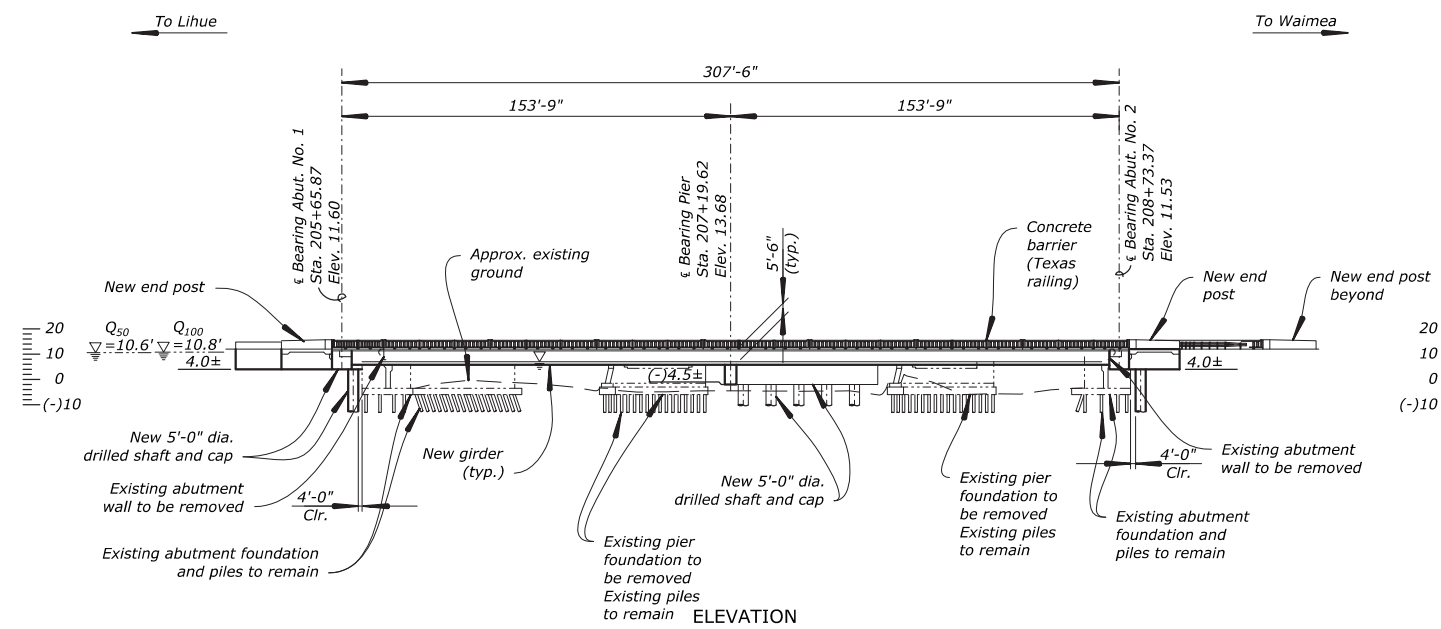
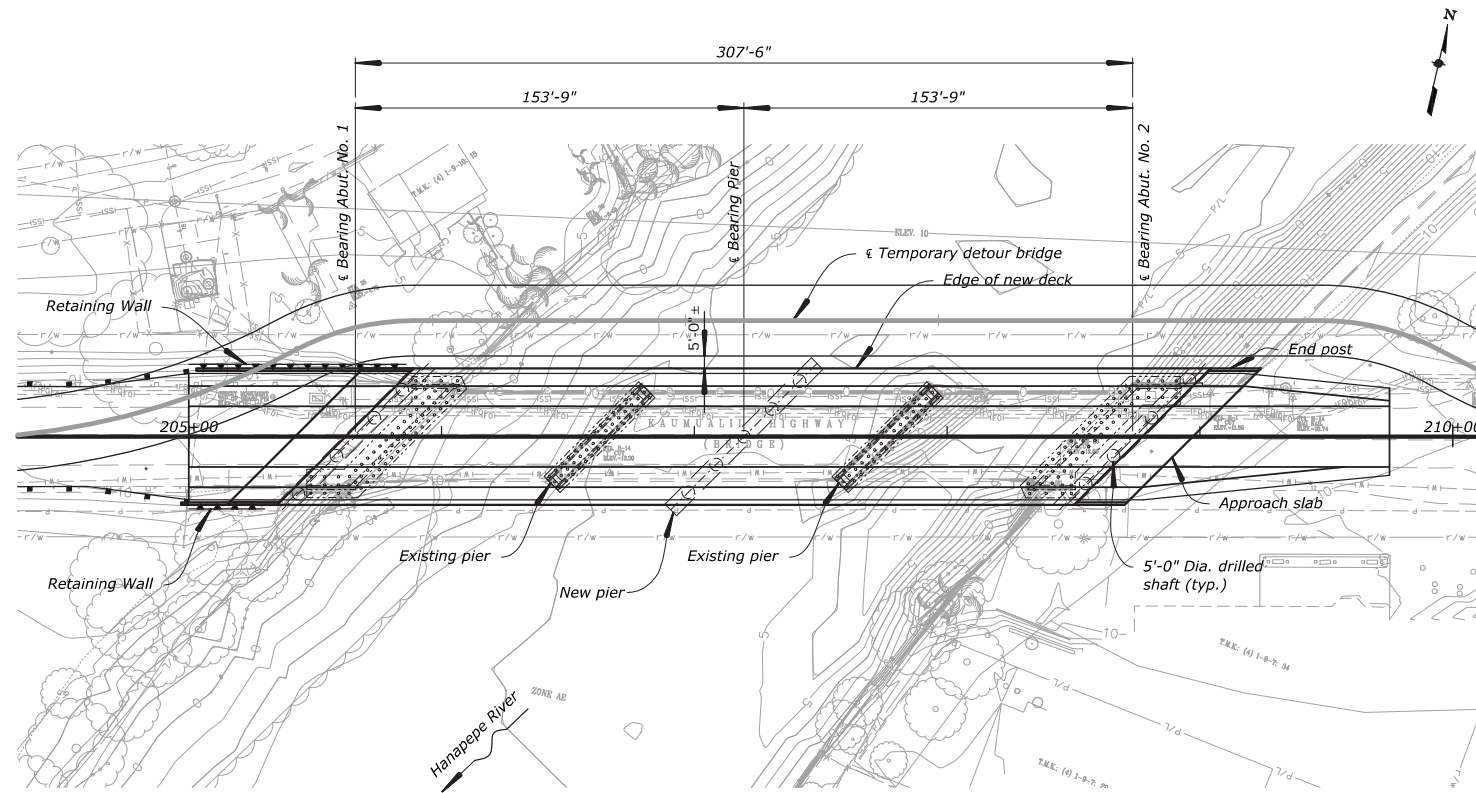


FIGURE 2-7
Bridge Alternative: Two-span Uniform Flange Girder Bridge (Preliminary)
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

Affected Environment, Impacts, and Mitigation

3.1 Topography, Geology, and Soils

3.1.1 Existing Conditions

The geology of Kauai consists of a single great shield volcano, deeply eroded, and partly veneered with much later volcanics that rises 17,000 feet above the surrounding sea floor. At the top of the shield is a caldera 10 to 12 miles across. The southern flank of the shield collapsed to form a fault-bounded trough or depression some 4 miles wide. Lava erupted in the caldera and gradually filled it, except on the higher northwestern side, and eventually spilled over its low southern rim into the trough and down into the sea (Macdonald and Abbott, 1970). Hanapepe is to one side of the collapsed shield. Hanapepe Bay and the nearby Puolo salt flats may be the result of the overflow at the edge of the infilling.

Elevations surrounding the proposed project range from sea level to approximately 12.75 feet amsl. The terrain is generally flat.

The Natural Resources Conservation Service identifies the following three soil types in the project area (Foote et al., 1972; National Resources Conservation Service, 2014) (see Figure 3-1):

- Jaucus loamy fine sand, dark variant, 0 to 8 percent slopes (JkB). This soil occurs near the ocean in areas where the water table is relatively high and salts have accumulated. It is somewhat poorly drained in depressions, but excessively drained on knolls. The depression normally contains a layer of silty alluvial material with a high concentration of soluble salts. The water table is normally within a depth of 30 inches. These soils are classified in hydrologic soil group A, which are soils with a high infiltration rate (low runoff potential) with a high rate of water transmission.
- Hanalei silty clay loam, 0 to 2 percent slopes (HmA). This series consists of somewhat poorly drained to poorly drained soils on bottom lands on the islands of Kauai and Oahu, and developed in alluvium derived from basic igneous rock. They are gently sloping. Elevations range from nearly sea level to 300 feet amsl. These soils are classified in hydrologic soil group B, which are soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained, or well-drained soils that have moderately fine texture to moderately coarse texture.
- Pakala clay loam, 0 to 2 percent slopes (PdA). This series consist of well-drained soils on alluvial fans and bottom lands on Kauai. These soils developed in alluvium. They are nearly level to moderately sloping. Elevations range from nearly sea level to 400 feet amsl. These soils are classified in hydrologic soil group B, which are soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture.

Six geotechnical borings were drilled at locations corresponding to the bridge abutments, piers, and approaches. Near surface soils were denser or stiffer, but transitioned to softer soils at lower depths. Groundwater was encountered at depths ranging from about 6.5 feet to 13.3 feet below ground surface.

3.1.2 Potential Impacts and Mitigation Measures

The proposed project is not constrained by geological and topographic site conditions, nor would it affect any unique geological formations. To address the presence of soft subgrade soils found in geotechnical investigations and the potential for settlement, deep foundations would be installed to support the proposed replacement bridge. Construction materials would include clean gravel and well-graded granular structural fill as backfill for excavations. Roadway sections would be designed to standard HDOT specifications that consist of asphalt and base course over sub-base course material.

Construction of the bridge and roadway approaches would involve land disturbance that could result in soil erosion. However, the erosion potential is relatively low given the small area of disturbance (approximately 2.3 acres). To minimize the potential for construction-related erosion impacts, best management practices (BMPs) would be developed as part of the project's engineering and design in accordance with the Kauai County Code for grading, grubbing, and stockpiling (Kauai County Code, Chapter 22, Article 7). Other measures would be specified as part of applicable water quality permits obtained from HDOH. See Section 3.2, Climate and Air Quality, and Section 3.3, Hydrology and Water Quality, for a list of applicable BMPs.

3.2 Climate and Air Quality

3.2.1 Existing Conditions

Climate in the area of the proposed project is moderated by the coastal location and prevailing northwest tradewinds. The average maximum daily temperature is approximately 80 degrees Fahrenheit (°F), with an average minimum of 60°F. Mean annual rainfall at the project location is approximately 26.6 inches. Rainfall is typically highest in November and December and lowest in June (Giambelluca et al., 2013).

Kauai, like the rest of the State, is in attainment with Federal and State air quality standards.¹ HDOH operates a network of air quality monitoring stations at locations around the State. The only monitoring station on Kauai is in the Niumalu subdivision, near Lihue. As reported in the Annual Summary of Air Quality Data for 2013 (HDOH, 2014c), the pollutants monitored at the Niumalu station are particulate matter less than 2.5 microns (PM_{2.5}), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Carbon monoxide (CO) monitoring was shut down by HDOH as of April 25, 2013. The readings at this location show that criteria pollutant levels were below State and Federal ambient air quality standards (see Table 3-1).

TABLE 3-1
Kauai Air Monitoring Station (Niumalu) Data (2013)

Pollutant	Annual Mean	Federal Air Quality Standard (Primary)	State Air Quality Standard
PM _{2.5} (24-hour)	3.9 µg/m ³	35 µg/m ³	None
NO ₂ (Annual)	0.002 ppm	53 ppb	0.04 ppm
SO ₂ (1-hour)	0.001 ppm	75 ppb	None
SO ₂ (3-hour)	0.001 ppm	0.50 ppm ^a	0.50 ppm
SO ₂ (24-hour)	0.001 ppm	None	0.14 ppm
CO (1-hour)	0.5 ppm ^b	35 ppm	9 ppm

HDOT currently does not evaluate the future threat of sea level rise (SLR) as related to climate change when constructing within the coastal zone. The School of Ocean and Earth Science and Technology (SOEST) at the University of Hawaii is studying the potential threat of SLR on the islands. SOEST has projected a schedule of global mean SLR based on published best- and worst-case scenarios that SOEST suggests could be adopted in Hawaii in lieu of a local analysis (Table 3-2).

¹ Exceedances of SO₂ and PM_{2.5} have been reported on Hawaii Island, but these are associated with the volcano which is considered a natural, uncontrollable event. Therefore, the State is requesting exclusion of these exceedances from attainment/nonattainment determination (HDOH, 2014c).

TABLE 3-2
Schedule of Sea Level Rise 2011 to 2100

Sea Level Rise	Worst case	Best Case
1 foot	2040	2050
2 feet	2050	2070
3 feet	2070	2090

SOURCE: SOEST, 2016.

The proposed Hanapepe River Bridge would be designed for a life span of 75 years. The elevation of the proposed bridge deck is approximately 13 feet. It is anticipated that SLR would not affect the use of the bridge during its lifetime under the best-case scenario (best-case SLR of 3 feet by 2090), nor under the worst-case scenario if 1 foot SLR per 10 years is assumed out to 2090 (giving a worst-case SLR of 5 feet by 2090). However, adjacent roadways with lower elevations could be affected by SLR before the Hanapepe River Bridge. It is anticipated that SLR will be addressed in the design if a future bridge is required to cross Hanapepe River at the existing bridge location.

3.2.2 Potential Impacts and Mitigation Measures

Short-term, Construction-related Emissions

Short-term impacts on air quality may result from project construction. BMPs would be employed to minimize emissions. As further discussed below, impacts could be associated with the following two types of pollutants: (1) fugitive dust from vehicular movement and soil disturbance, and (2) exhaust emissions from onsite construction equipment. Overall air quality impacts are expected to be insignificant because the construction period is of limited duration and impacts would be minimized with the implementation of BMPs for dust control and exhaust emissions.

Fugitive Dust. Construction activities would incorporate fugitive dust emission control measures in compliance with provisions of HAR Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust and Kauai County Code, Chapter 22, Article 7. Measures that are expected to be used to control airborne emissions include the following:

- Use water, dust fences, disturbance area limitations, and re-vegetation to minimize dust emissions
- Stabilize all disturbed areas with erosion control measures
- Cover open-bodied trucks whenever hauling material that can be blown away
- Revegetate disturbed area as soon as practical after construction
- Stabilize construction entrances to avoid offsite tracking of sediment
- Stabilize sites that would not be redisturbed for 21 or more days with grass or gravel

Exhaust Emissions. Emissions from engine exhausts of onsite mobile and stationary construction equipment could also affect air quality. Emission impacts would be minimized by requiring the Contractor to use vehicles that are properly maintained. Nitrogen oxide emissions from diesel engines can be relatively high compared to emissions from gasoline-powered equipment. However, the standard for nitrogen oxide is set on an annual basis and is unlikely to be violated by emissions from short-term use of construction equipment. CO emissions from diesel engines are low and are expected to be negligible compared to vehicular emissions generated on the highway.

Long-term Impacts on Air Quality

This project would not result in any changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that can cause an increase in emissions. As such, this project would generate no changes in air quality impacts for criteria pollutants regulated under the Clean Air Act (CAA) and would not be linked with any special mobile source air toxics (MSAT) concerns.

The U.S. Environmental Protection Agency (USEPA) regulations for vehicle engines and fuels would cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA's Motor Vehicle Emission Simulator model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050. Vehicle miles of travel are projected to increase by over 100 percent. This would both reduce the background level of MSAT and possibly generate minor MSAT emissions from this project.

3.3 Hydrology and Water Quality

3.3.1 Surface Water and Groundwater

The Hanapepe River is in the Hanapepe Watershed which has a drainage area of approximately 27 square miles and drains the southwest summit slopes of Mount Waialeale (FEMA, 2010). The drainage area is relatively long and narrow, approximately 11.5 miles long by 2.5 miles wide. The upper reach flows through agricultural lands. The lower reach flows through urbanized land through Hanapepe Town.

The National Wetlands Inventory program identifies one wetland/water type within the survey area: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded.

3.3.2 Waters of the U.S.

Biologists with SWCA Environmental Consultants (SWCA) conducted fieldwork to delineate Waters of the U.S. on September 29, 2014 (see Appendix A). Waters of the U.S. refers to wetlands and non-wetland waters under Federal jurisdiction for regulatory purpose. For determining the presence of wetlands, the biologists used methods prescribed by the USACE Wetlands Delineation Manual (USACE, 1987) and the Supplement for the Hawaii and Pacific Islands Region (USACE, 2012). Based on these documents, jurisdictional wetlands are identified using the following three criteria:

- Hydric soils—soils permanently or seasonally saturated by water
- Hydrophytic vegetation—plants adapted to life in water or waterlogged conditions
- Wetland hydrology—areas periodically inundated or have soils saturated to the surface at some time during the growing season

The single sampling point evaluated by SWCA did not meet the three-criterion test indicative of wetland conditions pursuant to the USACE Wetlands Delineation Manual (USACE, 1987) and the Supplement for the Hawaii and Pacific Islands Region (USACE, 2012). Although the point was dominated by hau (*Hibiscus tiliaceus*), a facultative species, no hydric soil indicators or wetland hydrology were observed. The remaining areas outside of the river are composed of pavement, concrete, residential yards, and ornamental landscaping. Because of the lack of hydrophytic plants seen in these areas, no additional sampling points were assessed in the survey area. No wetlands were identified within the project area.

3.3.3 Non-wetland Waters

A single perennial non-wetland water (Hanapepe River) was identified in the survey area (see Figure 3-2). The original drainage course appears modified (as indicated by riprap and vertical concrete walls) and the river is surrounded by urban development.

The stretch of Hanapepe River in the project area was determined to be tidally influenced because of the presence of marine/estuarine fish (striped mullet [*Mugil cephalus*] and great barracuda [*Sphyraena barracuda*]) observed during fieldwork. The high tide line was determined at the line of debris and vegetation. The Mean High Water line is 0.59 feet amsl, and the Mean Higher High Water is 1.017 feet amsl (NOAA, 2014). Downstream of the survey area, the Hanapepe River flows south and eventually empties into Hanapepe Bay roughly 0.35 mile from the survey area.

3.3.4 Water Quality

The Federal CWA requires states to collect and review surface water quality data and related information, and to prepare and submit biennial lists of waterbodies that are impaired (that is, not meeting State water quality standards) to USEPA. The current list is included in the 2014 State of Hawaii Water Quality Monitoring and Assessment Report (HDOH, 2014d). Hanapepe River is listed as a 303(d) Impaired Waterbody because the standard for turbidity is not met.

For all impaired waters, HDOH is required to develop the Total Maximum Daily Load (TMDL), which is the maximum amount of a pollutant (from point and nonpoint sources) that a waterbody can receive and still meet water quality standards, and to establish an allocation of that amount to the pollutant's sources. Because there is a large demand for TMDL calculations, HDOH has assigned a priority of low, medium, or high to each of the impaired waters listed based on the severity of pollution and how the water is used. The Hanapepe River has been assigned a low priority and limits have not been established.

3.3.5 Potential Impacts and Mitigation Measures

Short-term Construction Impacts

The project would involve demolition, excavation, grading, and construction in the stream and on the streambanks. Temporary impacts to Waters of the U.S. are anticipated to comprise approximately 0.84 acre. This impact refers to project elements located within jurisdictional waters only during the construction period, such as piers for the temporary bypass bridge and isolation barriers needed to provide a dry work area.

Impacts because of in-water construction would be minimized and mitigated through BMPs including, but not limited to, the following:

- Construct and maintain barriers to isolate and confine in-water work areas to prevent sediment, petroleum products, chemicals, and other liquids and solids from entering Waters of the U.S.
- Remove and properly dispose of barrier collected material

Erosion would be reduced by implementing BMPs during construction. Because new disturbances would exceed 1 acre, an NPDES permit (Notice of Intent [NOI] Form C) would be obtained under CWA Section 402. An approved Storm Water Pollution Prevention Plan would be held onsite. BMPs to protect water quality include the following:

- Sedimentation via onsite drainage would be minimized through BMPs and/or erosion control devices
- Stabilize all disturbed areas with erosion control measures
- Revegetate disturbed area as soon as practical after construction
- Stabilize construction entrances to avoid offsite tracking of sediment
- All project-related materials and equipment placed in the water should be free of pollutants
- Fueling of land-based vehicles and equipment should take place at least 50 feet away from the water, preferably over an impervious surface

Accidental spills or releases of hazardous materials during construction could degrade the quality of stormwater runoff and reach the Hanapepe River. Temporary stormwater control measures would be implemented to protect water quality in the stream. The potential for accidental spills or releases is low and, if they did occur, would be cleaned up immediately.

Federal (Section 404/401) and State (Stream Channel Alteration) permits would be needed for discharges or fill in regulated waters. Dewatering operations would be conducted in accordance with applicable permit requirements.

Overall, implementation of BMPs would reduce the potential for sediment and/or pollutants to reach downstream waters. Small plumes of sediment could occur, primarily as a result of construction and/or removal of the dewatering/isolation structures; however, any turbidity released as a result of construction activities would be minimal and expected to dissipate quickly.

Long-term Impacts on Waters of the U.S. and Water Quality

Permanent impacts to Waters of the U.S. would result from installation of the replacement bridge structure. Approximately 0.20 acre of Waters of the U.S. would be permanently impacted. This is the combined footprint of bridge elements located within jurisdictional waters, including piers, abutments, and scour protection. These impacts would be included as part of the request for Federal and State authorization for discharge in regulated waters, as discussed above.

Under existing conditions, the roadway is generally crowned and runoff sheet-flows off the pavement, over landscaped areas adjacent to paved shoulders, and into the stream. The bridge replacement project would not change the drainage pattern of stormwater flows. The project would increase the amount of impervious area by approximately 5,501 square feet (0.13 acres), which includes a wider structure surface than the existing bridge and connections to the highway. Because the proposed project is surrounded by rural development, the slight increase in impervious surface area would not have an adverse effect on stormwater runoff entering the river, nor are any other long-term impacts on water quality anticipated.

3.4 Natural Hazards

3.4.1 Flooding

The Hanapepe River Bridge is located within the Federal Emergency Management Agency (FEMA)-regulated floodway of the Special Flood Hazard Area (Zone AE), as shown in Community Panel No. 1500020287F, dated November 26, 2010 (see Figure 3-3). The existing 275-foot-long, arched bridge has an 11- to 13-foot clearance between the channel bottom and the point of the bridge superstructure. Two of the piers are located in the active waterway. The 100-year storm event is expected to overtop the roadway at the bridge. The existing bridge experiences pressure flow during the 100-year storm event.

3.4.2 Seismic Activity

The AASHTO LRFD Bridge Design Specifications (2014) provide minimum design criteria to address potential damages from seismic disturbances. The recommended seismic response parameters for use in design represent ground motion corresponding to an exceedance probability of approximately 7 percent in 75 years for an earthquake with an approximate 1,000-year return period. The AASHTO LRFD Bridge Design Specification scale is from Seismic Zone 1 through 4, where 1 is the lowest level for potential seismic induced ground movement. Kauai is designated Seismic Zone 1.

3.4.3 Tsunami

Tsunamis potentially destructive to the Hawaiian Islands may originate anywhere around the Pacific Rim or may be locally generated by earthquakes in or near the island chain. Approximately 50 tsunamis have been reported in the Hawaiian Islands since the early 1800s. The Hawaii Emergency Management Agency (State Civil Defense) established tsunami evacuation zones and maps for all coastal areas in Hawaii. The Hanapepe River Bridge project area is located within the tsunami evacuation zone (NOAA, 2015).

3.4.4 Potential Impacts and Mitigation Measures

Widening the bridge without raising it would still result in the roadway being overtopped in a 100-year storm event. The roadway would have to be raised substantially—a minimum of 4 feet—to achieve the required freeboard, a 2-foot vertical distance above flood level. Achieving such a clearance would result in significant impacts to adjacent roadways, driveways, and intersections. Therefore, the structure would not be raised as part of the proposed project, but replaced at the existing elevation. To address potential flooding, the proposed bridge would be longer than the existing bridge with bridge abutments located

behind the existing abutments. This means that the width of the river channel would not be narrowed. The proposed bridge would meet or exceed the capacity of the existing bridge to convey stormwater flows and would meet the FEMA requirement of no rise in the 100-year water surface elevation within a floodway, documented by a No-Rise Certification. During construction, a Rain Event Action Plan would provide instructions for preparation and response in the event of impending major rain events, thereby minimizing risk and adverse impacts.

The new bridge would also be designed to meet current standards for seismic performance. Therefore, no significant impacts relative to seismic activity are anticipated with implementation of the proposed project.

The proposed project would not impact the geology of the region and, therefore, would not increase the tsunami risk to the surrounding area. In the event of a tsunami warning, all construction would stop and personnel would evacuate to the safe zone on higher ground *mauka* of Kaumualii Highway. By observing the tsunami warning and moving into the safe zone, the risk to workers in the project area would be minimized.

3.5 Noise

3.5.1 Existing Conditions

The Hanapepe River Bridge is located in a rural town where noise receptors in the immediate environment include a mix of residences, businesses, and community facilities. Traffic on Kaumualii Highway is the primary noise generator.

A noise analysis was not performed because the project does not meet State criteria for when a noise analysis is needed, based on the Highway Noise Policy and Abatement Guidelines (HDOT and FHWA, 2011). Specifically, the proposed project is not a Type I project.

Type I projects are defined as a highway project with one of the following characteristics:

- (1) The construction of a highway on new location
- (2) The physical alteration of an existing highway where there is either:
 - (i) Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition
 - (ii) Substantial Vertical Alteration. A project that removes shielding, therefore, exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor
- (3) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a high-occupancy vehicle (HOV) lane, high-occupancy toll (HOT) lane, bus lane, or truck climbing lane
- (4) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane
- (5) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange
- (6) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane
- (7) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza

3.5.2 Potential Impacts and Mitigation Measures

Construction-related Noise

Construction noise impacts are unavoidable, but would be temporary. Noise levels produced during construction would be a function of the methods employed during each stage of construction. Equipment likely to be used includes the following: drill rig, crane, excavator, backhoe, front-end loader, grader, forklift,

semi-trucks, dump trucks, concrete trucks, compactors, paving equipment, and compressors. Construction Noise Model User's Guide (FHWA, 2006) indicates that the loudest equipment generally emits noise in the range of 80 to 90 decibel(s) (A-weighted scale) (dBA) at a distance of 50 feet, which exceeds permissible levels.

Per HAR §11-46-3, the project area is located in the Class A zoning district which includes all areas equivalent to lands zoned residential and open, and the Class B zoning district which includes lands zoned business and commercial. For mixed zoning districts, HAR §11-46-4(d) states that the primary land use designation will be used to determine the applicable zoning district class and the maximum permissible sound level. Based on the County's zoning map (see Section 4.3.2), surrounding land use designations are nearly evenly divided between residential and open on the *makai* side of Kaumualii Highway and business and commercial on the *mauka* side. Given this distribution, Class A would provide a more conservative characterization of the existing environment. Under Class A, the maximum permissible sound levels are 55 dBA during the daytime (7 am to 10 pm) and 45 dBA during the nighttime (10 pm to 7 am), where maximum permissible sound level for impulsive noise is 10 dBA above the maximum permissible sound levels.

Construction noise is expected to exceed the State's "maximum permissible" property line noise levels, and a Community Noise Permit would be required from HDOH under HAR Chapter 11-46, Community Noise Control. For HDOH to issue a noise permit, the application would need to describe construction activities for the project.

Standard permit restrictions for construction projects include the following:

- No permit will allow construction activities creating excessive noise before 7 am and after 6 pm of the same day.
- No permit will allow construction activities that emit noise in excess of 95 dBA except between 9 am and 5:30 pm of the same day.
- No permit will allow construction activities that exceed the allowable noise levels on Sundays and on certain holidays. Pile driving and other activities exceeding 95 dBA would be prohibited on Saturdays.

The HDOH noise permit generally does not limit the noise level generated at the construction site, but rather the times at which high-volume construction can take place. Before issuing the permit, however, HDOH may require noise mitigations to be incorporated into construction plans (for example, maintenance and proper muffling of construction equipment and onsite vehicles that exhaust gas or air). HDOH may also require the Contractor to conduct noise monitoring. In addition to the noise permit, a noise variance may be requested from HDOH for specific occasions when work hours need to be extended into the evenings and/or on weekends to implement the overall construction schedule.

Long-term Noise Impacts

Replacing the Hanapepe River Bridge would not change highway capacity, traffic counts or operational conditions (that is, the posted speed limits). Therefore, noise levels after the project is completed are expected to be unchanged.

3.6 Hazardous Materials

3.6.1 Existing Conditions

A regulatory database computerized environmental report (CER) was acquired in the form of an Environmental Data Resources (EDR) Radius Map Report with GeoCheck®. The CER is an evaluation of select Federal and State standard source environmental databases that identifies sites within the approximate minimum search distance (AMSD) prescribed by ASTM International (ASTM) E1527-13. CH2M reviewed the sites listed in each environmental database to determine whether the identified sites are suspected to represent a material negative environmental impact to the subject property. The review focused on sites with documented releases that either had contamination left in place or had not been determined to be

protective of human health and the environment with regulatory concurrence of no further action required. The CER is included in its entirety within Appendix B.

The CER identified a total of 19 sites within the AMSD of the proposed project site. All but one of the sites were identified as sites of potential concern of a material negative environmental impact for the proposed project. Six of the 19 listed sites appeared in multiple databases and were evaluated as 1 site. Table 33 summarizes the CER findings and the likelihood each site would affect the proposed construction in the project area. Proximity of the sites of potential concern range from a minimum of 0.09 mile (property at the eastern end of the bridge) to a maximum of 0.51 mile.

The bridge spans a tidally influenced section of the river, where six of the evaluated sites are located in a net cross or downgradient direction of the project area and, therefore, are unlikely to affect the proposed project. Five of the remaining sites listed have received regulatory concurrence of a No Further Action (NFA) determination or have no regulatory involvement. However, a leaking underground storage tank (LUST) site located at the eastern end of the bridge (Western Motors Service) received an NFA status determination with documented soil contamination in place. The closure report for the LUST removal showed soil contamination remaining in the bottom of the tank hold and the four side wall samples were non-detect. Groundwater was encountered in the base of the excavation and no groundwater sampling data was available (IES, 1994).

The remaining listed site (Sakoda Garage, Inc.), with a release and active remediation, was identified within 0.5-mile upgradient of the proposed project. However, the property is distant enough that the proposed project is unlikely to impact contaminated soil on the site.

TABLE 3-3
Computerized Environmental Report Records Findings

Property Name/Address	Distance (Miles)/ Direction	Elevation Relative to Subject Property	Database	Regulatory Status	Likelihood to Affect Proposed Project
Western Motors Service, Inc. 1-3680 Kaumualii Highway, Hanapepe, HI 96716	0.09/East	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (4/19/2001) Two USTs currently in use Four USTs permanently out of use 	Property is located at the east end of bridge abutment. LUST received NFA with soil contamination left in the base of the former tank hold near the depth to groundwater. Groundwater data was not available. Site has potential to impact the proposed project if subsurface work were to extend onto the adjacent property.
Girards Quality Cleaners 3716 Hanapepe Road, Hanapepe, HI 96716	0.1/ Northeast	Higher	EDR US Historic Cleaners	<ul style="list-style-type: none"> No releases or regulatory involvement reported for the property 	While the property is located close to the subject property at a higher elevation, no releases or regulatory involvement is reported. As such, it is unlikely this site would impact the proposed project on the subject property.
Former Hanapepe Repair Shop 4540 Hana Road, Hanapepe, HI 96716	0.13/ East-northeast	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (3/12/2002) Two USTs permanently out of use 	While the property is located close to the subject property at a higher elevation, the site is NFA according to HDOH records (HDOH, 2014a). The site is also upgradient of the Western Motors Service site and would be unlikely to impact the proposed project on the subject property.

TABLE 3-3
Computerized Environmental Report Records Findings

Property Name/Address	Distance (Miles)/ Direction	Elevation Relative to Subject Property	Database	Regulatory Status	Likelihood to Affect Proposed Project
Trademark Collision Call and G&K Auto Repair Shop 3716 Hanapepe Road, Hanapepe, HI 96716	0.17/ Northeast	Higher	EDR US Historic Auto Station	<ul style="list-style-type: none"> No releases or regulatory involvement reported for the property 	While the property is located close to the subject property at a higher elevation, no releases or regulatory involvement is reported. As such, it is unlikely this site would impact the proposed project on the subject property.
Cilia's Service Station 1-3509 Kaumualii Highway, Hanapepe, HI 96716	0.19/ West	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (6/22/2005) Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located west of the subject property and presumed to be crossgradient. As such, it is unlikely this site would impact the proposed project on the subject property.
Organizational Maintenance Shop 5 1-3460 Kaumualii Highway, Hanapepe, HI 96716	0.21/ West-southwest	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (12/9/1998) One UST permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located west-southwest of the subject property and presumed to be crossgradient. As such, it is unlikely this site would impact the proposed project on the subject property.
Longie's Cracked Seed – 3508 Hanapepe Road, Hanapepe, HI 96716	0.22/ West	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (10/30/2008) Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located west of the subject property and presumed to be crossgradient. As such, it is unlikely this site would impact the proposed project on the subject property.
Denny's Repair and Service 4545 Kona Road, Hanapepe, HI 96716	0.28/ East-northeast	Higher	LUST	<ul style="list-style-type: none"> Site listed as NFA (12/29/1998) Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). While this property is located at a higher elevation and upgradient/upstream of the subject property, and given the proximity of the site to the river as compared to the proximity of the site to the subject property of the proposed project, the site is more likely to impact the river and not the soil on the subject property. In addition, contamination from the river onto the subject property is not likely to affect the proposed project on the subject property.

TABLE 3-3
Computerized Environmental Report Records Findings

Property Name/Address	Distance (Miles)/ Direction	Elevation Relative to Subject Property	Database	Regulatory Status	Likelihood to Affect Proposed Project
Sakoda Garage, Inc. P.O Box 143/3954 Hanapepe Road, Hanapepe, HI 96716	0.32/ East-northeast	Higher	SHWS, LUST	LUST <ul style="list-style-type: none"> Site listed as NFA (9/16/2008) Three USTs permanently out of use SHWS <ul style="list-style-type: none"> Lead: HEER Hazard priority: Low Controls required to manage contamination Contamination not reported Response ongoing 	While this property is located at a higher elevation and upgradient/upstream from the subject property, given the proximity of the site to the river compared to the proximity of the site to the subject property of the proposed project, the site is more likely to impact the river and not the soil on the subject property. In addition, contamination from the river onto the subject property would not be likely to affect the proposed project on the subject property.
Hanapepe Base Yard 4380 Lele Road, Hanapepe, HI 96716	0.42/ West	Higher	LUST	<ul style="list-style-type: none"> Site listed as NFA (9/23/1999) Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located downstream/ downgradient of the subject property. As such, it is unlikely this site would impact the proposed project on the subject property.
UST Release at Port Allen 4353 Waialo Road, Eleele, HI 96705	0.51/ Southeast	Higher	SHWS	<ul style="list-style-type: none"> Lead: HEER Total petroleum hydrocarbons, diesel-range organics in soil No hazard present for Unrestricted Residential Use NFA with unrestricted use (9/6/2006) 	According to HDOH records, the site is NFA (HDOH, 2014b). In addition, the site is located downstream/ downgradient of the subject property. As such, it is unlikely this site would impact the proposed project on the subject property.
Port Allen Bulk Petroleum Storage Terminal 4350 Waialo Road, Port Allen, HI 96716	0.51/ Southeast	Higher	SHWS	<ul style="list-style-type: none"> Lead: HEER Hazard undetermined and contamination not reported Closed – documentation inadequate to evaluate risk (8/23/2004) 	According to HDOH records, the site is closed (HDOH, 2014b). In addition, the site is located downstream/ downgradient of the subject property. As such, it is unlikely this site would impact the proposed project on the subject property.

Notes:

HEER = Hazard Evaluation and Emergency Response

SHWS = State Hazardous Waste Site

There is also potential for the bridge to contain asbestos-containing material (ACM) and lead based paint (LBP). Potential ACM on bridge structures includes abutment forms, waterproof membranes between the deck and the paving, geo-textiles, asbestos cement pipes and conduits, textured surfaces, and asbestos

concrete. LBP may be present in paint chips or waste generated during removal of paint from bulk material, including striping paint grindings from asphalt pavement.

3.6.2 Potential Impacts and Mitigation Measures

Construction-related activities would require the removal, demolition, and rehabilitation of existing bridge structures. A survey would be performed at the existing structure to determine whether ACM, LBP, or both are present. If asbestos is present or suspected, an Asbestos Abatement Plan will be prepared to establish the appropriate protocols for abatement. If LBP is identified, work practices (in accordance with applicable State and Federal regulations) would be implemented before LBP removal to contain debris, control airborne dust, and properly dispose of materials with LBP.

Construction-related activities would also require the use of hazardous materials which may include lubricants of various weights and viscosities, hydraulic fluid for transit and construction equipment, cleaning products, and materials used for corrosion protection such as paint or other coatings on exposed steel. Based on the results of the CER, only one site has a likely potential for petroleum or lead to be encountered within the proposed project area. Proposed activities in the project area would not impact the identified sites of potential concern.

In accordance with the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects - FP-14* (FHWA, 2014), a Spill Prevention, Control, and Countermeasure (SPCC) plan would be developed, if required, at least 2 days before the beginning of work. If a SPCC is not required, a hazardous spill plan would be developed at least 2 days before the beginning of work which would describe preventative measures including the location of refueling and storage facilities, and the handling of hazardous materials. Furthermore, the hazardous spill plan would describe actions to be taken in case of a spill.

The contents and requirements of the hazardous materials spill plan would include the following measures:

- Equipment fluid leaks would be repaired immediately.
- Absorbent material manufactured for containment and cleanup of small hazardous materials spills would be kept at the project site.
- In the event of a large hazardous materials spill, or if unanticipated hazardous materials are encountered within the project site, the HDOH HEER Office will be contacted immediately.

Hazardous waste generated as a result of removal, demolition, and rehabilitation activities would be managed to the highest and best end use, and in a manner to ensure the protection of human health (workers, visitors to the site, and the general public) and the environment in accordance with applicable laws, rules, and regulations.

A hazardous waste determination for all anticipated waste would be prepared to determine whether the waste is classified as hazardous waste, universal waste, excluded waste, waste water, or solid waste. Before commencement of removal, demolition, and rehabilitation activities related to ACM or LBP, all applicable permits would be obtained from and notifications be provided to the Federal, State and local permitting and regulatory agencies with jurisdiction over this work. These permits and notifications would be documented in the project files.

If ACM is present, a State of Hawaii Certified Asbestos Supervisor (CAS) would be designated to supervise the asbestos removal and to ensure that the handling and removal of asbestos is accomplished by certified asbestos workers, pursuant to HDOH standards. Furthermore, the removal and disposal of asbestos would be performed such that it meets the requirements of USEPA regulation 40, *Code of Federal Regulations* (CFR) Part 61, local health department regulations, and all other applicable regulations.

If LBP is present, a Certified Industrial Hygienist (CIH) would be designated to provide continuous onsite monitoring of LBP removal. The CIH would ensure all appropriate labor, materials, and equipment are

furnished and maintained to identify and implement safe removal/remediation, proper handling, transportation and disposal of LBP in compliance with all applicable regulatory requirements such as, but not limited to, ASTM D3335, 40 CFR Part 260, 40 CFR Part 261, 40 CFR Part 262, 40 CFR Part 263, 40 CFR Part 264, and 40 CFR Part 265.

3.7 Flora

3.7.1 Existing Conditions

SWCA biologists conducted field reconnaissance surveys of the project area on September 17 and 29, 2014 (see Appendix C). A pedestrian survey was conducted to record common plant species and vegetation types, as well as rare or listed species. No Federally or State-listed threatened, endangered, or candidate plant species were recorded in the survey area. Three Native Hawaiian plants were observed: uhaloa (*Waltheria indica*), milo (*Thespesia populnea*), and hau (*Hibiscus tiliaceus*).² These species are indigenous (found in Hawaii and elsewhere) and are common in disturbed areas.

The vegetation in the survey area is composed of the following three main vegetation types:

- **Ruderal Vegetation:** This vegetation type is dominated by a mix of ruderal plant species—weedy, non-native grasses and herbaceous plants—that are abundant in heavily disturbed areas and along the edges of roads. Common species are swollen fingergrass (*Chloris barbata*), Guinea grass (*Urochloa maxima*), buffelgrass (*Cenchrus ciliaris*), Burmuda grass (*Cynodon dactylon*), wire grass weed (*Eleusine indica*), false ragweed (*Parthenium hysterophorus*), morning glory (*Ipomoea obscura*), khaki weed (*Alternanthera pungens*), lion's ear (*Leonotis nepetifolia*), and common wireweed (*Sida acuta*). Ruderal trees and shrubs are less common and include koa haole (*Leucaena leucocephala*), opiuma (*Pithecellobium dulce*), and African tulip (*Spathodea campanulata*) seedlings. Mexican creeper (*Angigonon leptopus*) is climbing in trees along Kaumualii Highway.
- **Ornamental Landscaping:** Landscaped areas are characterized by ornamental trees and shrubs scattered in mowed weedy areas. A few royal Poinciana (*Delonix regia*) are planted with Macarthur palms (*Ptychosperma macarthurii*) along Kaumualii Highway. Other ornamental plantings include monkeypod trees (*Samanea saman*), mango (*Mangifera indica*), wedelia (*Sphagneticola trilobata*), hibiscus (*Hibiscus* spp.), bird of paradise (*Strelitzia reginae*), bauhinia (*Bauhinia* spp.), and mock orange (*Murraya paniculata*).
- **Mixed Riparian Forest:** A thick forest of mixed riparian trees is present along the Hanapepe River. Red mangrove (*Rhizophora mangle*) is the most abundant species, particularly along the water's edge. The indigenous hau also forms monotypic stands along the river. Coconut trees (*Cocos nucifera*), milo, and kiawe (*Prosopis pallida*) are scattered in the area.

3.7.2 Potential Impacts and Mitigation Measures

Construction of the proposed project would require trimming and/or removing vegetation. Overall, the vegetation is disturbed from previous and current land use activities and is typical of urbanized areas. No threatened or endangered plants were found. In addition, no designated plant critical habitat occurs nearby. Nevertheless, the following BMPs related to botanical resources would be implemented:

- Natural vegetation, especially grass, would be retained where possible.
- Construction traffic would be routed to avoid existing or newly planted vegetation.
- Removed vegetation would not be deposited along the banks of any watercourse.
- All removed vegetation would be disposed of away from the site within 3 months of being removed.

² The plant names used in this assessment follow Wagner et al. (2012), Wagner and Herbst (2003), and Wagner et al. (1999).

- The Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws would be conformed to.
- Dirt, plant, and foreign material would be removed from vehicles and equipment before mobilizing to the project site to prevent introduction of noxious weeds and non-native plant species into the work site.

Based on the lack of sensitive botanical resources and implementation of BMPs, the proposed project is not expected to have a significant adverse impact on botanical resources.

3.8 Fauna

SWCA biologists investigated the presence of known or suspected threatened, endangered, or candidate wildlife species during the September 2014 field surveys (see Appendix C). Fauna surveys consisted of a pedestrian survey before 11 am or after 4 pm when wildlife was most likely to be active. Visual and auditory observations were made.

In addition to the field survey, the U.S. Fish and Wildlife Service (USFWS) provided a listing of species protected under the Federal Endangered Species Act (ESA) that may occur on Kauai along with recommended measures that USFWS believes will reduce impacts on each species (USFWS, 2014). Conservation measures have been incorporated into Section 3.8.6, below.

3.8.1 Avifauna

The bird species observed in and near the project limits are species typically found in disturbed lowland areas. In all, nine bird species were documented: Cattle egret (*Bubulcus ibis*), Common myna (*Acridotheres tristis*), domestic chicken (*Gallus*), Hwamei (*Garrulax canorus*), and Japanese white-eye (*Zosterops japonicas*), Northern cardinal (*Cardinalis cardinalis*), Rock pigeon (*Columbia livia*), Spotted dove (*Streptopelia chinensis*), and Zebra dove (*Geopelia striata*). All of the species were introduced to the Hawaiian Islands. The cattle egret and northern cardinal are non-native birds protected under the Migratory Bird Treaty Act (MBTA). The native migrant Pacific golden-plover (*Pluvialis fulva*) could also exist in the survey area.

During the SWCA survey, no listed waterbirds were observed. However, four waterbird species listed as endangered under the ESA and State of Hawaii Endangered Species list could potentially occur in the area because suitable loafing and foraging habitat is available: Hawaiian gallinule or alae ula (*Gallinula galaeata sandvicensis*), Hawaiian coot or alae keokeo (*Fulica alai*), Hawaiian stilt or aeo (*Himantopus mexicanus knudseni*), and Hawaiian duck or koloa maoli (*Anas wyvilliana*). Suitable nesting habitat for the duck, coot, and gallinule is also present.

The Federally and State-listed endangered Hawaiian goose or nene (*Branta sandvicensis*) could also browse within the ruderal vegetation along the river banks on occasion. However, suitable nesting habitat for nene is not present.

Seabirds of concern include the Hawaiian petrel (*Pterodroma sandwichensis*) listed as endangered under the ESA and by the State of Hawaii, the Newell's shearwater (*Puffinus auricularis newelli*) listed as threatened under the ESA and by the State of Hawaii, and the band-rumped storm-petrel (*Oceanodroma castro*) a proposed endangered for listing species under the ESA and listed as endangered by the State of Hawaii. These birds may fly over the project at night while travelling to and from the ocean and upland nesting sites in the mountainous interior of Kauai. No suitable nesting sites for these species are present in the project area.

3.8.2 Mammalian Species

Hawaiian Hoary Bat

The Hawaiian hoary bat or opeapea (*Casiurus cinereus semotus*) is listed as an endangered species under the ESA and the State of Hawaii's Endangered Species List. It is the only native terrestrial mammal species that is still present within the Hawaiian Islands. A survey specifically for Hawaiian hoary bats was not conducted,

but suitable habitat for roosting and foraging was noted during the biological survey. These animals are insectivores and are regularly observed foraging over streams, reservoirs, and wetlands up to 300 feet offshore. The river corridor in the survey area would be considered suitable bat foraging habitat.

Hawaiian hoary bats typically roost in dense canopy foliage or in subcanopy when canopy is sparse, with open access for launching into flight. Hawaiian hoary bats have been observed roosting in coconut and mango trees, which are present in the survey area. Other trees in the survey area that have dense canopy foliage and could also be suitable roost trees include milo, red mangrove, and hau.

Other Terrestrial Mammals

Dogs (*Canis familiaris*) and cats (*Felis catus*) are likely to enter the area because of nearby residences. Other mammals that can be expected onsite include mice (*Mus musculus*), rats (*Rattus spp.*), and mongoose (*Herpestes javanicus*).

Hawaiian Monk Seal

The Hawaiian monk seal (*Neomonachus schauinslandi*) is listed as endangered under the ESA and is listed on the State of Hawaii Endangered Species List. It is also protected by the Marine Mammal Protection Act of 1972. Hawaiian monk seals spend most of their life at sea, but also rely on land habitat for resting, molting, pupping, nursing, and avoiding marine predators. The seals are considered foraging generalists that generally hunt outside of the immediate shoreline in waters 60-300 feet deep. There are also accounts of seals traveling up rivers and streams, particularly on Hawaii Island and Kauai to feed and rest.

3.8.3 Terrestrial Invertebrates

No reptiles or amphibians were seen during the survey. None of the terrestrial reptiles or amphibians in Hawaii are native to the islands.

3.8.4 Aquatic and Marine Fauna

SWCA made surface observations of fishes and compiled a list of fishes and aquatic invertebrates for the project area from the Hawaii Division of Aquatic Resources (DAR) Watershed Atlas (Parham et al., 2008). The lists may be found in the Biological Assessment (BA) (Appendix C). The assessment notes that some of the fish—notably four species of endemic oopu (or gobies) — are typically found in the estuarine region of the river, but are included in the list because they are amphidromous and pass through the Hanapepe River Bridge area during two periods of their life cycle.

Sea Turtles

The green sea turtle (*Chelonia mydas*) is listed as threatened under ESA and by the State of Hawaii. The hawksbill sea turtle (*Eretmochelys imbricate*) is listed as endangered under ESA and by the State of Hawaii. Both species share similar habitat requirements and biological characteristics.

Green sea turtles are the most common sea turtle found in the Hawaiian archipelago. They are genetically distinct from other green sea turtle populations. Green sea turtles are generally common along all coastlines of the main Hawaiian islands. Individuals have been observed transiting Hawaii rivers up to two miles inland.

Hawksbill sea turtles are known to exhibit high site fidelity, returning to the same resting spot night after night. They can be found near rock outcrops and high energy shoals, which are optimum sites for sponge growth, a preferred food source. Hawksbill turtles are not regularly reported from Kauai.

3.8.5 Critical Habitat

No designated or proposed critical habitat for threatened or endangered species occurs in the project area.

3.8.6 Potential Impacts and Mitigation Measures

3.8.6.1 Seabirds

The project area does not provide suitable nesting or foraging habitat for the protected seabirds. However, breeding individuals may fly over the area at night while traveling between upland nesting and ocean foraging sites. Disorientation and fall out as a result could occur to individuals attracted to nighttime lighting. The following conservation measures are proposed to minimize the potential for light attraction.

- Construction activity would be restricted to daylight hours during the seabird peak fallout period (September 15 to December 15), thereby avoiding the use of nighttime lighting that could attract seabirds. To minimize impacts to the surrounding residential areas, night work is not anticipated.
- All outdoor lights would be shielded to prevent upward radiation.
- Outside lights not needed for security and safety would be turned off from dusk through dawn during the peak fallout period (September 15 to December 15).

Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

Because all impacts on the Hawaiian petrel and Newell's shearwater would be discountable, the proposed project may affect, but is not likely to adversely affect individuals or populations of these species.

Because all impacts on the band-rumped storm petrel would be discountable, the proposed project is not likely to jeopardize the continued existence of individuals or populations of the species.

3.8.6.2 Waterbirds

Permanent removal of foraging and nesting habitat would constitute a long-term direct impact. Of the 1.9 acres identified as the project's permanent impact area, only a small portion constitutes foraging habitat for waterbirds, given that much of the project area is roadway. Temporary vegetation removal would be restored following construction. This impact would be discountable because of the small area of impact and availability of nearby foraging and nesting habitat for displaced waterbirds to use.

Short-term direct impacts to waterbirds could occur if human activity, noise, and vegetation removal disrupt nesting adults, cause abandonment of nests, ducklings, and/or chicks, which in turn increase the likelihood of nest failure, exposure, or trauma. However, short-term direct impacts are unlikely to occur with implementation of the following conservation measures.

- Although there is a lack of suitable nesting habitat within the project area, if a waterbird nest with eggs or chicks/ducklings is discovered in the project area during construction, work will cease within 100 feet of the nest until the chicks/ducklings have fledged.
- Waterbird nests, chicks, or broods found in the area before or during construction will be reported the USFWS within 48 hours.
- If an endangered Hawaiian waterbird is present or lands in the area during ongoing activities, all activities within 100 feet of the bird will cease, and the bird will also not be approached. Work may continue after the bird leaves the area of its own accord.

Because all impacts on the Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, and Hawaiian duck would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect individuals or populations of these species.

3.8.6.3 Nene

Removal of foraging habitat for the staging area north of the bridge would remove a potential food source, and negatively impact nene that may forage near the bridge. This impact would be short term and would

only occur for the duration of construction. Although reducing the amount of available forage could impact the health of individuals, the small area removed would not be likely to affect nest success or population growth. Furthermore, abundant foraging habitat is available adjacent to the project area into which the nene could move.

Implementation of the proposed improvements would not increase the potential for vehicle strike because the replacement bridge will have two 12-foot-wide travel lanes like the existing bridge and the posted speed limit will remain at 35 mph.

The following conservation measures would be taken to reduce or eliminate project-related impacts.

- All regular on-site staff will be trained to identify nene and the appropriate steps to take if nene are present.
- If a nene is found in the project area, all activities within 100 feet of the bird will cease, and the bird will not be approached. If a nest is discovered, USFWS will be contacted. If a nest is not discovered, work may continue after the bird leaves the area of its own accord.

Because all impacts on the nene would be discountable, the proposed project may affect, but is not likely to adversely affect individuals or populations of the species.

3.8.6.4 Hawaiian Hoary Bats

Bats may roost in trees present in the project limits, or they may forage throughout the area. Direct impacts to bats would occur only if a juvenile bat too small to fly, but too large to be carried by a parent, was present in a trimmed or cut down tree. The possibility of adversely affecting Hawaiian hoary bats as a result of the proposed project is small. However, the following measures would be taken to avoid impacts.

- Any fences erected as part of the project would have barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat on barbed wire. No fences in the survey area were observed with barbed wire. However, if fences are present within the project limits, the top strand of barbed wire would be removed or replaced with barbless wire.
- No trees taller than 15 feet would be trimmed or removed as a result of this project between June 1 and September 15 when juvenile bats not yet capable of flying may be roosting in the trees. However, if a limited number of trees would need to be cleared during that time period, a qualified biologist would use appropriate protocols to survey for bats prior to trimming or cutting.

Because all impacts on the Hawaiian hoary bat would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect, individuals or populations of the species.

3.8.6.5 Hawaiian Monk Seal

The project area is upstream from the ocean in an area that is not ideal for Hawaiian monk seal basking or pupping. However, Hanapepe River within the study area could provide habitat for feeding and resting. Monk seals could be temporarily displaced from foraging within the project area during construction. Displacement would not have a significant impact on monk seals because foraging individuals could find similar resources upstream or downstream from the construction site or return to marine habitats.

The following conservation measures would reduce or eliminate project-related impacts and avoid adverse effects.

- Construction activities will not occur if a Hawaiian monk seal is in the construction area or within 150 feet of the construction area. Construction will resume after the animal voluntarily leaves the area. If a monk seal/pup pair is present a 300-foot buffer will be observed. If the species is noticed after work has already begun, that work may continue only if, in the best judgement of the project supervisor, there is no way for the activity to adversely affect the animal(s).

- Any construction-related debris that may pose an entanglement threat to monk seals will be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers will not attempt to feed, touch, ride, or otherwise intentionally interact with any monk seal.

Because all impacts on the Hawaiian monk seal would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect individuals or populations of the species.

3.8.6.6 Sea Turtles

In the short term, construction activities (specifically noise and light) could temporarily impact sea turtles by displacing individuals from riverine habitats and alter an individual's typical foraging patterns. However, displacement from Hanapepe River would not have a significant impact on sea turtles because foraging individuals could find similar resources upstream or downstream from the construction site or return to marine habitats.

Human-related disturbance (such as harassment) and mortality (for example, impact from boat propellers, gill net entanglement, and fishing activities) are not likely to increase as a result of the proposed project. Implementation of the following conservation measures would reduce project-related impacts.

- Construction activities will not occur if a sea turtle is in the construction area or within 150 feet of the construction area. Construction will resume after the animal voluntarily leaves the area. If the species is noticed after work has already begun, that work may continue only if, in the best judgement of the project supervisor, there is no way for the activity to adversely affect the animal(s).
- Any construction-related debris that may pose an entanglement threat to sea turtles will be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers will not attempt to feed, touch, ride, or otherwise intentionally interact with any sea turtle.

Because all impacts on sea turtles would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect individuals and populations of the species.

3.8.6.7 Fish and Aquatic Invertebrates

The following conservation measures to protect water quality would be implemented to reduce potential impacts to aquatic and marine resources. The applicability of these conservation measures will depend on the site-specific construction means and methods chosen.

- New permanent and temporary structures would be designed and installed to avoid interfering with fish passage.
- Disturbed streambanks would be revegetated or stabilized as soon as practical to reduce erosion.
- Turbidity and siltation from project-related work would be minimized and contained through the appropriate use of erosion control practices, effective silt containment devices, and the curtailment of work during adverse weather/flow conditions.
- In addition to primary isolation and confinement BMPs, secondary BMPs (that is, turbidity curtains) will be installed before the installation and removal of primary BMPs to capture sediment that could be suspended during project activities.
- Turbidity and pH monitors will be installed upstream and downstream of the project area to provide live time data for these variables.
- If during construction a visible plume is observed or monitoring data indicates that primary and secondary BMPs are not performing adequately, work will cease and the BMP will be updated or replaced to ensure proper function.

- Pier removal and foundation construction will be scheduled to avoid the spawning period for most corals (April through August) whenever practicable.
- Where silt curtains are appropriate for use and are deployed, such devices will consist of full-depth silt curtains, placement will be as close as possible to the project boundary, curtains will be left in place until water turbidity has returned to ambient conditions, and the curtains will be secured properly to minimize dislocation (which causes additional impact).
- A contingency plan to control toxic materials would be developed.
- Appropriate materials to contain and clean potential spills would be stored at the worksite and be readily available. All project-related materials and equipment placed in the water would be free of pollutants.
- Daily pre-work equipment inspections would be performed for cleanliness and leaks. All heavy equipment operations will be postponed or halted should a leak be detected, and they will not proceed until the leak is repaired and the equipment is cleaned.
- Fueling of land-based vehicles and equipment would take place at least 50 feet from the water, preferably over an impervious surface. Fueling of vessels would be done at approved fueling facilities.
- A plan would be developed to prevent debris and other wastes from entering or remaining in the marine environment during the project.
- Erosion and sediment control measures would be in place before initiating earth-moving activities. Functionality would be maintained throughout the construction period.
- No project-related materials (for example, fill, revetment rock, or pipe) will be stockpiled in the water (for example, intertidal zones, reef flats, stream channels, or wetlands) or on beach habitats.
- No contamination (for example, trash or debris disposal, invasive species introductions, or attraction of non-native pests) of adjacent habitats (for example, reef flats, channels, open ocean, stream channels, wetlands, beaches, or forests) shall result from project-related activities.
- Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric, or similar) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, or similar).
- All debris removed from the aquatic environment shall be disposed of at an approved site.

3.9 Archaeological Resources

3.9.1 Existing Conditions

The project area is located in the Hanapepe Ahupuaa on the southwest side of Kauai within the district of Waimea. It is bounded by the ahupuaa of Hoanuanu and Makaweli to the north and Wahiawa to the south.

From the first contact with peoples of the western world, it appears that native people of Hanapepe were strongly impacted. Hanapepe was the site of introductions of new plants and animals at the time of Captain Cook. The Russians later brought maize, cotton, tobacco, and sheep. Rice and sugar are both part of the Hanapepe Valley history of agricultural crops and techniques. New industrial developments, such as railroading and shipping, affected land use and livelihoods in Hanapepe.

The earliest settlements were along the coast since it provided fishing resources and sufficient land to grow taro. During the period of expansion (11th through 13th centuries), the coastal populations moved inland to create more arable land for taro and sweet potato, to seek feathers and ieie vines for making capes and helmets, and other goods needed to support the development of the alii class. While it appears slightly removed from the centers of power, Hanapepe was close enough to participate in social and economic changes occurring island wide. Today, large landholdings in and around the Hanapepe River Valley are in the

possession of the Robinson family trust and Alexander and Baldwin, Inc., both linked to the region's once flourishing sugar plantation economy.

An Archaeological Inventory Survey (AIS) was completed by Cultural Surveys Hawaii (CSH) (see Appendix D). The fieldwork included a 100 percent pedestrian inspection and subsurface testing. The pedestrian inspection, conducted on September 17, 2014, included identification and documentation of cultural resources within the project area and a description of ground visibility of cultural resources, visual cues of modern use or disturbance, and vegetation. Subsurface testing occurred on June 13 and 14, 2015, and consisted of two backhoe-assisted test trenches.

Five cultural resources were identified during the AIS. However, one of the resources (State Inventory of Historic Properties [SIHP] # -2284³, erosion control wall) was determined to be outside the project's Area of Potential Effect (APE). These resources are shown on Figure 3-4. Because these are architectural resources, the eligible historic properties are discussed in Section 3.10.

Subsurface Testing Results

Two test trenches were excavated along the shoulder of Kaumualii Highway—one on the east side of the river and one on the west side. The observed stratigraphy from the east trench consisted of various layers of fill. On the west side of the bridge, the observed stratigraphy consisted of fill, native soil, and sedimentary deposits. No traditional Hawaiian cultural material was observed. Two historic artifacts were observed in the fill and identified as a pressed glass fragment and metal pull tab from a can or food container.

3.9.2 Potential Impacts and Mitigation Measures

Given the lack of subsurface artifacts discovered during testing, no further archaeological fieldwork is proposed for this project. However, archaeological monitoring will be voluntary for ground disturbance and excavation activities during construction. If cultural resources or human remains are inadvertently discovered during construction, the contractor would comply with State law and administrative rules for handling them.

3.10 Historic Architectural Resources

3.10.1 Existing Conditions

Mason Architects, Inc. prepared a Historic Resources Inventory Form (July 2015) for two of the four resources within the APE that are eligible for listing on the National and Hawaii State Registers of Historic Places: Hanapepe River Bridge (SIHP #50-30-09-2280) and flood control levee (SIHP #50-30-09-2283). Locations are shown on Figure 3-4. Other historic resources not eligible for listing or located outside of the APE have been identified and are summarized in the Historic Resource Inventory Form (see Appendix E).

Hanapepe River Bridge (SIHP #50-30-09-2280)

The Hanapepe River Bridge, constructed in 1938, was partially funded by Federal Aid money (sometimes called Post Road Funds). Bridges were a special concern of the Federal highway system, and the Territorial Highway Department began to straighten out the belt roads and replace narrow bridges as occurred in re-routing the highway to bypass the town and the Hanapepe Road Bridge. New bridges constructed with Federal Aid dollars, such as the Hanapepe River Bridge, were generally larger and more decorative than county financed bridges.

The highway bridge retains sufficient integrity to convey its significance and eligibility for listing on the National and Hawaii State Historic Registers. Integrity of setting is somewhat reduced by construction in the vicinity of the bridge. Integrity of design, materials, and workmanship are reduced by alterations, but the major design elements, construction materials and their craftsmanship are evident.

³ Note that all SIHP numbers should be preceded by "50-30-09."

The following are primary historic character-defining architectural features of the bridge:

- Setting is urban, low rise residential and small businesses
- Channelized river upstream of the bridge with hardened (levee) left bank protects historic Hanapepe Town
- Concrete bridge construction with Greek cross openings in the parapet
- Parapet stanchions with rectangular light fixtures facing the roadway
- End stanchions are L-shaped in plan with inscriptions and radiused end posts
- Basket arch profile stringers spanning between piers and pier/abutments
- Pedestrian walkways

Secondary historic character-defining architectural features include the following:

- Three-span design
- Concrete abutments and wing walls

The Hanapepe River Bridge was assessed for significance (pursuant to HAR §13-13-275-6) and determined to be eligible for listing in the National and Hawaii Registers pursuant to 36 CFR 60.4 and HAR §13-198-8, respectively. Eligibility was based on the following significance criteria:

Criterion “A” (associated with events that have made a significant contribution to the broad patterns of our history) — for association with the development of Kauai’s Belt Road system and the significant role the bridge played in the history of Hanapepe Town.

Criterion “C” (embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction) — as an excellent example of later developments in concrete bridge construction on Kauai and for representing the “work of a master,” William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department.

Flood Control Levee (SIHP #50-30-09-2283)

The levee is an earthen and riprap berm approximately 380 feet long between the Hanapepe River Bridge and the Hanapepe Road Bridge. It is about 12 feet high, topped by a 3-foot-high concrete wall. The east bank level extends further upstream from the County bridge, out of the project area, for a total distance of about 2,200 feet. There is also a west bank levee, which extends upstream from the County bridge for a distance of about 4,465 feet. Both were engineered by USACE, Honolulu District. The east bank level was built around 1959 and the west bank was completed in August 1963. In 1965, the USACE Honolulu District called for an additional 3 feet of height to both levees. This modification presumably was the 3-foot-high wall atop the east bank berm, which was completed in November 1966. This levee has been evaluated as eligible for the National Register of Historic Places (NRHP) under Criterion A for its association with community planning and development of Hanapepe, as well as with Federal flood control projects.

3.10.2 Potential Impact and Proposed Mitigation Measures

Construction access and staging would occur within the APE, but are not expected to have a permanent adverse impact on the setting of historic resources.

Replacement Bridge

Demolition and replacement of the historic Hanapepe River Bridge will result in an Adverse Effect on the Hanapepe River Bridge (SIHP #50-30-09-2280) in accordance with Federal regulations (36 CFR 800.5) and an Effect, with Agreed Upon Mitigation Commitments in accordance with HAR §13-13-275-7. The undertaking does not meet the Secretary of the Interior’s Standards for the Treatment of Historic Properties; (36 CFR 800) which calls out an adverse effect as physical destruction of, or damage to, all or part of the property; and HAR §13-275-7, where an effect of potential harm may include partial or total destruction or alteration of the historic property.

To mitigate removal of the historic Hanapepe River Bridge, the proposed replacement structure is a three-span bridge with span lengths and arches similar to the existing bridge. New concrete railings would have similar style openings to reflect the aesthetics and historic character of the existing railing.

Left-bank Levee

When the wider bridge is built, its northeast abutment will remove about 6 feet, 9 inches of the overall length of the levee. A temporary two-lane bypass road is proposed to be installed just *mauka* of the existing bridge using a temporary bridge structure to span the river. The bypass bridge will not affect the levee. The contractor will be required to bridge over the levee and not impact it. Other than the 6-foot, 9-inch length of levee to be removed, the existing bank of the levee and the concrete topping walls will be retained and protected in place. Any incidental damage to the levee will be repaired using salvaged, original material to the extent possible, and repaired in kind.

The levee is eligible for the NRHP for its association with community planning and the development of Hanapepe under Criterion A and for yielding important historical information under Criterion D. Because removing a portion of the historic levee would alter characteristics of the historic property in a manner that diminishes its integrity, the proposed action will result in an Adverse Effect on the levee (SIHP #50-30-09-2283) in accordance with Federal regulations (36 CFR 800.5) and an Effect, With Agreed Upon Mitigation Commitments in accordance with HAR §13-13-275-7.

Memorandum of Agreement

The determinations of Adverse Effect on Hanapepe River Bridge and the levee/floodwall resulted in a memorandum of agreement (MOA) that requires implementation of eight mitigation measures, which are summarized below. The entire MOA is included in Appendix G.

- Construction affecting the floodwall will use construction methods that would not compromise the overall integrity of the resource by ensuring that the area where material is removed is left structurally stable and repaired with in-kind materials.
- FHWA will consult with the National Park Service as to the required type and level of documentation and the guidelines and protocols for submission.
- FHWA will ensure that all documentation activities are performed or directly supervised by qualified professionals.
- FHWA will provide originals of all records resulting from the documentation to the National Park Service.
- Before construction completion, FHWA will develop and install interpretative materials (for example, as a sign or kiosk) that will include a summary of the history of the Hanapepe Valley. FHWA will prepare the interpretive material and consult with State Historic Preservation Division (SHPD) and consulting parties in developing such materials and identifying an appropriate installation site.
- FHWA will salvage character-defining features of the Hanapepe River Bridge, and stockpile and protect salvaged items throughout construction with the intent of incorporating the material as part of the interpretive area.
- FHWA will prepare and provide a complete set of as-built drawings for the project to SHPD and consulting parties.
- FHWA will prepare a formal MOA closeout memorandum that documents compliance with all stipulations. SHPD and consulting parties will be provided a 30-day period to review and comment on the contents of the memorandum.

3.11 Cultural Resources

3.11.1 Existing Conditions

Act 50, Session Laws of Hawaii, 2000, requires that a proposed project's impact on the community's cultural practices be disclosed in the environmental review process. Consistent with this requirement, CSH conducted a cultural impact assessment for the Hanapepe River Bridge project. The assessment included archival research of relevant background history, *kaao* (legends), traditional *mooleso* (stories), *wahi pana* (storied places), *olelo noeau* (proverbs), *oli* (chants), *mele* (songs), traditional subsistence and gathering methods, and ritual and ceremonial practices. Ethnographic interviews were also conducted with persons knowledgeable about cultural resources, practices, and beliefs relevant to the study area. Specifically, CSH conducted three interviews for the project: Kamanaopono Crabb, *Ka Pouhana* at the Office of Hawaiian Affairs (OHA); Rhoda Libre, founder of Kauai Westside Watershed Council; and Frank and Abbey Santos, traditional saltmakers in Hanapepe. The findings of the Cultural Impact Assessment are summarized below. A copy of the cultural impact assessment is provided in Appendix F.

Hanapepe literally translates to "crushed bay," possibly referring to the frequent landslides of the area. The name is thought to have derived from the appearance of the cliffs as viewed from the sea. Hanapepe is also the name of a honeycreeper known as the nuku puu on the other Hawaiian Islands.

Mahele documentation indicates Hanapepe Ahupuaa was rich in agricultural resources. Approximately 92 claims were filed for the area; however, only 66 claims were awarded. The majority of land was being planted in *loi kalo* (taro terrace). In addition, house sites, *kula* lands (used for dryland crops such as sweet potatoes), *moo* (small land plot) with unspecified usage, pasture, gardens, *loko* (pond), salt lands, and a pigpen were documented in Land Commission Award claims. Trails could be found along the shorelines, streams, and leading to the uplands of Hanapepe Ahupuaa. Before the twentieth century, the Hanapepe River needed to be forded when traveling between Waimea and east Kauai. Trails could also be found going to Mount Waialeale and beyond.

Foreign interests began to invest in the surrounding lands of Hanapepe, including Eleele and Wahiawa during the mid- to late nineteenth century. The development of large-scale agricultural ventures stimulated by the Reciprocity Treaty of 1875 allowed for certain goods, such as sugar, to be exported duty-free to the United States. The Hawaiian Sugar Company located on the west side of lower Hanapepe Valley and the McBryde Sugar Company in Wahiawa were two major sugar companies in the area. In 1906, the plantation-sponsored Kauai Railway was constructed. The rail line built a bridge across the Hanapepe River extending to Eleele Landing. Eleele Plantation had its own mill and landing, popularly known as Port Allen. The Kauai Railway liquidated in 1941.

According to previous archaeology, several burial sites can be found *mauka* and *makai* of the current project area. *Mauka* of the project area are three burials: SIHP #50-30-09-607, a burial in Japanese Cemetery; SIHP # -0497, a burial in First United Church Cemetery; and SIHP # -1710, a coffin burial and several fragments of human burials. *Makai* of the project area are several burials, including SIHP # -0608, burial within Filipino Cemetery; SIHP #s -0704 and -0705, two human burials found in the vicinity of a historic cultural deposit; SIHP # -0604, burial in Veteran's Cemetery; SIHP # -0651, burial in Japanese Cemetery; and a cluster of burials found within Bennett's Site 53 (burial ground northwest of Hanapepe Bay) including SIHP #s -0053 and -01987.

3.11.2 Potential Impacts and Mitigation Measures

Mahele documents indicate the vicinity was once under habitation and cultivation by Native Hawaiians. Previous archaeology conducted *mauka* and *makai* of Hanapepe River Bridge yielded *iwi kupuna* (ancestral bones), including three burials found within a 0.5-mile radius of the current project area. No archaeological research projects have been conducted within the current project area. Based on these findings, there is a possibility *iwi kupuna* may be present or in the vicinity of the project area and that land-disturbing activities during construction may uncover presently undetected burials or other cultural finds. Should burials (or

other cultural finds) be encountered during ground disturbance or via construction activities, all work would cease immediately and the appropriate agencies notified pursuant to applicable law, HRS §6E.

A community concern was expressed regarding the effects of construction on the “historic look” of the bridge which is seen as iconic to historic Hanapepe Town. In addition to preserving the historic look, there was a recommendation to maintain the view plane from the bridge, referring to an unobstructed view of the ocean. To address the appearance of the bridge, the replacement structure will be designed with railing openings and an arched substructure that reflects the existing structure. The bridge railing will be raised to a height of 42 inches in accordance with the current standard for bicyclists’ safety. This height and the rail openings will not significantly change makai views available to motorists under current conditions.

Another community concern related to impacts of construction on the water quality and ecosystem health of Hanapepe River, whereby disturbance to river quality may impact cultural practitioners such as fishermen and/or paddlers. As discussed in Sections 3.3.5 and 3.8.6, BMPs will be implemented to maintain water quality in accordance with State standards.

During the construction period, cultural practices and gathering activities near the proposed project (should any occur) would be temporarily restricted for safety reasons. All permitted activities would resume once the improvements have been completed.

3.12 Population and Demographic Factors

3.12.1 Existing Conditions

There are four census tracts in the southern and western areas of Kauai:

- Census Tract 406, Koloa-Poipu
- Census Tract 407, Kalaheo-Eleele
- Census Tract 408, Hanapepe
- Census Tract 409, Waimea-Kekaha

Approximately 35 percent of the island’s population resides within the four census tracts (see Table 3-4). For this region, the U.S. Census counted a combined population of 23,418 in 2010. Compared to 2000, the region experienced a net increase of 2,010 persons or 9.4 percent. The three census tracts in the western part of the island—from Kalaheo to Kekaha—experienced the highest growth rates within the region.

TABLE 3-4
Resident Population, Selected Census Tracts, 2000 and 2010

Census Tract	Area	2000 Population	2010 Population	Net Change	Percent Change
406	Koloa-Poipu	5,404	5,683	279	5.2
407	Kalaheo-Eleele	7,441	8,403	962	12.9
408	Hanapepe	3,438	3,771	333	9.7
409	Waimea-Kekaha	5,125	5,561	436	8.5
Region	South/West Kauai	21,408	23,418	2,010	9.4
County	Kauai	58,303	66,921	8,618	14.8

Source: U.S. Department of Commerce, Census Bureau, 2010.

3.12.2 Potential Impacts and Mitigation Measures

The proposed project would replace an existing bridge with no change in vehicular capacity using the structure. Therefore, the project is not expected to affect the residential population or demographic characteristics. However, given that approximately 35 percent of the island's residents rely on Kaumualii Highway, maintaining a reliable transportation infrastructure would meet the mobility needs of a significant proportion of Kauai's population.

Environmental Justice

The proposed project involves replacement of an existing structure and would not have a disproportionately high or adverse impact on minority or low-income populations. Outreach to Native Hawaiian communities occurred through Section 106 consultation, the cultural impact assessment, and HRS 343 environmental review process.

3.13 Economic and Fiscal Resources

3.13.1 Existing Conditions

The Kauai economy has transformed over time from a plantation economy to a modern economy with a mix of tourism, diversified agriculture, construction, retail, and professional businesses. As reported in the 2013 edition of County Business Patterns (U.S. Department of Commerce, Census Bureau, 2013), Kauai had a total of 1,986 business establishments with 25,186 paid employees and an annual payroll of more than \$880 million.

The largest industries in terms of jobs are trade (retail and wholesale) and services. In 2013, hotels and food services accounted for 8,372 jobs, retail trade had 3,992, and healthcare and social assistance had 3,038. The Poipu resort area, south of the proposed project, is a major employment center that draws workers from much of the island.

The national economic recession of the late 2000s had a ripple effect on tourism and the island's primary economic engine. However, economic conditions have since improved and the unemployment rate in August 2015 was 3.8 percent (Ycharts, 2015), compared to a 3.5 percent unemployment rate statewide (State of Hawaii Department of Labor and Industrial Relations, 2015) and 6.1 percent nationwide (U.S. Bureau of Labor Statistics, 2015).

3.13.2 Potential Impacts and Mitigation Measures

Economic Impacts

The proposed project is anticipated to have several types of beneficial economic impacts. One type is construction-related employment and income. With a preliminary estimated cost of \$23 million, the project is expected to support a number of construction workers for the duration of the project (approximately 24 months). Unless the economy expands significantly and existing firms are working at full capacity, this project is more likely to help sustain existing employment and income levels than to create new jobs. However, because project funds are coming from (Federal) sources outside the region, wages paid to workers on this project (direct income), payments to suppliers (indirect income), and their subsequent expenditures (induced income) would have positive cumulative impact as monies circulate through the local economy.

Fiscal Impacts

Public funds are needed for long-term operations and maintenance of all bridge structures. In the case of the Hanapepe River Bridge, the existing structure has exceeded its normal lifespan. Replacing the structure would allow HDOT to extend the timeframe for major bridge repair. Design improvements and scour protection would reduce costs for inspections (which currently occur more frequently than the normal 2-year cycle) and intensified maintenance actions. Replacing the deficient bridge would therefore result in long-term fiscal benefits to HDOT.

3.14 Visual and Aesthetic Resources

3.14.1 Existing Conditions

The project site is located in the heart of Hanapepe town on Kauai's southwest coastal plain. The Hanapepe River is a perennial water way which conveys substantial flows beneath the highway bridge. The project area is relatively flat and moderately developed. A County sewer pump station is located on the *mauka* side of the highway near the western approach, while on the *makai* side of the highway near the eastern approach is a gas station and auto repair shop. Nearby land uses include residences, small retail businesses and eating establishments, a fire station and a church. Beyond this developed zone in the immediate vicinity of the project area, the landscape is used primarily for agricultural activity, which results in a more rural visual character.

The project area is mostly flat, though some elevated topography exists in the vicinity of the proposed replacement bridge. Because of the low profile of the existing bridge and the predominantly flat surrounding topography, the bridge is not a prominent visual feature of the landscape, and is viewed primarily by highway users as they approach the bridge and by people looking *makai* from the County bridge or other upstream vantage points.

3.14.2 Potential Impacts and Mitigation Measures

Although the proposed project would result in visual changes to the project site, as shown in Figure 3-5, features of the new bridge would be substantially similar in character to the existing structures. From the vantage point shown in the simulation, the new bridge girders would be the most noticeable change compared to existing conditions. The proposed shallow arch girders is deferential to the existing bridge design. This feature and other visual changes would be considered minimal and would not affect the overall quality of views toward the bridge.

In general, the project would not result in a substantial change to the existing landscape or result in a noticeable change to the project viewshed, because the changes to the project area would be relatively minimal in scale and scope.

The project could result in temporary visual impacts during the construction period as a result of dust, the presence of heavy equipment at the project site, the temporary bridge, and the presence of additional vehicles traveling throughout construction areas. However, these impacts would be considered less than significant because they would be minimal and temporary.

3.15 Roads and Traffic

3.15.1 Existing Conditions

Kaumualii Highway (State Route 50) is the main transportation corridor for the western side of the island. In the vicinity of Hanapepe River Bridge, at MP 16.6, the highway had an average daily traffic count of 15,700 in 2010. The highway is classified as a Minor Arterial with a posted speed limit of 35 mph.

3.15.2 Potential Impacts and Mitigation Measures

Development in the State Highway Right-of-Way

The proposed project would affect approximately 850 feet of Kaumualii Highway. The replacement bridge would be constructed and operated within the ROW of the existing highway facility. Project improvements would occur in areas impacted by construction of the original structure in 1938 and subsequent highway upgrades and repairs. Permanent easements for riprap and maintenance access would be needed as described in Section 2.3.3, Properties Affected by the Project.

Traffic Impacts

Short-term Construction-related Impacts. Construction is expected to extend over 24 months. A temporary vehicular bypass route — including a temporary bridge — would be constructed to maintain traffic flow during construction (see Figure 2-5). The bypass route would be located adjacent to, and *mauka* of, the existing structure. It would consist of two travel lanes, thereby accommodating travel in both directions. The bypass route would be designed for a travel speed of 15 mph (compared to the normal speed of 35 mph). While motorists would be required to slow down and may experience slightly longer travel times, traffic flow is not expected to be impeded.

Local access would be provided for residences and businesses around the project area. Neighboring residents have mentioned the difficulty of turning onto the highway from adjacent streets, such as Iona Road. Turning movements will be addressed in the traffic management plan. The lowered posted speed limit during construction would, in part, facilitate motorist access in all directions.

The temporary bridge would be limited to vehicular traffic given space constraints adjacent to the highway bridge. Bicyclists and pedestrians would be detoured to the County bridge on the *mauka* side, as shown on Figure 2-6. Between Iona Road and Puolo Road, the detour route would be approximately 0.3 mile long, compared to 0.15 mile to go across the highway bridge — a distance almost twice as long. In terms of travel time, a person walking at a relatively leisurely pace of 2 mph would take approximately 9 minutes to travel via the detour route compared to 4.5 minutes via the highway bridge. For pedestrians who need to cross to the *mauka* side of the highway, crosswalks are located at Kona Road (on the eastern side of the bridge) and at Moi Road (on the western side of the bridge).

Traffic Control. A traffic management plan would be developed by the contractor before construction and submitted to HDOT and Kauai Public Works Department for review and approval. Components of the traffic plan may include public notices and electronic variable message signs to inform motorists about the work schedule and to aid travel planning. All temporary signs, signals, and pavement markings would conform to standards contained in the FHWA *Manual on Uniform Traffic Control Devices for Streets and Highways* (revised 2009, adopted 2010). The contractor will coordinate with HDOT to provide the community with updated project information on a regular basis. Any impacts to traffic will be provided to the project engineer who will convey this information to the HDOT public information office.

Emergency Services. Kaumualii Highway is a lifeline transportation facility for police, fire, and emergency medical services. The project includes a temporary bypass road that would be designed to carry conventional loads, including fire apparatus, thereby resulting in no adverse impact to emergency services access. The contractor would be required to make provisions for emergency access and would be required to maintain full access during non-working hours. Emergency services, including police, fire, and ambulance services, would be notified before the implementation of any changes in roadway operations.

3.16 Community Facilities and Parks

3.16.1 Existing Conditions

A number of community facilities and parks are located within a 0.5-mile radius of the Hanapepe River Bridge, as shown on Figure 3-6. Facilities on the east side of the river include the Hanapepe Fire Station and Public Library, both of which are located on Kaumualii Highway. Hanapepe Stadium Park, Hanapepe Neighborhood Center, and the Hawaii National Guard Armory are located on the west side of the river. Several churches front Kaumualii Highway in the vicinity of the project.

3.16.2 Potential Impacts and Mitigation Measures

Community facilities are destinations that attract people and generate traffic. As discussed in Section 3.15.2, the temporary bypass road would mitigate traffic impacts during the construction period. Because the bypass alignment would hew closely to the existing bridge, the detour would not obstruct access for

community facilities. Construction activity is not expected to adversely affect the operation or public use of community facilities or parks.

3.17 Water and Wastewater

3.17.1 Existing Conditions

The island's potable water system is operated by the Kauai Department of Water. A 12-inch water line is hung on the *makai* side of the bridge.

The island's wastewater system is operated by the Kauai Department of Public Works, Wastewater Management Division. A 12-inch force main is attached to the *mauka* side of the bridge. A series of metal plates form a fascia below the bridge deck which blocks the view of the suspended pipe. A sewage pump station is located *mauka* of the highway and approximately 100 feet from western end of the bridge.

3.17.2 Potential Impacts and Mitigation Measures

The water and wastewater lines would be relocated to the temporary bridge during the construction period. Service would be maintained, but there may be brief interruptions that would be limited to the extent possible. The temporary bypass road on the *mauka* side of the bridge would tie back to the highway before Puolo Road, in the vicinity of the sewage pump station. A retaining wall would be constructed adjacent to the pump station to accommodate the temporary bypass road, but the bypass alignment is not expected to affect the pump station. Overall, temporary impacts would be negligible because of continuity of service during construction. Further coordination with utility owners would occur before and during construction.

3.18 Solid Waste Management

3.18.1 Existing Conditions

The Kauai Department of Public Works, Solid Waste Division, operates the primary refuse collection system. The County is responsible for regulating the disposal of all solid waste with the exception of hazardous materials. Refuse collection crews operate out of three baseyards on Kauai, including one in Hanapepe.

The island has a single landfill located in Kekaha. Because it is located on the far west side of the county, refuse vehicles servicing the island routinely pass over Hanapepe River Bridge to reach the facility. The 34-acre Kekaha Landfill Phase II site opened in 1993 and was allowed by the State to have its height limit increased to 60 feet in 1998. The facility also serves as a drop-off point for segregated recoverable waste (such as cardboard, newspaper, glass, and aluminum cans). The landfill, with the addition of the vertical expansion, is projected to reach capacity in several years. The County has identified a landfill site north of Lihue, *makai* of Maalo Road, and is currently preparing an EIS.

3.18.2 Potential Impacts and Mitigation Measures

Solid-waste impacts are expected to be short term and related to construction activities. Removing the existing structure would generate debris consisting primarily of concrete slabs, asphalt pavement, and metal guardrails, posts, and fastenings. The contractor would be required to dispose of or recycle all materials at approved sites and with proper handling during transport. The contractor would be required to have a waste disposal plan that specifies proper removal and disposal of all debris from the project. Project-related waste material would be a small proportion of the island-wide total, and is not expected to have a significant impact on the County's solid waste facilities.

3.19 Electrical and Telecommunications Systems

3.19.1 Electrical System

Kauai Island Utility Cooperative (KIUC) is the local electrical utility company, which provides electrical power to service customers on the island. Overhead 12 kilovolt (kV) electrical lines were recently rerouted to the County's Hanapepe Bridge crossing. As a result, there are no KIUC electrical lines in the Kaumualii Highway river crossing.

3.19.2 Telecommunications Systems

Three companies own and maintain telecommunication lines in the project area: (1) Hawaiian Telcom provides land-line telecommunications service, (2) Oceanic Time Warner Cable provides wired cable television service to customers island wide, and (3) Sandwich Isles Communications provides telecommunications services to Hawaiian Home Lands communities and properties. Overhead telecommunication lines are located on the *makai* side of the highway and parallel to the proposed project. A telecommunications conduit is also located on the underside of the existing bridge.

3.19.3 Highway Lighting and Power

There are streetlights along Kaumualii Highway through Hanapepe Town. Light poles are located on the *makai* side of the highway at both ends of the bridge, but there are no light poles on the bridge itself. The bridge was originally constructed with light fixtures mounted to the concrete bridge railing. The bridge lighting system is not functional and a number of fixtures are in disrepair.

3.19.4 Potential Impacts and Mitigation Measures

Telecommunication lines would be relocated to the temporary bridge for the duration of the construction period. Service would continue, but may experience temporary and short-term interruptions that would be limited to the extent possible. Further coordination with utility owners would occur before and during construction. Temporary impacts on utilities would be negligible because service would be maintained during construction.

Telecommunication conduits and lines would be replaced as part of permanent construction and there would be no long-term adverse impacts related to these utilities. Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

3.20 Secondary and Cumulative Impacts

Replacing the Hanapepe River Bridge is a self-contained project. It would not change the capacity of the existing highway and is not expected to have secondary impacts such as population change, land development, or effects on public facilities and services. There is a County project to resurface Hanapepe Road and improve the Hanapepe Road Bridge. However, construction of the County project is expected to occur sometime after the Kaumualii Highway Bridge has been replaced, thereby avoiding the potential for cumulative adverse impacts to environmental resources such as water quality and wildlife, and cumulative construction impacts on traffic, noise, and dust. CFLHD is planning to undertake several other bridge replacement projects on Kauai, including structures on Kaumualii Highway in Koloa and on Kuhio Highway in Kapaa and Wainiha. Although the timing of one or more of these projects may overlap with the Hanapepe project, cumulative impacts are not expected because of geographic distances that separate the project areas.

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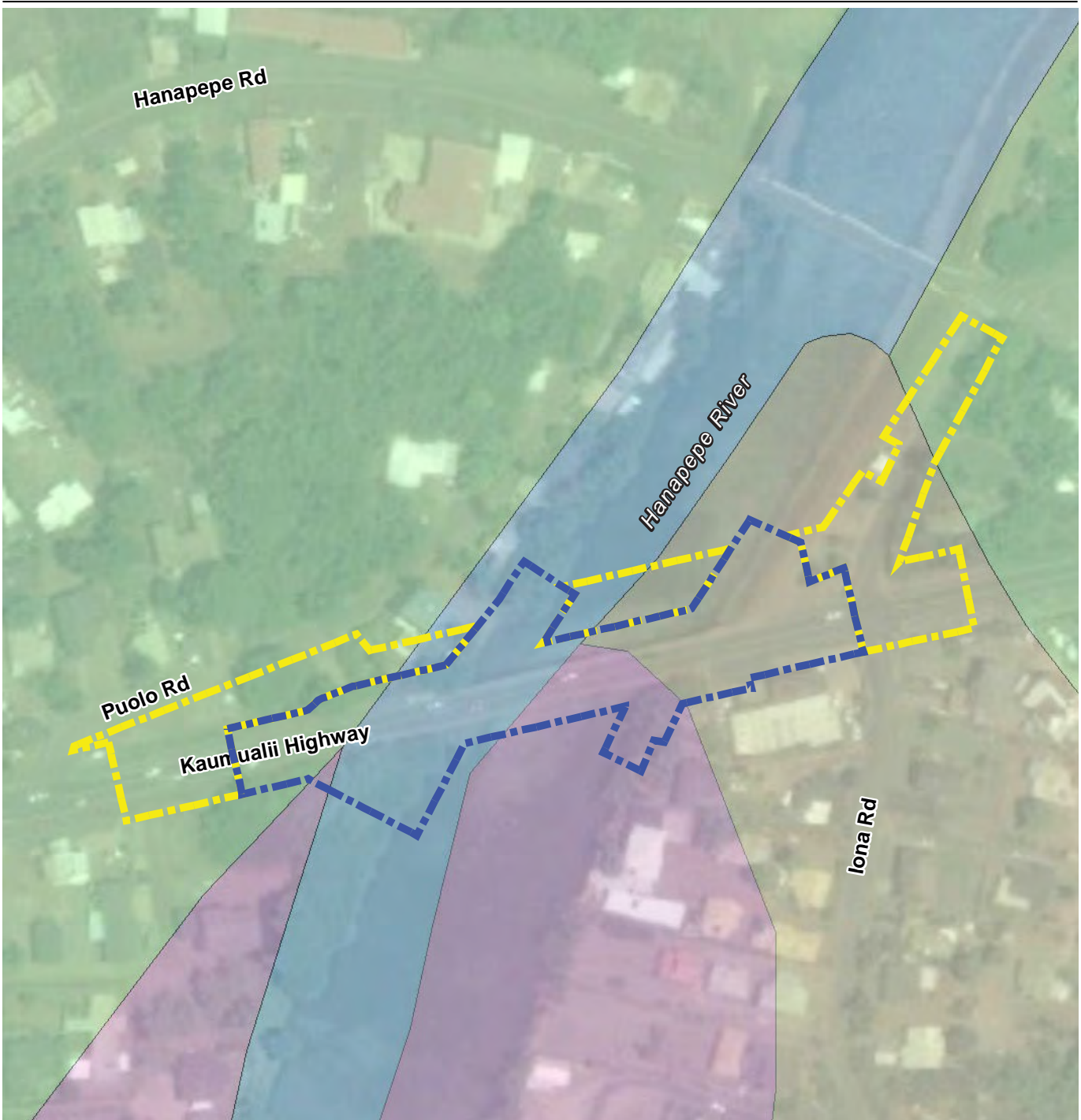
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

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Data Source: NRCS, Soil Survey Geographic Database (SSURGO), 2015

LEGEND

-  Permanent Impact Area
-  Temporary Impact Area
-  HmA, Hanalei silty clay loam, 0 to 2 percent slopes
-  JkB, Jaucas loamy fine sand, dark variant, 0 to 8 percent slopes
-  PdA, Pakala clay loam, 0 to 2 percent slopes
-  W, Water > 40 acres

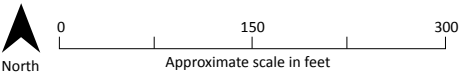
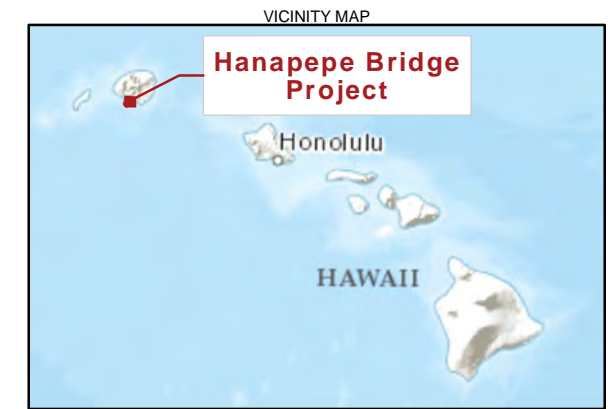
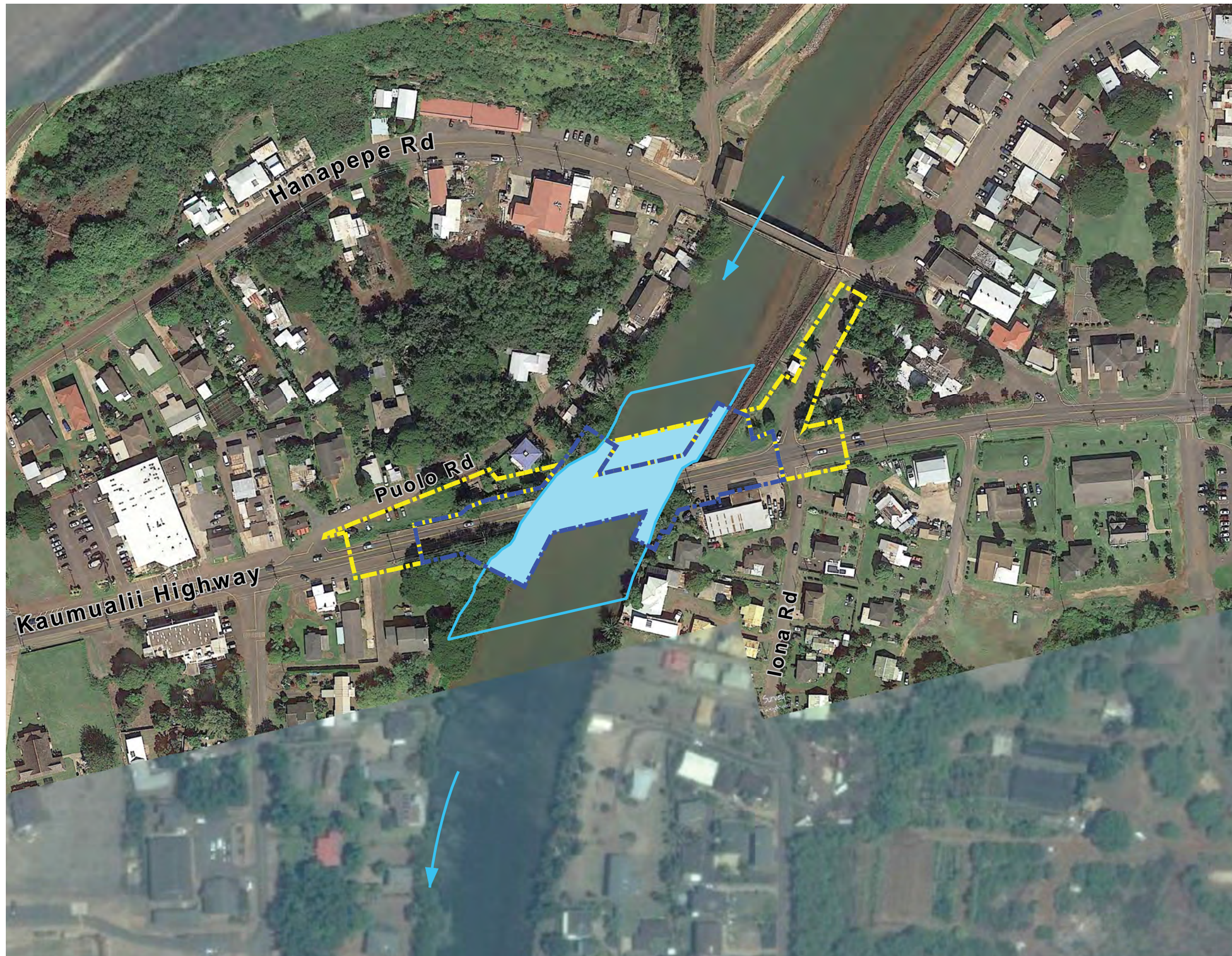






FIGURE 3-1
Soils Map
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



LEGEND

-  Permanent Impact Area
-  Temporary Impact Area
-  Waters of the U.S.
-  Waters of the U.S. within the Project Area

- Notes:
1. High-Res Imagery Source: Google Earth 12/16/2013
 2. Low-Res Imagery Source: Digital Globe 08/26/2011
 3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

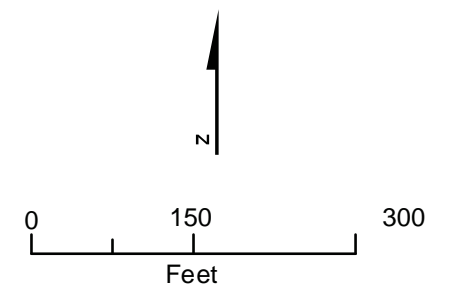
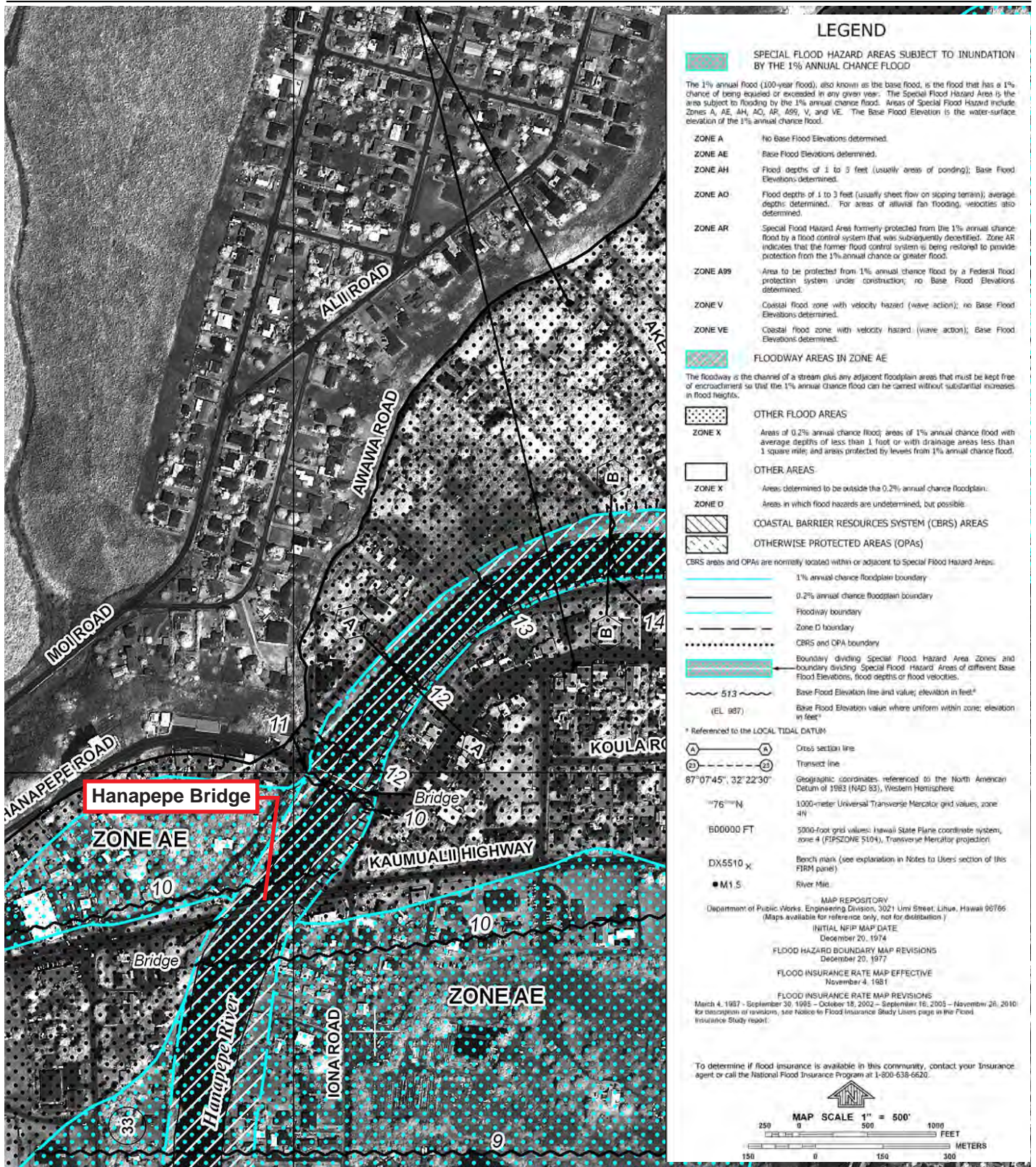
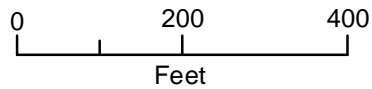
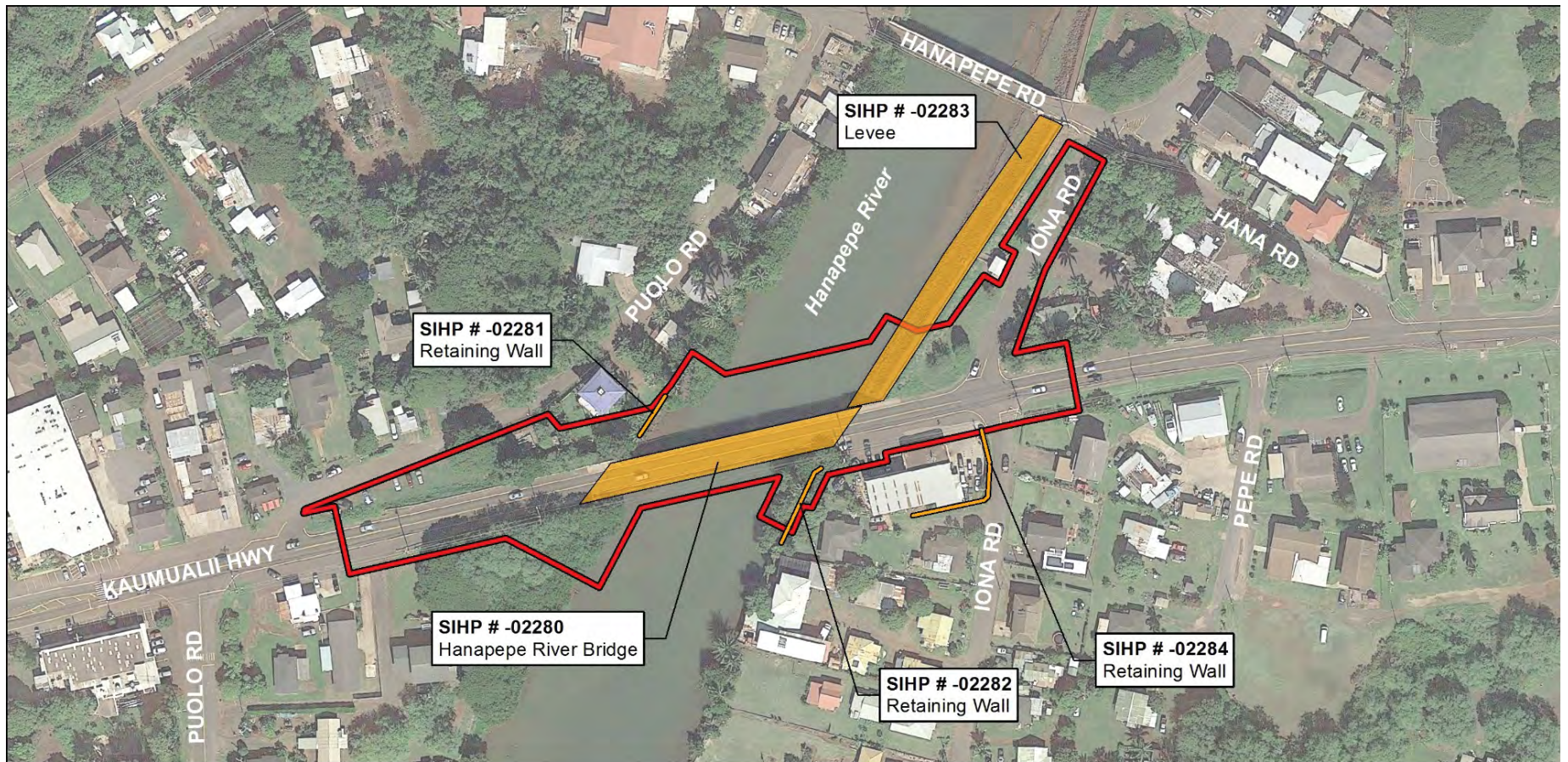


FIGURE 3-2
Waters of the U.S.
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



Source: Federal Management Agency. Map number 1500020287E. Kauai County, Hawaii. Panel 287 of 500, Revised Nov. 26, 2010

FIGURE 3-3
Flood Insurance Rate Map
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



LEGEND

- Area of Potential Effect
- Cultural Resource

Base Map: Google Earth Imagery (2013) Data Sources: CSH

FIGURE 3-4
Cultural Resources
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Existing Bridge



Visual Simulation

FIGURE 3-5
Visual Simulation
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



LEGEND

- Tax Map Key
- Existing Bridge
- Project Area
- Park
- Public Facility

Church



0 495 990 Feet

FIGURE 3-6

Public Parks and Facilities

Hanapepe Bridge Project

Hawaii Bridges Program –

Central Federal Lands Highway Division and

Hawaii Department of Transportation



Relationships to Public Plans and Policies

The plans and policies relating to the proposed project range from broad program guidance to land use controls governing the project site. Construction of the proposed improvements is consistent with the various plans, policies, and regulatory controls, as discussed below.

4.1 Federal

The proposed project would involve the use of Federal funds through FHWA. As a result, the proposed project must comply with various Federal statutory and regulatory requirements.

4.1.1 National Environmental Policy Act of 1970

The proposed project would be partially funded by FHWA. This Federal funding subjects the project to the environmental review requirements of National Environmental Policy Act (NEPA), prescribed under 40 CFR Parts 1500 – 1508 (Council on Environmental Quality [CEQ]). FHWA serves as the lead Federal agency, or Administrator, responsible for the project's compliance with NEPA documentation and processing requirements, as provided in 23 CFR Part 771, Environmental Impact and Related Procedures.

The NEPA determination of impact significance is related to the type of document and process required to comply with NEPA for a proposed project. There are three types of environmental documents under NEPA: (1) Categorical Exclusion (CE), (2) EA, and (3) EIS. A CE is appropriate when there would be no significant impacts on the environment, an EA when the significance of the effects are not clearly established, and an EIS when the action would have a significant impact on the environment.

Significance is defined in the CEQ regulations (40 CFR 1508.27). A "significant impact" is assessed in terms of an impact's context and intensity. Context refers to the environment and the relative abundance of resources in the project limits. Intensity refers to the specific impact, or how much of the resource(s) would be used or affected by the project.

FHWA Regulations for Environmental Impact and Related Procedures (23 CFR 771.117(a)) specify that CEs are actions that meet the definition contained in 40 CFR 1508.4 and act as follows:

- Do not induce significant impacts to planned growth or land use for the area
- Do not require the relocation of significant numbers of people
- Do not have a significant impact on any natural, cultural, recreational, historic, or other resources
- Do not involve significant air, noise, or water quality impacts
- Do not have significant impacts on travel patterns
- Do not otherwise, either individually or cumulatively, have any significant impacts

Specific actions that meet these criteria are listed in 23 CFR 771.117(c). This list includes "bridge rehabilitation, construction or replacement or construction of grade separation to replace existing at-grade railroad crossings" (23 CFR 771.117(c)(28)).

Consistent with their regulations for NEPA compliance, and as further justified by the findings of this EA, FHWA anticipates issuing a CE.

4.1.2 Section 106 of the National Historic Preservation Act of 1966

The NHPA of 1966, as amended (PL 89-665, codified as 16 U.S.C. 470), recognizes the nation's historic heritage and establishes a national policy for the preservation of historic properties as well as the National Register of Historic Places. Section 106 of the NHPA of 1966 (16 U.S.C. 470f) requires that Federal agencies consider the effects of their projects on historic properties. Use of Federal funds sets forth the need for Section 106 consultation. The purpose of the Section 106 consultation process is to evaluate the potential

for effects on existing historic sites, if any, resulting from the project. Findings relating to potential effects of the proposed project on historic properties are discussed in Sections 3.9 and 3.10. Documentation related to the Section 106 consultation process is contained in Appendix G.

The Section 106 review process encompasses a good faith effort in ascertaining the existence and location of historic properties near and within the project site, establishing an APE for the project, identifying whether the proposed project may adversely affect historic properties, and developing a reasonable and acceptable resolution in the monitoring and treatment of any historic properties in agreement with the agency, SHPD, and consulting government agencies, community associations, and Native Hawaiian organizations and families.

Early consultation meetings were held with SHPD on September 9 and December 10, 2014, to provide an overview of the CFLHD Hawaii Bridge Program and to discuss the general parameters for historic preservation review. The Section 106 consultation process was formally initiated by letters to SHPD and to potential consulting parties dated August 26, 2015. A legal notice requesting public input to the Section 106 process was published in The Garden Island on August 28, 2015. Invitations to participate in the consultation process were sent to the Office of Hawaiian Affairs, Kauai Historic Preservation Review Commission (KHPRC), Kauai-Niihau Island Burial Council, Queen Deborah Kapule Hawaiian Civic Club, Hookipa Network, and Historic Hawaii Foundation (HHF). Of these entities, KHPRC and HHF requested to be consulting parties and provided comments on the project. To support the consultation process, an archeological inventory survey and a historic architecture study were prepared (see Appendixes D and E, respectively).

A project concurrence letter dated August 24, 2016, was received from SHPD, which determined adverse effects for the replacement and demolition of the bridge (Site 2280) and modification to the levee (Site 2283). Consequently, FHWA and the Hawaii SHPO entered into a MOA containing stipulations for project implementation, including measures to mitigate effects on historic properties.

4.1.3 Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303 and 23 U.S.C. 138) permits the “use” of land from a publicly-owned park, recreational area, or wildlife and waterfowl refuge, or land from a historic site of National, State, or local significance for a transportation project only if (1) there is no prudent and feasible alternative to using that land and (2) the project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use. The purpose of Section 4(f) requirements is to preserve significant parkland recreation areas, refuges, and historic and archaeological sites by limiting the circumstances where such land can be used for transportation projects. Historic sites are protected under Section 4(f) if they are listed in or have been determined eligible for listing in the NRHP.

“Use” of a Section 4(f) resources is defined in 23 CFR 774.17 as follows:

1. When land is permanently incorporated into a transportation facility; or
2. When there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purpose as determined by the criteria in 23 CFR 774.13(d); or
3. When there is a constructive use of a Section 4(f) property as determined by the criteria in 23 CFR 774.15

The Historic Resource Inventory Form identified two historic resources within the APE eligible for listing on the NRHP – the Hanapepe River Bridge (SIHP #2280), and the circa 1966 left-bank flood control levee (SIHP #2283) (see Appendix E). Based on their NRHP eligibility, both the Hanapepe River Bridge and the left-bank flood control levee subsequently qualify as Section 4(f) historic sites.

Based on the findings, FHWA determined that the replacement of the Hanapepe River Bridge would result in an adverse effect under Section 106. However, FHWA concluded that the *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* applies to this project. Justification for this conclusion is provided in FHWA documentation that includes findings for the criteria listed in the Programmatic Section 4(f) (FHWA, 1983).

With respect to the levee (SIHP #-2283), FHWA evaluated proposed changes to the historic levee and—although found to be adversely affected in accordance with Section 106 of the NHPA—determined there is no Section 4(f) use of this property. The portion of the levee affected by transportation improvements is on land historically used for transportation purposes. No additional ROW will be required. Therefore, because the portion of the historic levee impacted is currently located within an existing highway ROW, and no new “use” as defined in 23 CFR 774 is anticipated, FHWA has determined there is no Section 4(f) use of the levee property from this project.

4.1.4 Uniform Relocation Assistance and Real Property Acquisition Act of 1970

The Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (42 U.S.C. 4601 et seq. and 49 CFR 24), as amended by the Uniform Relocation Act Amendments of 1987 is commonly referred to as the “Uniform Act”. The Uniform Act provides important protection and assistance for people affected by Federally funded projects. The law was enacted by Congress to ensure that people whose real property is acquired, or who move as a result of projects receiving Federal funds, are treated equitably and receive assistance in moving from the property they occupy.

This project involves replacing an existing structure within the existing HDOT ROW and would not require additional ROW through fee acquisition of land, structures, or residences, or the displacement of persons or businesses. As described in Section 2.3.3, approximately 0.49 acres of land would be needed for permanent access and/or maintenance easements and approximately 0.64 acres of land would be needed for temporary easements to accommodate bridge construction and paving improvements. These easements would be coordinated through HDOT. All applicable and appropriate measures would be followed in acquiring property interests consistent with the requirements of the Uniform Act.

4.1.5 Endangered Species Act of 1973

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) establishes a process for identifying and listing threatened and endangered species. It requires Federal agencies to carry out programs for the conservation of federally listed endangered and threatened plants and wildlife and designated critical habitats for such species, and prohibits actions by Federal agencies that would likely jeopardize the continued existence of those species or result in the destruction or adverse modification of designated critical habitat. Section 7 of the ESA requires consultation with Federal wildlife management agencies such as the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS).

To initiate consultation with agencies with authority over protected species, FHWA sent a letter requesting a list of threatened and endangered species, candidate species, plants and animals of concern, and critical habitats in the vicinity of the proposed project. USFWS responded by letter dated December 22, 2014, providing location-specific biological information and recommended standard conservation measures. Discussions continued through meetings held with the USFWS on January 12, 2015, and with USFWS, USEPA, NMFS, and DLNR Division of Aquatic Resources on March 15, 2015.

A BA was prepared for the Hanapepe Bridge project (see Appendix C) and submitted to USFWS and NMFS for review as part of the informal Section 7 consultation process. The BA includes effects determinations and conservation measures consistent with the analysis in this EA. By letter dated August 4, 2016, USFWS concurred with FHWA’s determination that the proposed project may affect, but is not likely to adversely affect the Hawaiian coot, the Hawaiian duck, the Hawaiian moorhen, the Hawaiian stilt, the Hawaiian goose, the Hawaiian hoary bat, the Newell’s shearwater, the Hawaiian petrel, and the band-rumped storm petrel.

4.1.6 Migratory Bird Treaty Act

The MBTA of 1918, as amended (16 U.S.C. 760), protects migratory wild birds found in the U.S. The MBTA makes it unlawful to pursue, hunt, take, capture, possess, sell, purchase, barter, import, export, or transport any migratory bird or any part, nest, or egg of any such bird, unless authorized under a permit issued by the Secretary of the U.S. Department of the Interior.

As described in Section 3.8.1, two bird species federally protected under the MBTA were observed during the biological survey. Construction activities may temporarily displace these species, but long-term impacts are not expected. These birds (likely limited to a few individuals) are expected to find suitable foraging habitat at nearby areas. The temporary displacement of these individuals is not expected to affect the individual's survival or the overall species' populations. With the implementation of mitigation measures described in Section 3.8.5, it is expected that impacts to MBTA-protected species would be avoided.

4.1.7 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667e) calls for conservation of wildlife resources related to projects where the "waters of any stream or other body of water" are impounded, diverted, or modified by any agency under a Federal permit or license. The law requires consultation with USFWS and State fish and wildlife agencies for the purpose of "preventing loss of and damage to wildlife resources."

Consultation related to the FWCA is occurring as part of ongoing coordination with resource agencies.

4.1.8 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)), as amended, establishes provisions relative to Essential Fish Habitat (EFH) to identify and protect important habitats for federally managed marine and anadromous fish species. EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, and/or growth to maturity. "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include areas historically used by fish where appropriate. "Substrate" includes sediment, hard bottom, and structures underlying the waters and associated biological communities. Federal agencies which fund, permit, or undertake activities that may adversely affect EFH (including actions outside EFH, such as upstream/upslope activities) are required to consult with NMFS regarding the potential effects of their actions on EFH, and respond to NMFS recommendations. An adverse effect is defined as any impact that reduces quality and/or quantity of EFH, including direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, species and their habitat, and other ecosystem components.

Four types of EFH occur in the project area: bottomfish and seamount groundfish, pelagic fishery, crustaceans, and coral reef ecosystems. The extent of impacts associated with the proposed project with the potential to affect EFH are limited to the transport of sediment or pollutants via live water. The Hanapepe River in the project area is a low gradient reach that exhibits high levels of turbidity and is listed as a 303(d) impaired waterbody for turbidity under existing conditions. It is a perennial waterway that has been highly modified for flood control (see Section 4.1, Affected Environment in Appendix C). BMPs and other methods (described in Sections 3.3.5, 3.6.2, and 3.8.6.7) would reduce the extent to which sediment disturbed as a result of construction would be transferred to live water.

An overview of the proposed project relative to EFH was the subject of meetings with NMFS on December 8 and 15, 2015. An EFH Assessment was transmitted by letter dated July 18, 2016, with a follow-up conference call on July 26. By letter dated August 4, 2016, NMFS provided EFH conservation recommendations and determined that adverse effects to EFH may occur, but are considered to be minimal given effective implementation of conservation/mitigation plans and measures. FHWA will provide NMFS with project-specific conservation plans and BMPs for review and approval no less than 30 days before the initiation of project activities.

4.1.9 Clean Water Act of 1972

The Federal Water Pollution Control Act (FWPCA) (33 U.S.C. §§1251 et seq.) is the Federal statute regulating the discharge of water pollution. Congress revised the FWPCA into the CWA in 1972. The goals of the CWA include: (1) "the discharge of pollution into the navigable waters be eliminated by 1985," (2) "the discharge of toxic pollutants in toxic amounts be prohibited," and (3) an "interim goal of water quality which provides

for the protection and propagation of fish, shellfish, and wildlife and... recreation in and on the water... by July 1, 1983” (CWA §101a, 33 U.S.C. §1251a).

Section 404 of the CWA regulates discharge of dredge and fill material in the Waters of the U.S., including wetlands, and requires a Department of the Army permit from USACE. Section 401 of the CWA directs states to establish water quality certification (WQC) programs. In Hawaii, the Section 401 WQC is administered by HDOH, Clean Water Branch. The project would result in a discharge to the Hanapepe River, which is considered a Waters of the U.S.; as such, the project will require a Section 404 Department of the Army Permit and Section 401 WQC.

Section 402 of the CWA requires an NPDES permit for point source discharges, including stormwater discharges associated with construction activities. The permit is required for construction activities that disturb 1 acre or more and discharge stormwater from the project site to Waters of the U.S. NPDES permits are issued by HDOH, Clean Water Branch. The project will require an NPDES permit.

FHWA will coordinate with USACE and HDOH regarding permitting under CWA.

4.1.10 Rivers and Harbors Act of 1899

Federal protection of navigable and tidally influenced waterways is provided under the Rivers and Harbors Act of 1899.

Section 9 of the Act is for the purpose of preventing interference with navigability. It requires that any agency planning to construct or modify a bridge apply for a Coast Guard bridge permit. By correspondence dated December 18, 2015, from Lt. Rysa Miller, the U.S. Coast Guard District 14, Waterways Management Office determined that no action or permit is required from the U.S. Coast Guard.

Section 10 of the Act requires authorization from USACE for the construction of any structure in or over any navigable water of the United States. The reach of the Hanapepe River within the project area is tidally influenced and may be considered navigable, such that Section 10 authorization is expected to be required.

The Rivers and Harbors Act also regulates alteration or use of Federal public works projects in navigable waters. Section 14 of the Rivers and Harbors Act (as codified in 33 U.S.C. 408) provides the Secretary of the Army with the authority to grant permission for temporary or permanent alteration of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States. Specifically, the Secretary of the Army may, on the recommendation of the Chief of Engineers, grant permission for the alteration or permanent occupation of such public works as long as it is not contrary to the public interest and will not impair the usefulness of the work. As described in Section 2.1.1, this stretch of the Hanapepe River includes flood control improvements completed by USACE, including a floodwall atop a levee and an I-wall on the east bank, and a levee on the west bank. Authorization for alteration of these features will be coordinated with USACE.

4.1.11 Clean Air Act of 1970

The CAA and amendments (42 U.S.C. §7401 et seq.) is the comprehensive Federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes USEPA to establish National Ambient Air Quality Standards to protect public health and the environment.

The purpose of this project is to replace the Hanapepe River Bridge. It has been determined that the project would generate minimal air quality impacts for CAA criteria pollutants (as discussed in Section 3.2) and would not be linked with any special MSAT concerns.

4.1.12 Floodplain Management, Executive Orders 11988 and 12148

Executive Order 11988, Floodplain Management, dated May 24, 1977, requires Federal agencies to take action to reduce the risk of flood loss, restore the natural and beneficial values of floodplains, and minimize the impacts of floods on human safety, health, and welfare. The order was amended by Executive Order 12148 in July 20, 1979. The main feature of the amendment added that agencies with responsibilities for

Federal real estate properties and facilities will, at a minimum, require the construction of Federal structures and facilities to be in accordance with the criteria of the National Flood Insurance Program.

The Hanapepe River Bridge is located within a Zone AE FEMA-regulated floodway. As described in Section 3.4.4, the proposed bridge would meet or exceed the flow capacity of the existing bridge and there would be no rise in the 100-year water surface elevation. Compliance with these executive orders would be documented by FHWA as part of the NEPA CE.

4.1.13 Protection of Wetlands, Executive Order 11990

Executive Order 11990, Protection of Wetlands, dated 1977, requires Federal agencies to avoid, preserve, or mitigate effects of new construction projects on lands that have been designated wetlands.

A delineation of Waters of the U.S. (including wetlands) was conducted and no wetlands were identified within the survey area.

4.1.14 Invasive Species, Executive Order 13112

Executive Order 13112 (64 Federal Register 6183), issued in 1999, requires Federal agencies to implement policies to minimize the spread of invasive species. Federal agencies cannot authorize, fund, or carry out action(s) likely to cause or promote the introduction of the spread of invasive species unless it has been determined (1) that the benefits of the action outweigh the potential harm caused by invasive species, and (2) that all feasible and prudent measures to minimize risk of harm will be taken.

As described in Section 3.7, vegetation disturbed during construction will be replaced as part of the project and the spread of noxious weeds will be managed through the implementation of BMPs as part of the project.

4.1.15 Coastal Zone Management Act (16 U.S.C. §1456(C)(1))

In 1972, the U.S. Congress enacted the Federal Coastal Zone Management Act to ensure that each Federal agency undertaking an activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone will be carried out in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of approved State management programs. Each Federal agency carrying out an activity subject to the Act will provide a consistency determination to the relevant State agency designated under Section 1455(d)(6) of this title at the earliest practicable time.

The State administers the enforcement of this Act under the Hawaii CZM Program (HRS Chapter 205A), and therefore, the discussion of the project's consistency with CZM objectives is discussed in Section 4.2.4.

4.1.16 Environmental Justice, Executive Order 12898

Executive Order 12898 (Federal Actions to Address Environmental Justice to Minority and Low-income Populations) was signed on February 11, 1994. The intent of Executive Order 12898 is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low-income populations. Executive Order 12898 also requires Federal agencies to ensure that minority and low-income communities have adequate access to public information related to health and the environment.

Guidance from CEQ indicates minority populations exist where either (1) the minority population of the affected area exceeds 50 percent, or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general population. Minorities are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. U.S. Census Bureau poverty status data are used to identify low-income populations. Poverty status is assigned to individuals and families whose income is below the poverty threshold appropriate for that person's family size and composition, as reported in the U.S. Census Bureau, 2010 Census of Population and Housing.

As discussed in Section 3.12, construction and operation of the proposed replacement bridge would not result in adverse effects on minority and low-income populations.

4.1.17 Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d and 49 CFR 21) establishes that no person will, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefit of, or subjected to discrimination under any program or activity receiving Federal financial assistance.

The project is complying with Title VI through coordination and outreach to Native Hawaiian communities under Section 106, HRS 343, and Act 50 on cultural practices.

4.2 State of Hawaii

4.2.1 Hawaii State Plan

The Hawaii State Plan, HRS Chapter 226, is the umbrella document in the statewide planning system. It serves as the written guide for the long-range development of the State by describing the desired future for the residents of Hawaii and providing a set of goals, objectives, and policies that are intended to shape the general direction of public and private development.

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

Objective	Compliance with Specific Objectives and Policies
Population	This theme is not applicable to the project.
Economy—in general	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.</p> <p>As described in Section 3, the proposed project is anticipated to provide economic benefits by supporting a number of construction workers for the duration of the project.</p>
Economy—agriculture	This theme is not applicable to the project.
Economy—visitor industry	This theme is not applicable to the project.
Economy—federal expenditures	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(b)(3) Promote the development of federally supported activities in Hawaii that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment.</p> <p>(b)(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii.</p> <p>The proposed project involves using federal funds as needed to improve Hanapepe River Bridge such that it remains a safe and functional component of the regional transportation system for highway users. It is being implemented through a partnership between HDOT and FHWA.</p>
Economy—potential growth and innovative activities	This theme is not applicable to the project.
Economy—information industry	This theme is not applicable to the project.
Physical environment—land-based, shoreline, and marine resources	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(b)(3) Take into account the physical attributes of areas when planning and designing activities and facilities.</p>

Objective	Compliance with Specific Objectives and Policies
	<p>(b)(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.</p> <p>The proposed project would provide a replacement bridge that substantially coincides with the footprint of the existing bridge, and is not expected to have a significant adverse effect on important natural resources. Biological surveys of the project area found no threatened or endangered plant or animal species; BMPs would be implemented to avoid and minimize contact with special-status species that could potentially occur in the project area.</p>
Physical environment—scenic, natural beauty, and historic resources	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) Promote the preservation and restoration of significant natural and historic resources.</p> <p>(a)(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.</p> <p>(a)(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.</p> <p>Although the proposed project would result in visual changes to the site as a result of replacing the existing bridge, the visual changes are considered minimal and would not affect the quality of views toward the bridge. The proposed project would not result in a substantial change to the existing landscape or in a noticeable change to the project viewshed.</p> <p>The existing bridge and levee are eligible for listing in the National and Hawaii Registers of Historic Places. The proposed project would adversely affect the bridge, but mitigation as agreed upon with SHPD would be implemented to minimize the potential impacts.</p>
Physical environment—land, air, and water quality	<p>The proposed project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.</p> <p>(b)(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.</p> <p>(b)(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.</p> <p>The proposed project would result in short-term, construction-related impacts (noise, dust, and erosion), but implementation of BMPs would minimize the effects to the environment. BMPs will be specified through the permitting under Sections 401 and 402 of the CWA, and through consultation under Section 7 of the ESA and the Magnuson-Stevens Act.</p>
Facility systems—in general	<p>The proposed project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.</p> <p>(b)(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.</p> <p>HDOT's mission to provide a safe, efficient, and accessible transportation system for the public. HDOT recognizes the need to replace the existing Hanapepe River Bridge. The replacement bridge will be designed using current AASHTO guidelines that have been adopted by HDOT for planning and engineering for highway projects in Hawaii.</p>
Facility systems—solid and liquid wastes	<p>This theme is not applicable to the project.</p>
Facility systems—water	<p>This theme is not applicable to the project.</p>
Facility systems—transportation	<p>The proposed project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.</p>

Objective	Compliance with Specific Objectives and Policies
	<p>(a)(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.</p> <p>(b)(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives.</p> <p>(b)(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.</p> <p>(b)(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.</p> <p>(b)(10) Encourage the design and the development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii’s natural environment.</p> <p>The proposed project is a partnership between HDOT and FHWA, and would improve Hanapepe River Bridge and its approaches such that it remains a safe and functional component of the regional transportation system for highway users. The replacement bridge will be designed using current AASHTO guidelines that have been adopted by HDOT for planning and engineering for highway projects in Hawaii.</p>
Facility systems–energy	This theme is not applicable to the project.
Facility systems–telecommunications	This theme is not applicable to the project.
Socio-cultural advancement (housing, health, education, social services, leisure, individual rights and personal well-being, culture, public safety, and government)	These themes are not applicable to the project.

4.2.2 State Functional Plans

The Hawaii State Plan directs appropriate State agencies to prepare functional plans for their respective program areas. There are twelve State Functional Plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the State Plan. Of these, the State Transportation Functional Plan is most applicable to the proposed project.

State Transportation Functional Plan

The 1991 State Transportation Functional Plan identified the four most critical issues of transportation: congestion, economic development, funding, and education. Objectives, policies, and implementing actions were identified for each issue. The following objectives and policies apply to the project:

Objective I.A. Expansion of the transportation system.

Policy I.A.1. Increase transportation capacity and modernize transportation infrastructure in accordance with existing master plans and laws requiring accessibility for people with disabilities.

Policy I.A.2. Improve regional mobility in areas of the State experiencing rapid urban growth and road congestion.

Discussion: As discussed under the Hawaii State Plan, replacing deficient bridges is integral to HDOT’s mission of providing a safe, efficient, and accessible transportation system for the public. The replacement bridge would be designed using current design standards adopted by HDOT for planning and engineering highway projects in Hawaii.

4.2.3 State Land Use Law

The State Land Use Commission, pursuant to HRS Chapters 205 and 205A and HAR Chapter 15-15, is empowered to classify all lands in the State into one of four land use districts: Urban, Rural, Agricultural, and Conservation. The lands within and surrounding the project area are classified in the Urban District. Roadways are a permitted use in the Urban District. No change in land use classification would be needed for the proposed project.

4.2.4 Coastal Zone Management Program and Federal Consistency Determination

In 1977, Hawaii enacted HRS Chapter 205A, Hawaii CZM Program, to carry out the State's CZM policies and regulations under the Federal CZM Act (as discussed in Section 4.1.14). The CZM area encompasses the entire State, including all marine waters seaward, to the extent of the State's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. As a result, the project is within the CZM area and is subject to consistency with the objectives and policies of the Hawaii CZM Program. The CZM Federal Consistency Certification is reviewed by the State Office of Planning.

The Hawaii CZM Program focuses on ten policy objectives:

- **Recreational Resources.** To provide coastal recreational opportunities accessible to the public and protect coastal resources uniquely suited for recreational activities that cannot be provided elsewhere.

Discussion: The project area does not contain any designated coastal recreation resources nor would it affect access to coastal recreation opportunities.

- **Historic Resources.** To protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the CZM area that are significant in Hawaiian and American history and culture.

Discussion: Studies focusing on archaeology, historic architecture, and cultural perspectives were conducted for this project. Consultation under Section 106 of the NHPA and Chapter 6E, HRS were completed with an approved MOA that stipulates measures to mitigate effects on historic properties (see Appendix G). Two architectural resources identified within the Area of Potential Effect are eligible for listing on the National Register of Historic Places and Hawaii State Register of Historic Places: the Hanapepe River Bridge and flood control levee. To mitigate removal of the historic Hanapepe River Bridge, the proposed replacement structure is a three-span bridge with span lengths and arches similar to the existing bridge. New concrete railings would have similar style openings to reflect the aesthetics and historic character of the existing railing. Impacts on the historic levee would be mitigated by requiring the temporary bypass bridge to be constructed above the levee wall. Documentation of eligible historic properties would be completed before removal, as required by SHPD.

- **Scenic and Open Space Resources.** To protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Discussion: The project would be developed to ensure visual compatibility with the surrounding environment. The project is not located along the shoreline, and the replacement bridge would not negatively impact coastal scenic resources, nor is it anticipated to obstruct views of the landscape or open space resources.

- **Coastal Ecosystems.** To protect valuable coastal ecosystems, including reefs, from disruption and to minimize adverse impacts on all coastal ecosystems.

Discussion: Because of its inland location and the implementation of mitigation measures and BMPs during construction, the potential for sediment and/or pollutants to reach downstream waters would be reduced and the project is not expected to affect coastal ecosystems.

- **Economic Uses.** To provide public or private facilities and improvements important to the State's economy in suitable locations, and ensure that coastal dependent development such as harbors and ports, energy facilities, and visitor facilities are located, designed, and constructed to minimize adverse impacts in the coastal zone area.

Discussion: The project is not a coastal dependent development.

- **Coastal Hazards.** To reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Discussion: The project is located in a tsunami evacuation zone and floodplain. The replacement structure will be designed to meet current engineering (AASHTO) standards, and applicable environmental regulations. The proposed bridge would meet or exceed the capacity of the existing bridge to convey stormwater flows and would meet the FEMA requirement of no rise in the 100-year surface elevation within a floodway, documented by a No-Rise Certification. A Rain Event Action Plan will be prepared and implemented with procedures and precautions to be taken in the event of adverse weather events. In the event of a tsunami warning, all construction would stop and personnel would evacuate to the safe zone on higher ground mauka of the highway.

- **Managing Development.** To improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Discussion: A general public announcement was made regarding the CFLHD Hawaii Bridge Program, which covers a number of State highway bridges on three islands. A public information meeting was held in September 2015 to provide information, respond to questions, and solicit feedback. The public was also provided an opportunity to review and comment on the project through the HRS Chapter 343 EA process.

- **Public Participation.** To stimulate public awareness, education, and participation in coastal management; and maintain a public advisory body to identify coastal management problems and provide policy advice and assistance to the CZM program.

Discussion: The project does not contain a public participation component for programmatic coastal management issues. Project-specific input was elicited through the HRS Chapter 343 EA process.

- **Beach Protection.** To protect beaches for public use and recreation, and locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements because of erosion.

Discussion: The project is located inland and would not affect Kauai beaches.

- **Marine Resources.** To implement the State's ocean resources management plan.

Discussion: Although the project is not expected to affect marine resources directly, BMPs would be implemented to prevent degradation of the aquatic environment, including the quality of State waters.

Other key areas of the CZM program include (1) a permit system to control development within a Special Management Area (SMA) managed by each County and the Office of Planning (see Section 4.3.3) and (2) a Shoreline Setback Area that serves as a buffer against coastal hazards and erosion and protects view-planes and marine and coastal resources. Finally, a Federal Consistency provision requires that Federal activities, permits, and financial assistance be consistent with the Hawaii CZM program.

The proposed project is not located within the County of Kauai SMA. The proposed project does not involve the placement, construction, or removal of materials near the coastline, and does not have the potential to affect coastal resources. The proposed project is consistent with the CZM objectives that are relevant to preserving the existing highway infrastructure. FHWA will submit a Federal Consistency determination to the Office of Planning for its concurrence.

4.2.5 Act 50, Cultural Practices

Hawaii Act 50 (2000) sought to “promote and protect cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups” and requires the proposing agency/applicant under HRS Chapter 343 to consider cultural practices in a cultural impact assessment. A cultural impact assessment was completed for the project in compliance with this requirement, as discussed in Section 3.11.

4.2.6 HRS Chapter 6E

HRS Chapter 6E and HAR 13-275 through 284 delineate the State’s historic preservation review process. §6E-8 requires that the SHPD be given an opportunity to review the effect that a State or County project may have on historic properties. The proposed project may not commence until the SHPD has given written concurrence. Consultation pursuant to HRS 6E was conducted in tandem with Section 106 (see Section 4.1.2). Documentation related to the HRS Chapter 6E consultation process is included in Appendix G.

4.3 County of Kauai

4.3.1 Kauai General Plan

The Kauai General Plan is a policy document for the long-range comprehensive development of the County of Kauai and also provides the direction for future growth through 2020. The current General Plan was adopted in November 2000.

Chapter 7 of the General Plan relates to Public Facilities and Services. Relevant to this project is the following policy:

7.1.5(a) Use General Plan policies concerning rural character, preservation of historic and scenic resources, and scenic roadway corridors as part of the criteria for long-range highway planning and design. The goal of efficient movement of through traffic should be weighted against community goals and policies relating to community character, livability, and natural beauty.

Discussion: The project would be consistent with this policy, as it would involve replacing the Hanapepe River Bridge to maintain Kaumualii Highway as a safe and functional component of the regional transportation system. The replacement bridge would meet current standards for bridge engineering and functionality, and would not diminish community character, livability, or natural resources.

4.3.2 Zoning

County zoning provides the most detailed set of regulations affecting land development before actual construction. As shown on Figure 4-1, the project site is located primarily in the Open District, which was established to create and maintain an adequate and functional amount of predominantly open land to provide for the recreational and aesthetic needs of the community and to provide for the effective functioning of land, air, water, plant, and animal systems or communities. In the project vicinity, the Open District encompasses such natural and aesthetic features as the river corridor and adjacent open space areas. The proposed project is consistent with the current zoning and would not require any zoning change.

4.3.3 Special Management Area

The CZM objectives and policies (HRS Section 205A-2) were developed to preserve, protect and, where possible, restore the natural resources of Hawaii’s coastal zone. Any development within the SMA boundary requires a SMA Use permit that is administered by the County. The permitting process provides a heightened level of public scrutiny to ensure consistency with SMA objectives.

The proposed project is not located within the County's SMA (see Figure 4-2).

4.4 Transportation Plans

4.4.1 Statewide Federal-aid Highways 2035 Transportation Plan

The 2035 Transportation Plan was developed as the State’s first long-range multimodal transportation for Federal-aid highways. The plan is intended to guide transportation decisions by identifying goals and solutions within a context of limited resources. It addresses future land transportation needs for motorists, freight, transit, bicyclists, and pedestrians based on land use and socioeconomic projections through 2035.

The long-range plan was developed with participation from a wide spectrum of community members and stakeholders. A series of meetings were held to develop and refine the goal statements. Specifically relevant to this project are the goals provided in Table 4-1, which focus on prudent and timely investments in the transportation (highway) system to maintain functionality and longevity.

TABLE 4-1
Statewide Land Transportation Goals and Objectives

Goals	Objectives	Federal Planning Factor
3.1 Manage transportation assets and optimize investments	Plan and implement maintenance, resurfacing, rehabilitation, and reconstruction to optimize existing transportation system improvements and spending	Aligns to Moving Ahead for Progress in the 21st Century Act (MAP-21) Performance Goal: Infrastructure Condition—maintain highway infrastructure assets in state of good repair
3.2 Maintain safe, efficient, complete transportation system for the long term	Plan and implement existing system improvements to effectively sustain the overall transportation system’s safe, efficient, and complete operations	MAP-21, signed into law on July 6, 2012 (P.L. 112-141), is the current Federal authorization for surface transportation, whose full title is Moving Ahead for Progress in the 21 st Century Act

4.4.2 Federal-aid Highways 2035 Transportation Plan for the District of Kauai

Each district in the state has a Regional Federal-aid Highways 2035 Transportation Plan or regional long-range land transportation plan. The purpose of this plan is to provide a basis for making multimodal land transportation decisions over a 20-year time frame. As a regional plan, it serves as an interface between overarching state transportation issues and island-specific needs and funding priorities.

The *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai* (HDOT, 2014) includes a list of potential solutions that were evaluated based on ability to address local needs and deficiencies. The list of recommendations includes improvements to Kaumualii Highway, including the addition of two travel lanes from Hanapepe Road to Eleele Road. While this project would not overlap with the project area, the recommendation points to the importance of ongoing investment in Kaumualii Highway.

4.4.3 Bike Plan Hawaii

Bike Plan Hawaii is the statewide bicycle master plan, which serves as a blueprint for accommodating and promoting bicycle use. The latest update was completed in September 2003. The plan contains objectives and implementing actions, an inventory of existing facilities, and proposals to expand the network of bicycle facilities.

The bike plan includes a proposal for a future signed shared route on Kaumualii Highway between Kekaha and Hanapepe (Map No. 53b) (HDOT, 2003). The proposed project is consistent with bicycle planning because the replacement structure includes 8-foot-wide shoulders that would accommodate possible development of a future signed bike route.

4.4.4 Statewide Pedestrian Master Plan

The *Statewide Pedestrian Master Plan*, completed in May 2013, provides a comprehensive strategy for improving pedestrian safety, mobility, and accessibility along State highways. The plan identifies and prioritizes pedestrian infrastructure projects throughout the State.

The pedestrian plan does not address foot traffic in the vicinity of Hanapepe Bridge (HDOT, 2013). Nevertheless, the proposed design would replace the 5-foot raised sidewalk on both sides of the bridge for the safety and comfort of people who cross on foot.

4.5 References

County of Kauai. 2000. *The Kaua'i General Plan*.

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State of Hawaii Department of Transportation (HDOT). 1991. *Transportation; State Functional Plan*.

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State of Hawaii Department of Transportation (HDOT). 2013. *Statewide Pedestrian Master Plan*.

State of Hawaii Department of Transportation (HDOT). 2014. *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai*. June.

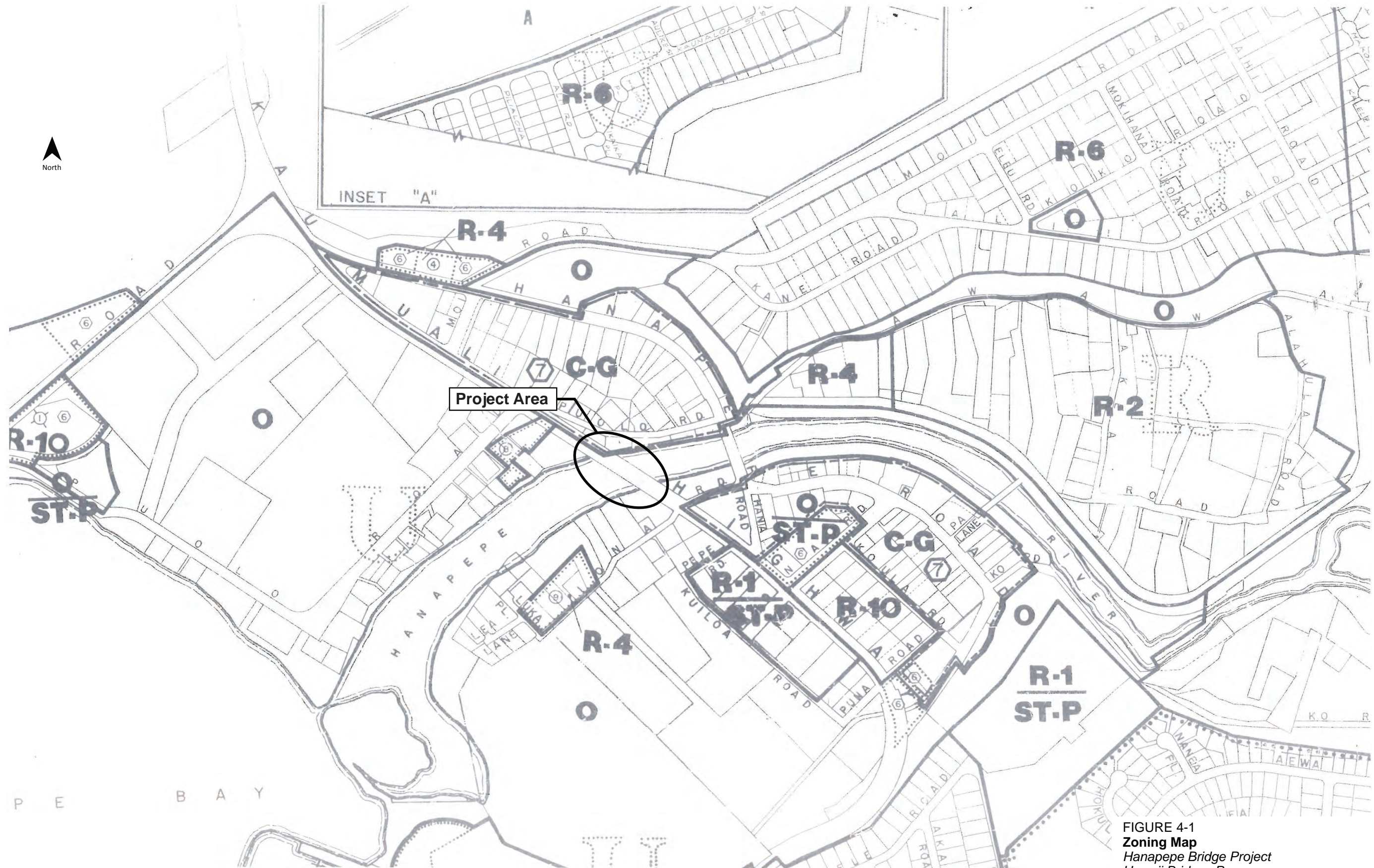
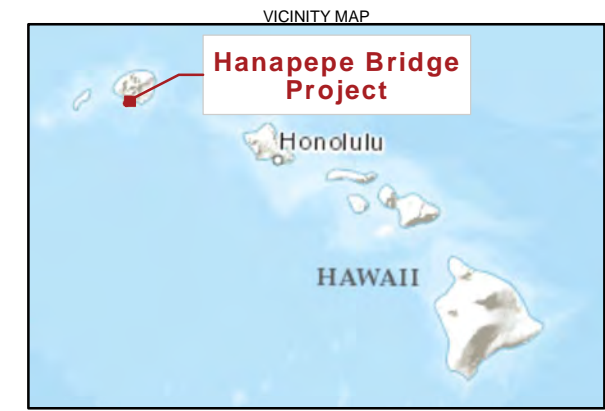
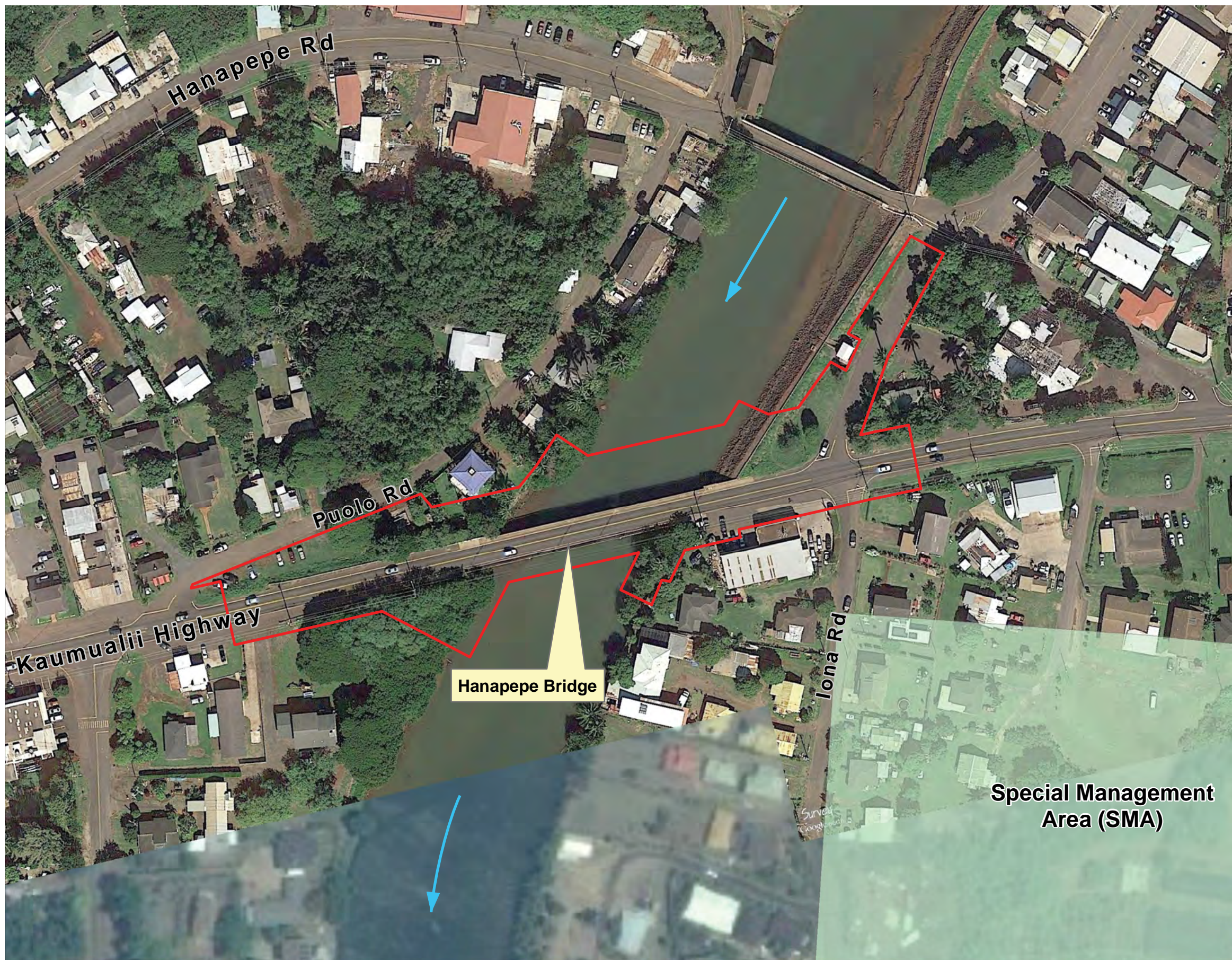


FIGURE 4-1
Zoning Map
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



LEGEND

- Project Area
- Special Management Areas

- Notes:
1. High-Res Imagery Source: Google Earth 12/16/2013
 2. Low-Res Imagery Source: Digital Globe 08/26/2011
 3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

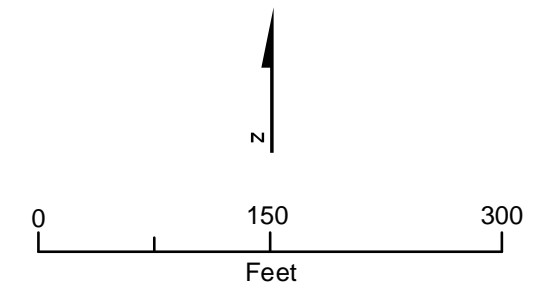


FIGURE 4-2
Special Management Area (SMA)
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

Findings and Reasons Supporting the Determination

The analysis presented in this EA has found that the potential for impacts associated with the proposed project would not be significant, or would be mitigated to less than significant levels. Potential environmental impacts are generally temporary, occurring during construction, and are not expected to adversely impact the long-term environmental quality of the area surrounding the proposed project. This section summarizes the significance criteria used to determine whether the proposed project would have a significant effect on the environment.

5.1 Significance Criteria

The potential effects of the proposed project were evaluated based on the Significance Criteria specified in HAR §11-200-12. Below is a summary of potential short-term and long-term effects of the action relative to the criteria.

Involves an irrevocable commitment to, loss or destruction of any natural or cultural resources. The proposed project would demolish the existing three-span bridge constructed in 1938, which is eligible for listing on the National and Hawaii Registers of Historic Places. Demolition of the historic Hanapepe River Bridge would be an adverse effect. To mitigate this effect, the proposed replacement structure is a three-span bridge with span lengths and arches similar to the existing bridge. New concrete railings would have similar style openings to reflect the aesthetics and historic character of the existing railing.

The ca. 1959 levee on the upstream, east bank is also eligible for listing on the National and Hawaii Registers. New bridge abutments would remove about 7 feet of the levee (which has an overall length of approximately 2,200 feet). To minimize impacts to the levee wall, the temporary bypass bridge will be designed to clear the height of the wall.

No other eligible historic properties were found in the project area. The contractor would be required to comply with State laws and administrative rules for handling inadvertent discoveries of cultural artifacts and human remains during construction.

Biological surveys of the project study area found no threatened or endangered plant or animal species. BMPs and protocols would be implemented to avoid and minimize contact with individual members of protected migratory birds, waterbirds or nene, or the Hawaiian hoary bat that may be encountered in the project limits.

Curtails the range of beneficial uses of the environment. Replacing the existing structure in place would not curtail the range of beneficial uses of the environment.

Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in HRS Chapter 344, and any revisions thereof and amendments thereto, court decisions, or executive orders. The proposed project is consistent with the environmental policies, goals, and guidelines defined in HRS Chapter 344. In particular, the project is consistent with transportation guidelines by improving the regional transportation infrastructure.

Transportation

- A. *Encourage transportation systems in harmony with the lifestyle of the people and environment of the State.*
- B. *Adopt guidelines to alleviate environmental degradation caused by motor vehicles.*

- C. *Encourage public and private vehicles and transportation system to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.*

Kaumualii Highway through Hanapepe Town carries all modes of land transportation on a daily basis, including passenger vehicles, buses, freight trucks, and bicyclists. The highway connects communities throughout the west side. It is used by commuters for work and school, and is essential for commerce and emergency response. The existing structure has exceeded its design life and a replacement structure is needed to maintain system-wide integrity.

Substantially affects the economic or social welfare of the community or State. The proposed project would have a positive impact on the economic and social welfare of the community by improving the long-term functionality of the highway system.

Substantially affects public health. The project site is in an established transportation corridor and would not adversely affect public health. It is part of a highway system that is a critical component of Kauai's emergency response and recovery capabilities. Preserving this transportation system would benefit public health and safety.

Involves substantial secondary impacts, such as population changes or effects on public facilities. The proposed project would not change the traffic volume using the structure or the highway. Therefore, the new structure itself would not generate secondary impacts, such as population growth or the need to expand public facilities.

Involves a substantial degradation of environmental quality. The replacement structure would not substantially degrade environmental quality. By design and function, the proposed structure would provide a safe crossing while minimizing harm to the surrounding environment.

Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions. The proposed project is a self-contained action and is not part of additional and/or related actions. There are no other HDOT or FHWA projects within a 1-mile radius of the Hanapepe River Bridge.

Substantially affects a rare, threatened, or endangered species, or its habitat. Biological surveys in September 2014 found no rare, threatened, or endangered species in the study area. However the biological resource assessment (SWCA 2015) noted that four endangered waterbirds—Hawaiian duck, Hawaiian coot, Hawaiian gallinule, and Hawaiian stilt—could be present or enter the project area. Nene may also be present on occasion and could fly over the project area. The endangered Hawaiian petrel and proposed endangered band-rumped petrel and the threatened Newell's shearwater may be affected by bright lights while transiting between their nest sites and the ocean. Hawaiian hoary bats may forage or roost in the project area. BMPs would be implemented to avoid and minimize adverse impacts, such that the project is not expected to substantially affect these species.

Detrimentially affects air or water quality or ambient noise levels. There would be short-term impacts on air quality and noise levels during the construction period. Mitigation measures would be implemented to minimize construction-related noise and dust impacts. In the long term, there would be no adverse impacts on air and water quality.

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. This project is located within a FEMA-designated floodplain and tsunami evacuation zone. The replacement structure is being designed in accordance with standards appropriate to the geologic, hydrologic, and seismic setting.

Substantially affects scenic vistas and view planes identified in County or State plans or studies. According to the Kauai General Plan, portions of Kaumualii Highway are identified as a scenic roadway corridor. This

designation is typically applied to roadways that travel through undeveloped, rather than urban areas. Even though the stretch of highway through Hanapepe Town is not a scenic roadway corridor, the bridge offers an outstanding *mauka* view of the Hanapepe River. Because the proposed bridge will feature a railing with openings similar to the existing railing, views from the bridge will not be substantially affected.

Requires substantial energy consumption. Fuel would be consumed by construction vehicles and equipment, but this use would be comparable to other construction projects and no adverse effects are expected.

5.2 Conclusion

Through structure design, impact avoidance and minimization actions, and proposed BMPs and mitigation measures, the analysis contained in this EA has determined that the proposed project would have no significant adverse impacts or would have impacts that can be mitigated to less than significant levels.

CHAPTER 6

Determination

Based on the information presented and examined in this document, the proposed project is not expected to produce significant adverse social, economic, cultural, or environmental impacts. Consequently, a finding of no significant impact is warranted, pursuant to HRS Chapter 343 and the provisions of HAR Subchapter 6 of Chapter 200, Title 11.

Consultation and Coordination

7.1 Organizations Consulted During Preparation of the Draft Environmental Assessment

The following agencies and organizations were contacted during preparation of the Draft EA. They received preliminary project information and asked to provide comments relative to specific environmental compliance (such as NHPA Section 106 and ESA Section 7) or for general assistance in preparing the Draft EA.

7.1.1 Federal

- NMFS
- USACE
- USFWS

7.1.2 State of Hawaii

- Department of Accounting and General Services
- Department of Education, Kauai Area Complex
- Department of Hawaiian Home Lands
- HDOH, Clean Water Branch
- HDOH, Environmental Planning Office
- DLNR
- Office of Hawaiian Affairs
- Office of Planning (OP)
- SHPD
- Senator Ronald Kouchi, Senate District 8
- Representative James Tokioka, House District 15

7.1.3 County of Kauai

- Civil Defense Agency
- Department of Parks and Recreation
- Department of Public Works
- Department of Water
- Fire Department
- Planning Department
- Police Department
- Transportation Agency
- Kauai Council Chair Mel Rapozo
- Kauai Council Vice Chair Ross Kagawa
- Kauai Councilmember Mason Chock
- Kauai Councilmember Arryl Kaneshiro
- Kauai Councilmember KipuKai Kualii
- Kauai Councilmember JoAnn Yukimura

7.1.4 Utilities

- Hawaiian Telcom
- KIUC
- Oceanic Time Warner Cable
- Sandwich Isles Communications

7.1.5 Organizations

- Kauai Chamber of Commerce
- Kauai Path
- Kauai Visitors Bureau
- Sierra Club, Kauai Group of Kauai Chapter
- West Kauai Business and Professional Association

7.2 Early Consultation Comment Letters Received

A total of six agencies responded to requests for comments during the Draft EA preparation period. Of these, substantive comments were received from five agencies. These comments are summarized below and incorporated into relevant sections of the Draft EA. A template of the letter requesting comments and the comment letters received are reproduced in Appendix H.

7.2.1 State Agencies

- **HDOH, Clean Water Branch** (letter dated May 18, 2015)
 1. A project that potentially impacts State waters must meet the following: (1) antidegradation policy, (2) designated uses, and (3) water quality criteria.
 2. NPDES permit coverage may be required.
 3. Permit from USACE may be required.
 4. Compliance with State water quality standards is required.
 5. All projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters.
- **HDOH, Environmental Planning Office** (letter dated May 12, 2015)
 1. Use of the online Hawaii Environmental Health Portal is encouraged.
 2. Water Quality Standards Maps have been updated and are posted online.
 3. University of Hawaii studies related to potential sea level rise changes in Hawaii are available online.
- **DLNR, Commission on Water Resource Management** (memo dated January 7, 2015, attached to letter from Russell Tsuji, Administrator, DLNR Land Division, dated January 15, 2015)

A Stream Channel Alteration Permit is needed before alteration(s) can be made to the stream bed and/or banks.
- **Office of Planning** (letter dated May 1, 2015)
 1. Verify project TMKs.
 2. Draft EA should contain an analysis of project conformance with the Hawaii State Plan.
 3. Draft EA should contain an assessment of project conformance with CZM objectives.
 4. Confirm whether an SMA permit is required.
 5. Federal Consistency Review should be listed as a potential requirement.
 6. Draft EA should include a section on watershed protection and management (see Hawaii Watershed Guidance developed by OP).
 7. Consider OP's Stormwater Impact Assessment when evaluating project-related stormwater impacts.
 8. Consider Low Impact Development design concepts and BMPs.

7.2.2 County Agencies

- **Kauai Department of Public Works** (letter dated May 6, 2015)
 1. Hanapepe River Bridge lies in Zone AEF, floodway. Certify that the proposed work will not increase the base flood elevation.
 2. Discuss and evaluate construction-related traffic impacts.

7.3 Hanapepe Public Information Meeting, September 16, 2015

A public information meeting was held on September 16, 2015, at the Hanapepe Public Library to provide an overview of the project — including purpose and need, proposed design elements, construction schedule, and traffic management during construction — and to obtain community feedback. The meeting was attended by 30 to 35 people. Primary concerns related to the following issues are summarized below. More detailed notes are included in Appendix I.

- Structural deficiencies resulting in load limits
- Bridge design that will allow passage of floating debris, anticipates rising sea levels, accommodates recreational uses, and is aesthetically pleasing
- Relative differences in cost and longevity between alternatives
- Design and load capacity of the temporary bridge
- Pedestrian accommodations, including ADA compliance, lighting, and temporary detour via the County bridge
- Possibility of proceeding with a temporary bridge if full funding is not immediately available

7.4 Distribution List for Draft EA

The following agencies, organizations, and individuals were contacted during the Draft EA public review and comment period (May 23 to June 21, 2016).

7.4.1 Federal

- National Oceanic and Atmospheric Administration
- NMFS
- USACE
- USEPA
- USFWS

7.4.2 State of Hawaii

- Department of Accounting and General Services
- Department of Education, Kauai Area Complex
- Department of Hawaiian Home Lands
- HDOH, Clean Water Branch
- HDOH, Environmental Planning Office
- DLNR
- Office of Hawaiian Affairs
- OP
- SHPD
- Senator Ronald Kouchi, Senate District 8
- Representative James Tokioka, House District 15

7.4.3 County of Kauai

- Civil Defense Agency
- Department of Parks and Recreation
- Department of Public Works
- Department of Water
- Fire Department
- Mayor's Office
- Planning Department
- Police Department
- Transportation Agency
- Kauai Council Chair Mel Rapozo
- Kauai Council Vice Chair Ross Kagawa
- Kauai Councilmember Mason Chock
- Kauai Councilmember Arryl Kaneshiro
- Kauai Councilmember KipuKai Kualii
- Kauai Councilmember JoAnn Yukimura

7.4.4 Utilities

- Hawaiian Telcom
- KIUC
- Oceanic Time Warner Cable
- Sandwich Isles Communications

7.4.5 Organizations

- Kauai Chamber of Commerce
- Kauai Path
- Kauai Visitors Bureau
- Sierra Club, Kauai Group of Kauai Chapter
- West Kauai Business and Professional Association

7.4.6 Individuals

- Property Owner/Resident TMK: [4] 1-8-008:027
- Property Owner/Resident TMK: [4] 1-8-008:061
- Property Owner/Resident TMK: [4] 1-8-008:062
- Property Owner/Resident TMK: [4] 1-9-004:026
- Property Owner/Resident TMK: [4] 1-9-005:001
- Property Owner/Resident TMK: [4] 1-9-005:002
- Property Owner/Resident TMK: [4] 1-9-005:003
- Property Owner/Resident TMK: [4] 1-9-005:004
- Property Owner/Resident TMK: [4] 1-9-005:010
- Property Owner/Resident TMK: [4] 1-9-005:011
- Property Owner/Resident TMK: [4] 1-9-006:005
- Property Owner/Resident TMK: [4] 1-9-006:006
- Property Owner/Resident TMK: [4] 1-9-006:007
- Property Owner/Resident TMK: [4] 1-9-006:008
- Property Owner/Resident TMK: [4] 1-9-006:009
- Property Owner/Resident TMK: [4] 1-9-006:012
- Property Owner/Resident TMK: [4] 1-9-006:016
- Property Owner/Resident TMK: [4] 1-9-006:035

- Property Owner/Resident TMK: [4] 1-9-006:036
- Property Owner/Resident TMK: [4] 1-9-007:019
- Property Owner/Resident TMK: [4] 1-9-007:020
- Property Owner/Resident TMK: [4] 1-9-007:021
- Property Owner/Resident TMK: [4] 1-9-010:013
- Property Owner/Resident TMK: [4] 1-9-010:015
- Property Owner/Resident TMK: [4] 1-9-010:016
- Property Owner/Resident TMK: [4] 1-9-010:017
- Property Owner/Resident TMK: [4] 1-9-010:018
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- Property Owner/Resident TMK: [4] 1-9-010:027
- Property Owner/Resident TMK: [4] 1-9-010:038
- Property Owner/Resident TMK: [4] 1-9-010:039
- Property Owner/Resident TMK: [4] 1-9-010:041
- Property Owner/Resident TMK: [4] 1-9-010:050
- Property Owner/Resident TMK: [4] 1-9-011:011

7.4.7 Public Library

- Hanapepe Public Library (hardcopy will be available for public review)

7.4.8 Media

- The Garden Island Newspaper

7.5 Comments Received on the Draft EA

Written comments on the Draft EA were received from 14 agencies, organizations, and individuals, as summarized below. Letters and responses are reproduced at the end of this chapter. Response letters were sent only to the 13 agencies providing substantive comments.

- **Hawaii Department of Accounting and General Services** (letter dated June 9, 2016)

Project does not directly impact Department of Accounting and General Services facilities, but concern expressed about traffic congestion resulting from the scheduled work and the need for adequate measures to redirect traffic.

- **HDOH, Clean Water Branch** (letter dated June 3, 2016)

1. No comments at this time.
2. Previously provided pre-assessment comments by letter dated May 18, 2015.
3. Project may need to fulfill requirements related to HAR, Chapters 11-54 and 11-55. Standard comments are available on the agency's website.

- **HDOH, Environmental Planning Office** (letter dated June 1, 2016)

1. Recommend reviewing standard comments and strategies to support sustainable and healthy design. Environmental Health Management Maps have been prepared for each county.
2. Suggest reviewing the requirements for the NPDES permit.
3. Recommend examining and utilizing the Hawaii Environmental Health Protocol.

4. Recommend reviewing the OEQC viewer showing where previous HRS 343 documents have been prepared.
 5. Encourage using the EPA EJSCEEN tool.
- **DLNR, Commission on Water Resource Management** (Memo dated June 20, 2016, attached to transmittal letter from DLNR Land Division dated June 23, 2016)
A Stream Channel Alteration Permit is required before any alteration can be made to the bed and/or banks of a stream channel.
 - **DLNR, Engineering Division** (Memo dated June 2, 2016, attached to transmittal letter from DLNR Land Division dated June 20, 2016)
The rules and regulations of the National Flood Insurance Program are in effect when development falls within a designated Flood Hazard Zone. The owner of the proposed property and/or their representative is responsible for researching the Flood Hazard Zone designation for the project.
 - **DLNR, Land Division-Kauai District** (Memo dated June 2, 2016, attached to transmittal letter from DLNR Land Division dated June 20, 2016)
No comments
 - **Office of Environmental Quality Control** (letter dated June 22, 2016)
 1. OEQC encourages incorporating low-impact development concepts.
 2. For revegetation, OEQC recommends planting native vegetation.
 3. The description of impacts with respect to Waters of the U.S. is not clear. Clarify what “0.77 acres of water” means. Does this refer to wetlands? What is the nature of the permanent impact?
 4. OEQC recommends considering climate change for this and all future projects.
 - **Office of Planning** (letter dated June 20, 2016)
 1. Draft EA addresses comments made in OP’s pre-consultation letter dated May 1, 2015.
 2. Draft EA addresses project’s consistency with applicable policies and objectives of the Hawaii State Plan. The Final EA should include an analysis that addresses the Hawaii State Plan in its entirety.
 3. OP acknowledges the need for a Federal Consistency Determination under the Hawaii Coastal Zone Management Program.
 4. No further comments at this time.
 - **Kauai Department of Public Works** (letter dated June 17, 2016)
 1. The Hanapepe River Bridge lies within Zone AEF of the Flood Insurance Rate Map, where AEF is the floodway area of Zone AE. It is noted that Section 3.4.4 of the DEA states that “The proposed bridge would meet or exceed the capacity of the existing bridge to convey stormwater flows and would meet the FEMA requirement of a no rise in the 100-year water surface elevation within a floodway, documented by a No-Rise Certification.”
 2. It is noted that Section 3.15.2 of the DEA states that a Traffic Management Plan (TMP) will be developed by the contractor in consultation with the Kauai Department of Public Works. The department appreciates the opportunity to review and comment on the TMP before construction because of potential impacts on County roads and facilities.

- **Kauai Department of Water** (letter dated June 17, 2016)
 1. The Kauai Department of Water (DOW) owns and operates water system facilities, including transmission water lines along the project site.
 2. The project may affect DOW water system facilities. Recommend that applicant submits construction drawings to DOW for review and approval.
 3. Request for water service will depend on the adequacy of the source, storage, and transmission facilities that exist at the time.
- **Hawaiian Telcom** (letter dated May 23, 2016)

Draft EA refers to “Hawaiian Telecom” which is incorrect and should be changed to “Hawaiian Telcom.”
- **Historic Hawaii Foundation** (letter dated June 21, 2016)
 1. Disagree with proposed Finding of No Significant Impact for the Draft EA, prepared in accordance with NEPA and Chapter 343, HRS.
 2. Draft EA fails to incorporate results of Section 106 consultation and agreement.
 3. Draft EA fails to include binding commitments to resolve adverse effects.
 4. Draft EA fails to address prior comments.
 5. Prudent and feasible alternatives to the use of a historic property. FHWA proposes a *de minimis* finding because there is no adverse effect to the levee, but this finding is inappropriate because there is adverse effect on the bridge. Alternatives to avoid any use of the historic bridge are not proposed for Hanapepe Bridge, therefore the *de minimis* finding is not warranted.
- **Donald Sakata** (letter dated June 3, 2016)
 1. Comments regarding reconsideration of bridge design to address flood conditions.
 2. Questions related to effects of tidal changes on flood conditions, addition of water level gauges, and subsurface material in the river channel.
 3. Questions related to dismissal of the uniform wide-flange girder bridge design alternative, potential impacts of stormwater flows during construction, and the feasibility of using the design for Kapaa Stream Bridge replacement for other bridge replacement projects on Kauai.
 4. Comments on the evaluation of historic significance and the need for other considerations, such as improvements in hydraulic capacity, cost, and schedule.
 5. Comments on traffic congestion, construction scheduling and logistics, and the need for preplanning.
- **Thomas Teitge** (letter dated June 10, 2016)

Project has conflicted with efforts to sell his property. The temporary bypass road, as well as the potential loss of three coconut palms, will render the home uninhabitable during construction. Therefore, the owner proposes that the State and County acquire his property, possibly for recreational purposes.

DRAFT EA COMMENT AND RESPONSE LETTERS

- Hawaii Department of Accounting and General Services
- HDOH, Clean Water Branch
- HDOH, Environmental Planning Office
- DLNR, Commission on Water Resource Management
- DLNR, Engineering Division
- DLNR, Kauai District
- Office of Environmental Quality Control
- Office of Planning
- Kauai Department of Public Works
- Kauai Department of Water
- Hawaiian Telcom
- Historic Hawaii Foundation
- Donald Sakata
- Thomas Teitge

DAVID Y. IGE
GOVERNOR



DOUGLAS MURDOCK
COMPTROLLER
AUDREY HIDANO
Deputy Comptroller

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

JUN - 9 2016

(P)1154.6

Mr. Mike Will, P.E., Project Manager
Central Federal Lands Highway Division
Federal Highway Administration
U.S. Department of Transportation
12300 West Dakota Avenue, Suite 380A
Lakewood, CO 80228-2583


Dear Mr. Will:

Subject: Draft Environmental Assessment for
Hanapepe River Bridge Replacement Project No. HI STP SR50(1)
Kaumualii Highway (State Route 50), Waimea District, Kauai, Hawaii
TMK: (4) 1-9-007: 001 (por) Hanapepe River, 013 (por) and 034 (por);
1-9-010: 014 (por), 015 (por), 046 (por), and 050 (por); and Kaumualii Hwy and
Iona Road Right of Way

Thank you for the opportunity to comment on the subject project. Although, the project does not directly impact our facilities, the Department of Accounting and General Services are concerned about the traffic congestion resulting from the scheduled work and that adequate measures for redirecting traffic are in place.

If you have any questions, your staff may please contact Ms. Gayle Takasaki of the Planning Branch at (808) 586-0584.

Sincerely,


for DOUGLAS MURDOCK
Comptroller

c: Mr. Eric Agena, District Engineer, DAGS KDO
Ms. Kathleen Chu, CH2M HILL



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: DOUGLAS MURDOCK, COMPTROLLER
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. Box 119
HONOLULU, HI 96810

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Murdock:

Thank you for your letter on the Draft EA dated June 9, 2016.

To address concerns regarding traffic congestion during construction, the contractor will be required to prepare a Maintenance of Traffic Plan. Because a State highway and County roads will be affected, the plan will require review and approval by the Hawaii Department of Transportation and Kauai Public Works Department. The contractor will coordinate with HDOT to provide the community with updated project information on a regular basis. Any impacts to traffic would be provided to our project engineer who will convey this information to the HDOT public information office. Information will be disseminated through multiple channels, including electronic Variable Message Signs located in the project vicinity.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

DAVID Y. IGE
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
DOHCWB

06006PNN.16

June 3, 2016

Mr. J. Michael Will, P.E.
Project Manager
Central Federal Lands Highway Division
Federal Highway Administration
12300 West Dakota Avenue, Suite 380A
Lakewood, Colorado 80228-2583

Dear Mr. Will:

SUBJECT: Comments on the Draft Environmental Assessment for the Hanapepe River Bridge Replacement, Project No. HI STP SR50(1) Waimea District, Island of Kauai, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document and has no comments at this time. The DOH-CWB provided comments on the Pre-Assessment Consultation for the Hawaii Bridge Program (Letter No. 05028PNN.15, dated May 18, 2015).

Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://health.hawaii.gov/epo/files/2013/05/CWB-standardcomment.pdf>.

If you have any questions, please visit our website at: <http://health.hawaii.gov/cwb>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,


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

NN:ak

c: Ms. Kathleen Chu, CH2M Hill [via e-mail kathleen.chu@ch2m.com only]
DOH-EPO #16-164 [via e-mail Noella.Narimatsu@doh.hawaii.gov only]



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: ALEC WONG, P.E.
CHIEF, CLEAN WATER BRANCH
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HI 96801

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Wong:

Thank you for sending comments on the Draft EA by letter dated June 3, 2016.

We note that you have no comments on the environmental assessment at this time. Our project team will continue to work with your staff as we submit a request for Section 401 Water Quality Certification.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL



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

In reply, please refer to:
File:

EPO 16-164

June 1, 2016

Ms. Kathleen Chu
CH2M Hill
1132 Bishop Street, Suite 1100
Honolulu, Hawaii 96813
Email: Kathleen.chu@ch2m.com

Dear Ms. Chu:

**SUBJECT: Draft Environmental Assessment (DEA) for Hanapepe River Bridge Replacement
Waimea, Kauai
TMKs: [4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por., and 1-9-010: 014 por.,
015 por., 046 por., and 050 por. Kaumualii Highway and Iona Road Rights-of-Way**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your DEA to our office via the OEQC link:

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Kauai/2010s/2016-05-23-KA-5B-DEA-Hanapepe-River-Bridge-Replacement.pdf

EPO strongly recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: <http://health.hawaii.gov/epo/landuse>. Projects are required to adhere to all applicable standard comments. EPO has recently updated the environmental Geographic Information System (GIS) website page. It now compiles various maps and viewers from our environmental health programs. The eGIS website page will be continually updated so please visit it regularly at: <http://health.hawaii.gov/epo/egis>.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: <https://eha-cloud.doh.hawaii.gov>. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

We suggest you review the requirements for the National Pollutant Discharge Elimination System (NPDES) permit. We recommend contacting the Clean Water Branch at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov after relevant information is reviewed at:

1. <http://health.hawaii.gov/cwb>
2. <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/standard-npdes-permit-conditions>
3. <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/forms>

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: <http://eha-web.doh.hawaii.gov/oeqc-viewer>. This viewer geographically shows where some previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

Ms. Kathleen Chu
Page 2
June 1, 2016

In order to better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: <http://www.epa.gov/ejscreen>.

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design. Thank you for the opportunity to comment.

Mahalo nui loa,



Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

LM:nn

- Attachment 1: EPO Draft Environmental Health Management Map - Kauai
- Attachment 2: Clean Water Branch: Water Quality Standards Map - Kauai
- Attachment 3: Wastewater Branch: Recycled Water Use Map of Project Area
- Attachment 4: Historic Sugarcane Map of Project Area
- Attachment 5: OEQC Viewer Map of Project Area
- Attachment 6: U.S. EPA EJSCREEN Report for Project Area

c: Christine Yamasaki, State of Hawaii, DOT {via email: christine.yamasaki@hawaii.gov}
DOH: DHO Kauai, CWB, HEER {via email only}

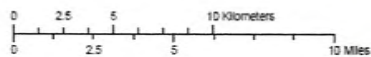
EPO Draft Environmental Health Management Map: <http://health.hawaii.gov/epo/egis>



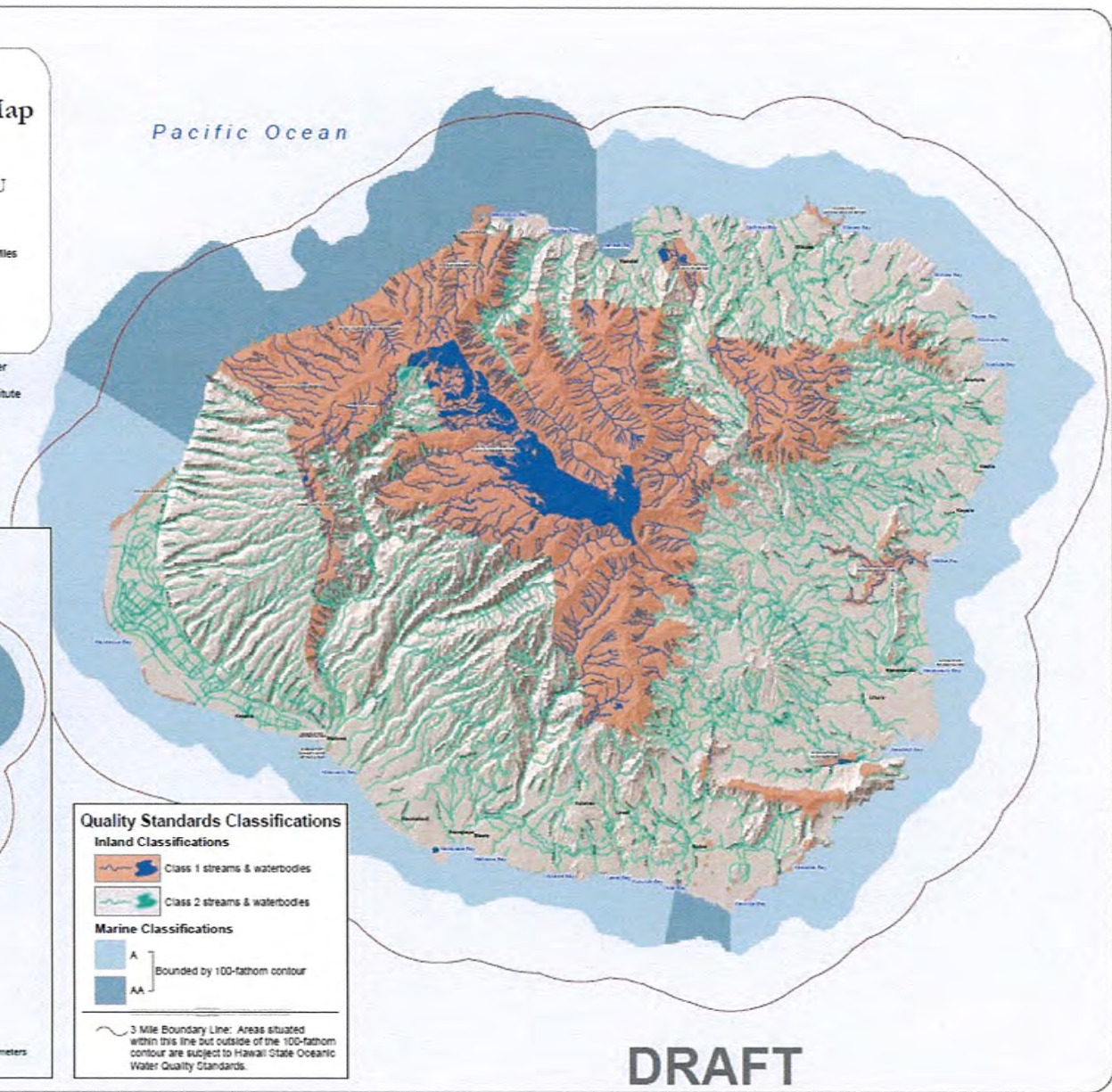
Hawaii Department of Health
Water Quality Standards Map

of the

ISLANDS OF KAUA'I & NI'HAU





This map is a geographic representation of Hawaii State Water Quality Standards as set forth in Hawaii Administrative Rules Chapter 11-54, but is intended for reference only, not to substitute for the governing language in the Water Quality Standards.




Quality Standards Classifications

Inland Classifications

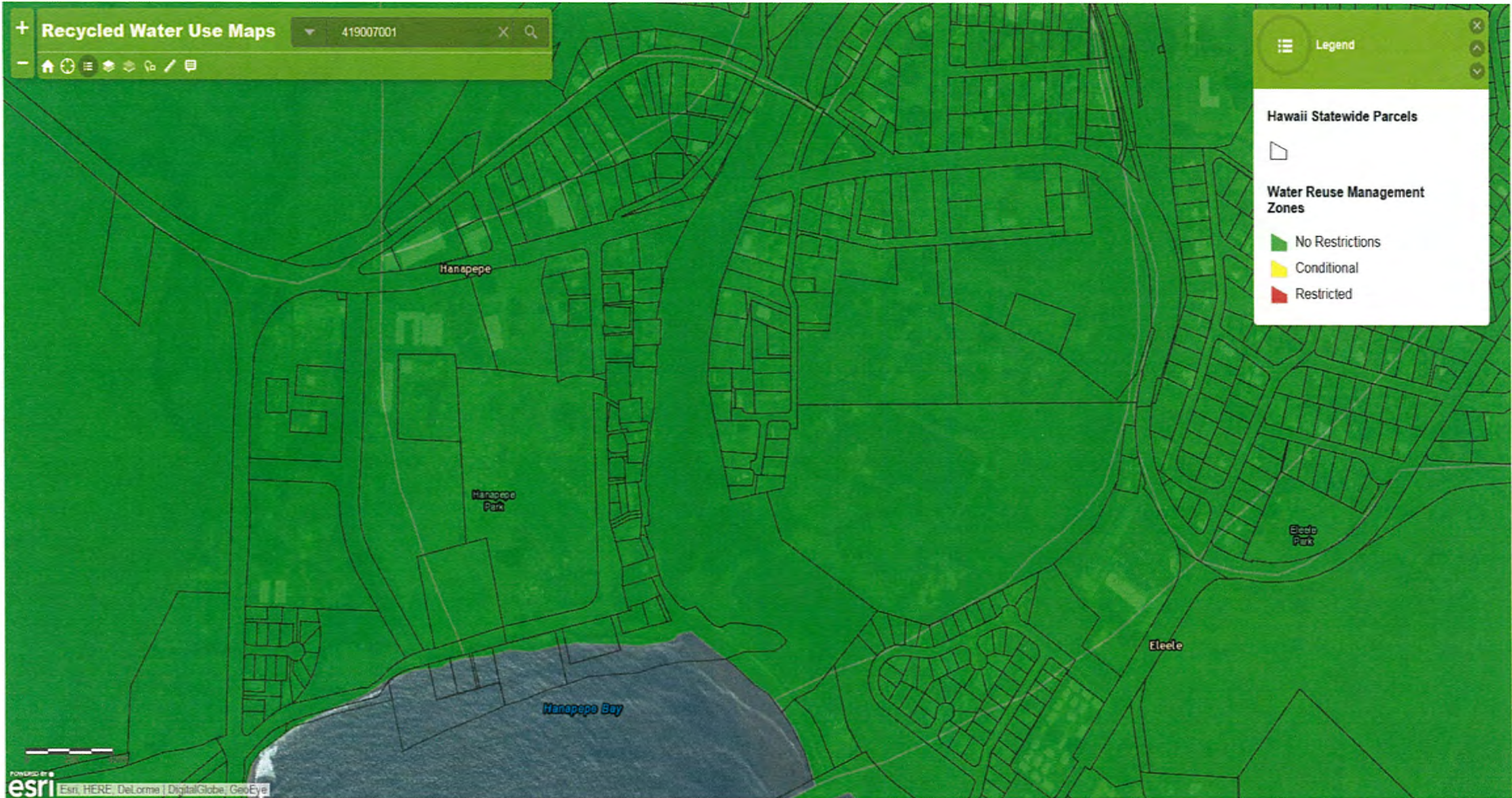
-  Class 1 streams & waterbodies
-  Class 2 streams & waterbodies

Marine Classifications

-  A
 -  AA
- Bounded by 100-fathom contour

 3 Mile Boundary Line: Areas situated within this line but outside of the 100-fathom contour are subject to Hawaii State Oceanic Water Quality Standards.

DRAFT



HISTORIC SUGARCANE LANDS MAP VIEWER

Legend

Details

Sugarcane - Sugarcane_1937



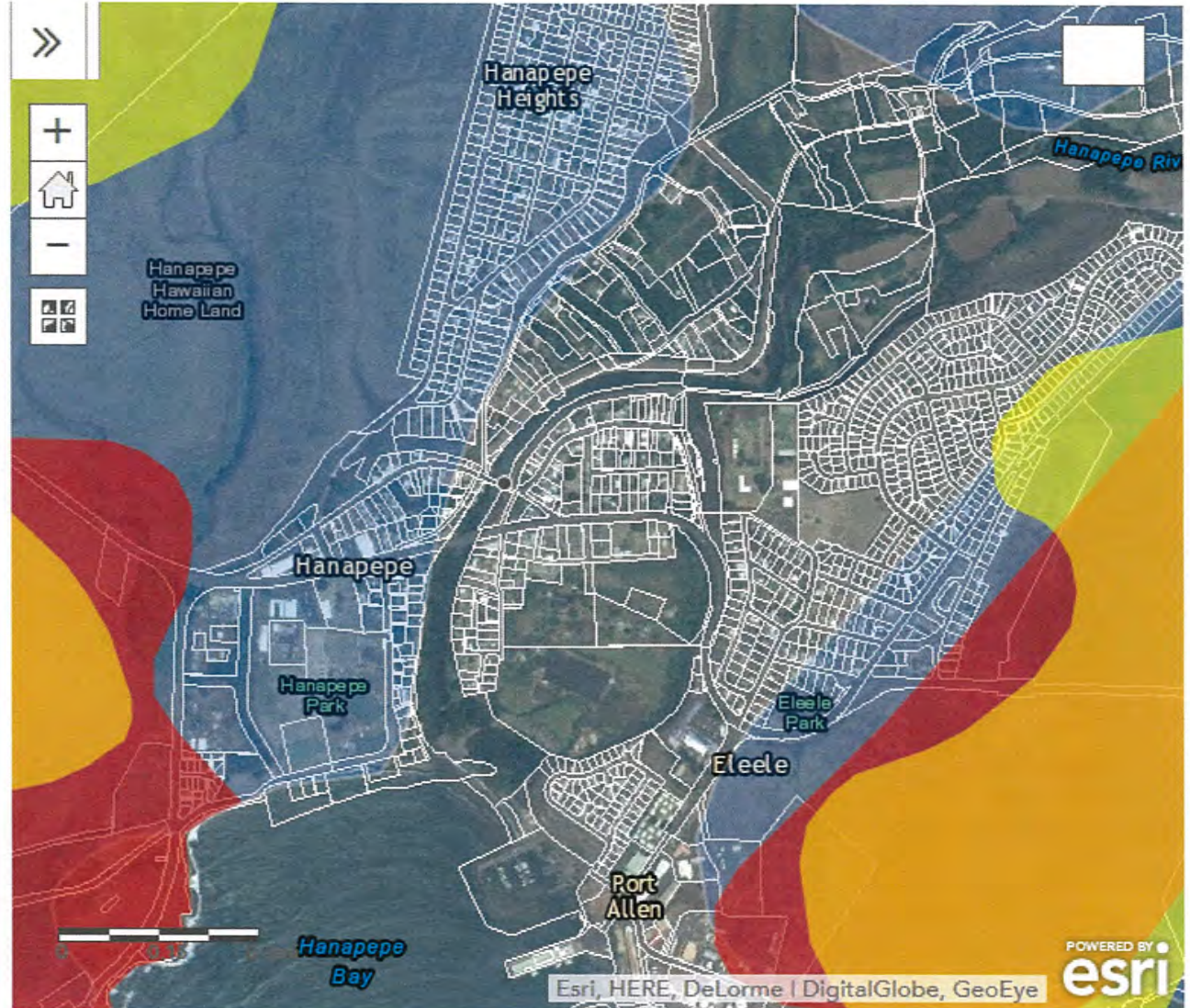
Sugarcane - Sugarcane_1920



Sugarcane - Sugarcane_1900



Statewide TMK NAD43



hanapepe x
2 sites found

Results Filter

Show sites with no location

HANAPEPE PUBLIC LIBRARY (FEA-FONSI)
Environmental Assessment (Agency)

HANAPEPE PUBLIC LIBRARY (FEA-FONSI)
Environmental Assessment (Agency)



Google

Map data ©2018 Google, Imagery ©2018 Google

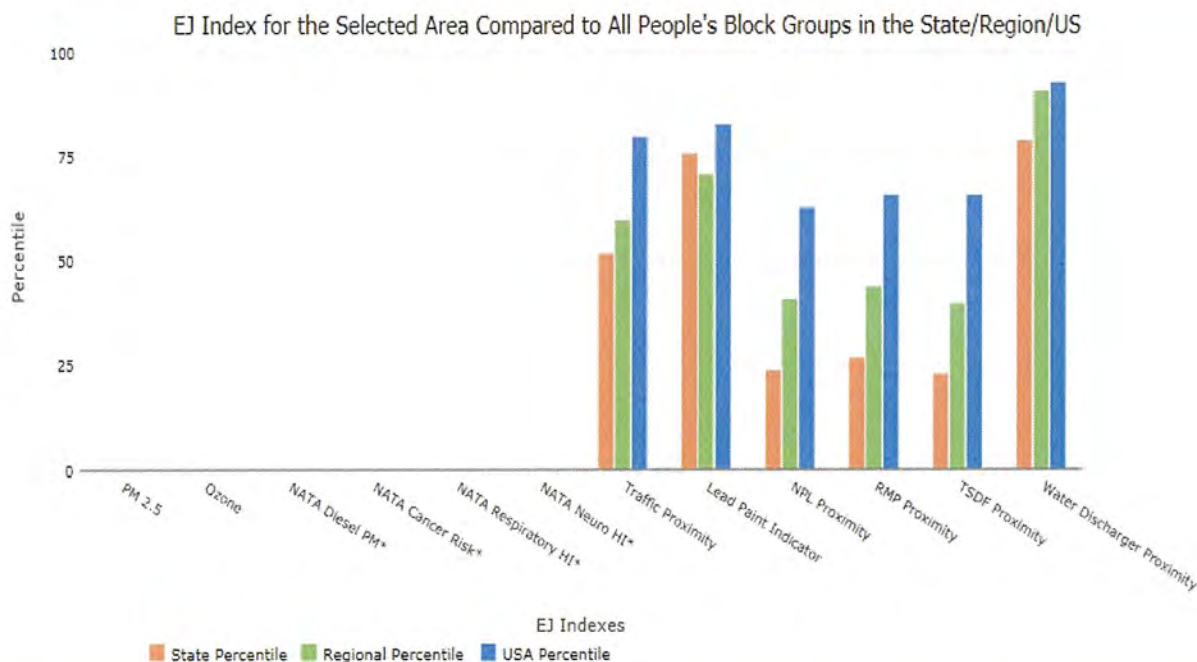
Powered by mapbox



0.5 mile Ring Centered at 21.908625,-159.592587
HAWAII, EPA Region 9
Approximate Population: 1010
 Hanapepe River Bridge Replacement



Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	52	60	80
EJ Index for Lead Paint Indicator	76	71	83
EJ Index for NPL Proximity	24	41	63
EJ Index for RMP Proximity	27	44	66
EJ Index for TSDF Proximity	23	40	66
EJ Index for Water Discharger Proximity	79	91	93



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.



May 24, 2016
 + Digitized Point
 Buffer Area

1:18,055
 0 0.15 0.3 0.6 m
 0 0.05 0.1 0.2 km
 © 2016 Esri. All rights reserved. Esri, the Esri logo, ArcGIS, and the ArcGIS logo are either registered trademarks or trademarks of Esri Inc. in the United States and/or other countries.

Selected Variables	Raw data	State Average	%ile in State	EPA Region Average	%ile in EPA Region	USA Average	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM ($\mu\text{g}/\text{m}^3$) ^a	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Air Toxics Cancer Risk (risk per MM) ^a	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index ^a	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index ^a	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	79	280	51	190	49	110	69
Lead Paint Indicator (% pre-1960s housing)	0.39	0.17	84	0.25	70	0.3	67
NPL Proximity (site count/km distance)	0.0056	0.092	20	0.11	5	0.096	1
RMP Proximity (facility count/km distance)	0.044	0.18	11	0.41	6	0.31	10
TSDF Proximity (facility count/km distance)	0.0056	0.092	17	0.12	1	0.054	12
Water Discharger Proximity (count/km)	0.72	0.33	89	0.19	96	0.25	93
Demographic Indicators							
Demographic Index	58%	51%	73	48%	68	35%	81
Minority Population	88%	77%	65	57%	80	36%	89
Low Income Population	29%	25%	65	35%	45	34%	46
Linguistically Isolated Population	1%	6%	26	9%	21	5%	47
Population with Less Than High School Education	9%	10%	55	18%	36	14%	41
Population under Age 5	6%	6%	56	7%	48	7%	53
Population over Age 64	11%	14%	38	12%	59	13%	48

^aThe National-Scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: www.epa.gov/environmentaljustice



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: LAURA LEIALOHA PHILLIPS McINTYRE, AICP
PROGRAM MANAGER, ENVIRONMENTAL PLANNING OFFICE
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HI 96801

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Ms. McIntyre:

Thank you for sending comments on the Draft EA by letter dated June 1, 2016.

We acknowledge and have reviewed the information provided on the Environmental Health Management Maps, NPDES requirements, the Hawaii Environmental Health Portal, OEQC viewer, and EPA EISCREEN tool. These resources are helpful and we are using them in project planning and permitting.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
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

June 23, 2016

Central Federal Lands Highway Division
Federal Highway Administration
Attention: Mr. Michael Will
12300 West Dakota Avenue, Suite 380A
Lakewood, Colorado 80228-2583

via email: Michael.Will@dot.gov

CH2M Hill
Attention: Ms. Kathleen Chu
1132 Bishop Street; Suite 1100
Honolulu, Hawaii 96813

via email: Kathleen.Chu@ch2m.com

Dear Mr. Will and Ms. Chu:

SUBJECT: Hanapepe River Bridge Replacement, Project No. HI STP SR50(1)

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on June 20, 2016, enclosed are comments from the Commission on Water Resources Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT



2016 JUN 22 AM 10:51

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 26, 2016

MEMORANDUM

RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2016 MAY 26 PM 1:08

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Kauai District
- Historic Preservation

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Hanapepe River Bridge Replacement, Project No. HI STP SR50(1)

LOCATION:

Hanapepe, Waimea; Island of Kauai; TMK: (4) 1-9-007:001, 013 & 034 (pors.); 1-9-010:014, 015, 046 & 050 (pors.)

APPLICANT:

U.S. Department of Transportation; Central Federal Lands Highway Division

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **June 17, 2016**.

The DEA can be found on-line at: <http://health.hawaii.gov/oegc/> (Click on the Current Environmental Notice under Quick Links on the right.)

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: /s/ Lenore N. Ohye for Jeffrey T. Pearson, P.E.

Print Name: Jeffrey T. Pearson, P.E., Deputy Director

Date: June 20, 2016

cc: Central Files

RFD 14202
14635



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

June 20, 2016

REF: RFD.4420.2

TO: Mr. Russell Tsuji, Administrator
Land Division Oahu, DLNR-LD

FROM: Jeffrey T. Pearson, P.E., Deputy Director *Jeffrey T. Pearson*
Commission on Water Resource Management

SUBJECT: Hanapepe River Bridge Replacement, Project No. HI STP SR50(1)

FILE NO.: RFD.4420.2
TMK NO.: (4) 1-9-007:001, 013 & 034 (pors.); 1-9-010:014, 015, 046 & 050 (pors.)

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

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EAP as having high water efficiency can be found at <http://www.epa.gov/watersense>.
5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.
6. We recommend the use of alternative water sources, wherever practicable.
7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>.
8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

- 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

OTHER:

If you have any questions, please contact Dean Uyeno of the Commission staff at 587-0234.



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: JEFFREY T. PEARSON, P.E., DEPUTY DIRECTOR
COMMISSION ON WATER RESOURCES MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. Box 621
HONOLULU, HI 96809

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Peterson:

Thank you for your letter on the Draft EA dated June 20, 2016.

We have identified the Stream Channel Alteration Permit as a required permit for the project. Our project team will be working with your staff to ensure a complete application.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
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

June 20, 2016

Central Federal Lands Highway Division
Federal Highway Administration
Attention: Mr. Michael Will
12300 West Dakota Avenue, Suite 380A
Lakewood, Colorado 80228-2583

via email: Michael.Will@dot.gov

CH2M Hill
Attention: Ms. Kathleen Chu
1132 Bishop Street; Suite 1100
Honolulu, Hawaii 96813

via email: Kathleen.Chu@ch2m.com

Dear Mr. Will and Ms. Chu:

SUBJECT: Hanapepe River Bridge Replacement, Project No. HI STP SR50(1)

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

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



16 MAY 26 PM 01:52 ENGINEERING



SULANNE D. CASE
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

May 26, 2016

MEMORANDUM

TO:
FR:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division**
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Kauai District
- ~~Historic Preservation~~

TO:

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Hanapepe River Bridge Replacement, Project No. HI STP SR50(1)

LOCATION: Hanapepe, Waimea; Island of Kauai; TMK: (4) 1-9-007:001, 013 & 034 (pors.); 1-9-010:014, 015, 046 & 050 (pors.)

APPLICANT: U.S. Department of Transportation; Central Federal Lands Highway Division

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **June 17, 2016**.

The DEA can be found on-line at: <http://health.hawaii.gov/oecq/> (Click on the Current Environmental Notice under Quick Links on the right.)

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: 6/2/16

cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

To: Land Division

Ref: Hanapepe River Bridge Replacement, Waimea, Kauai, Hawaii

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a designated Flood Hazard.

The owner or the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zone designations can be found using the Flood Insurance Rate Map (FIRM), which can be accessed through the Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

National Flood Insurance Program establishes the rules and regulations of the NFIP - Title 44 of the Code of Federal Regulations (44CFR). The NFIP Zone X is a designation where there is no perceived flood impact. Therefore, the NFIP does not regulate any development within a Zone X designation.

Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may take precedence over the NFIP standards as local designations prove to be more restrictive. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- o Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai: County of Maui, Department of Planning (808) 270-7253.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

Date: 6/2/10



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: CARTY S. CHANG, CHIEF ENGINEER
ENGINEERING DIVISION, DLNR
P.O. BOX 621
HONOLULU, HI 96809

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Chang:

Thank you for sending comments on the Draft EA by memorandum dated June 2, 2016.

As reported in Section 3.4 of the EA, the project area is located with the Federal Emergency Management Agency regulated floodway of the Special Flood Hazard Area (Zone AE) as shown in Flood Insurance Rate Map, Community Panel No. 15000020287F, dated November 26, 2010. The project is being designed to meet applicable National Flood Insurance Program requirements. The new structure would not adversely affect flood conditions in Hanapepe River. Additionally, we are coordinating with the U.S. Army Corps of Engineers to obtain approval to modify the levee on the east bank pursuant to 33 U.S. Code 408.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 26, 2016

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Kauai District
- Historic Preservation

RECEIVED
 LAND DIVISION
 2016 JUN -8 AM 11:21
 DEPT. OF LAND &
 NATURAL RESOURCES
 STATE OF HAWAII

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Hanapepe River Bridge Replacement, Project No. HI STP SR50(1)

LOCATION:

Hanapepe, Waimea; Island of Kauai; TMK: (4) 1-9-007:001, 013 & 034 (pors.); 1-9-010:014, 015, 046 & 050 (pors.)

APPLICANT:

U.S. Department of Transportation; Central Federal Lands Highway Division

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **June 17, 2016**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on the Current Environmental Notice under Quick Links on the right.)

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:

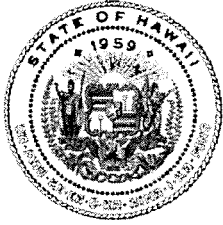
Marina Mucasa

Date:

JUNE 2, 2016

cc: Central Files

DLNR (OLD ROW)



OFFICE OF ENVIRONMENTAL QUALITY CONTROL

DEPARTMENT OF HEALTH | 235 South Beretania Street, Suite 702, Honolulu, HI 96813 | oeqchawaii@doh.hawaii.gov

DAVID Y. IGE
GOVERNOR

SCOTT GLENN
DIRECTOR

(808) 586-4185

June 22, 2016

Christine Yamasaki
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai'i 96813

Dear Christine Yamasaki,

SUBJECT: Draft Environmental Assessment (EA) for Hanapepe River Bridge Replacement,
Kaunualii Highway, State Route 50, Island of Kauai

The Office of Environmental Quality Control (OEQC) has reviewed the draft EA prepared for the subject project and offers the following comments for your consideration:

1. The OEQC encourages incorporating low-impact development concepts, including directing stormwater drainage into grass swales as considered in section 2.3. Employ these in areas where stormwater could displace sediment or cause instability.
2. For revegetation proposed in section 3.2.2, the OEQC recommends planting native vegetation to ensure compliance with Act 233, Session Laws of Hawaii.
3. The description of impacts with respect to "Waters of the U.S." is not clear. Please clarify specifically what "0.77 acres of water" means, as identified in section 3.3.5 under long-term impacts. Does this refer to wetlands? Also, what is the nature of the permanent impact?
4. In general, the OEQC recommends considering climate change for this and all future projects. Changing weather patterns in the Pacific are projected to result in localized increased precipitation severity, such as periodic extreme heavy downpours. Please consider the fact that accelerating climate change may result in 100-year flood levels and frequencies higher than those identified in the assessment. More information can be found at <https://www3.epa.gov/climatechange/impacts/islands.html>.

Thank you for the opportunity to comment on the draft EA. We look forward to a response that will also be included in the final EA. If you have any questions, please contact our office at (808) 586-4185.

Sincerely,

Scott Glenn, Director

cc: Kathleen Chu, CH2M HILL



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: SCOTT GLENN
DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET, SUITE 702
HONOLULU, HI 96813

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Glenn:

Thank you for your letter on the Draft EA dated June 22, 2016. In response to your comments, we offer the following responses:

1. Storm water control measures are being designed into the project to avoid and minimize adverse impact. These measures may be found in Section 3.3 Hydrology and Water Quality of the Final EA, and will be addressed further during permitting under Sections 401, 402, and 404 of the Clean Water Act.
2. Revegetation is expected to be minimal, affecting stream banks, limited strips of land along the highway, and properties used for construction staging and access. These areas will be restored to preconstruction condition. Native vegetation will be used, as appropriate.
3. "Waters of the U.S." is a term that refers to bodies of water under the regulatory jurisdiction of the federal government. The project area is located in a section of Hanapepe River which does not have wetlands, so no wetland will be affected.

Impacts to Waters of the U.S. are discussed in the EA because they may trigger the need for permits. By stating that the project will permanently impact a certain area, we're referring to the footprint of permanent improvements within Hanapepe River, including bridge piers, abutments, and the placement of riprap. Permanent impacts mean that improvements are expected to endure over a design life spanning many decades. In contrast, temporary impacts (such as the bypass bridge) will affect Waters of the U.S. only during the construction period. The discussion of impacts to waters of the U.S. has been clarified in Section 3.3 of the Final EA.

4. A discussion of climate change effects on sea-level rise has been added to Section 3.4 Natural Hazards of the Final EA.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:

Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL



OFFICE OF PLANNING STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

Ref. No. P-15205

June 20, 2016

Mr. J. Michael Will, P.E.
Project Manager
Central Federal Lands Highways Division
Federal Highways Administration
12300 West Dakota Avenue, Suite 380A
Lakewood, Colorado 80228-2583

Dear Mr. Will:

Subject: Draft Environmental Assessment for Hanapepe River Bridge Replacement, Kaunualii Highway, State Route 50, Island of Kauai, Hawaii, Project No. HI STP SR50(1);

Tax Map Key: (4) 1-9-007: 001 (por.); Hanapepe River, 013 (por.), 034 (por.); (4) 1-9-010: 014 (por.), 015 (por.), 046 (por.), 050 (por.); and the Kaunualii Highway and Iona Road Rights-of-Way

Thank you for the opportunity to provide comments on the Draft Environmental Assessment (Draft EA) for the Hanapepe River Bridge replacement project. The review material was transmitted to our office via memorandum dated May 20, 2016.

It is our understanding that the Federal Highways Administration, Central Federal Lands Highway Division, in partnership with the Hawaii Department of Transportation, proposes the replacement of Hanapepe River Bridge. This project seeks to replace the existing three-span structure that crosses Hanapepe River with a slightly longer and wider three-span bridge. The new Hanapepe River Bridge would consist of two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks.

Alternatives considered in the Draft EA include: a no action alternative that would retain the existing bridge with no changes; bridge construction on a new alignment; phased construction with a one-lane temporary bypass; phased construction with the use of Hanapepe Road Bridge which is further upstream; use of the Hanapepe Road Bridge and the construction of an adjacent temporary one-way bridge; and a two-lane temporary bypass on the makai side of the existing Hanapepe River Bridge. These alternatives were considered and dismissed in the analysis of the Draft EA.

Mr. J. Michael Will, P.E.
Project Manager
June 20, 2016
Page 2

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

- 1) The Draft EA addresses a number of our comments made in a previous pre-consultation letter dated May 1, 2015 (Reference Number P-14732). The Draft EA:
 - a) Verifies the tax map key parcels involved in this project;
 - b) Examines the goals and objectives of the Hawaii Coastal Zone Management program as listed in Hawaii Revised Statutes (HRS) § 205A-2;
 - c) Confirms that this project is outside of the Special Management Area;
 - d) Lists best management practices to be used during the construction phase to limit coastal erosion/sediment loss issues such as sediment traps, silt fences, dust fences, inlet protection, and stabilized construction entrances;
 - e) Considers stormwater runoff management practices; and
 - f) Demonstrates the project's consistency with the State Transportation Functional Plan, Objective I.A, policies I.A.1 and I.A.2.

- 2) Section 4.2.1, page 4-7 of the Draft EA addresses the project's consistency with the objectives and policies of the Hawaii State Plan as listed in HRS Chapter 226. As stated in the Draft EA, the objectives and policies applicable to this project include:
 - HRS § 226-14 – facility systems in general; and
 - HRS § 226-17 – facility systems – transportation.

The Final Environmental Assessment (Final EA) should include an analysis that addresses the Hawaii State Plan in its entirety. The analysis should indicate whether the proposed project conforms to or is in conflict with the goals, objectives, policies, and priority guidelines listed in the Hawaii State Plan. The most efficient method is summarizing these in tabular form, followed by discussion passages. If any of these are not applicable, the Final EA should state that these are “not applicable.”

- 3) OP acknowledges the need for a Federal Consistency Determination for this project, as identified in Section 4.2.4, page 4-9. This project must be consistent with the enforceable policies of the Hawaii Coastal Zone Management program. OP is the state agency which performs Federal Consistency evaluations. Please contact our office on the process to initiate this review.

Mr. J. Michael Will, P.E.
Project Manager
June 20, 2016
Page 3

We have no further comments at this time. If you have any questions regarding this comment letter, please contact Joshua Hekeka of our office at (808) 587-2845.

Sincerely,

A handwritten signature in black ink, appearing to read 'LR Asuncion', with a stylized flourish at the end.

Leo R. Asuncion
Director

c: Kathleen Chu, CH2M HILL



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: LEO R. ASUNCION, DIRECTOR
OFFICE OF PLANNING
P.O. BOX 2359
HONOLULU, HI 96804

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Asuncion:

Thank you for sending comments on the Draft EA by letter dated June 20, 2016.

A table addressing the project's conformance with applicable policies and objectives of the Hawaii State Plan is attached, and is also included in Section 4.2.1 of the Final EA.

As the project moves forward, we will coordinate with your office on consistency with the objectives and policies of the Hawaii Coastal Zone Management Act, as promulgated in Hawaii Revised Statutes §205A-2.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

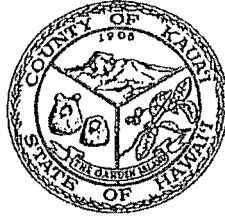
Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

Objective	Compliance with Specific Objectives and Policies
Population	This theme is not applicable to the project.
Economy--in general	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.</p> <p>As described in Section 3, the proposed project is anticipated to provide economic benefits by supporting a number of construction workers for the duration of the project.</p>
Economy--agriculture	This theme is not applicable to the project.
Economy—visitor industry	This theme is not applicable to the project.
Economy—federal expenditures	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(b)(3) Promote the development of federally supported activities in Hawaii that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment.</p> <p>(b)(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii.</p> <p>This project involves the use of federal funds as needed to improve Hanapepe River Bridge such that it remains a safe and functional component of the regional transportation system for highway users. It is being implemented through a partnership between HDOT and FHWA-CFLHD.</p>
Economy--potential growth and innovative activities	This theme is not applicable to the project.
Economy--information industry	This theme is not applicable to the project.
Physical environment--land-based, shoreline, and marine resources	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(b)(3) Take into account the physical attributes of areas when planning and designing activities and facilities.</p> <p>(b)(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.</p> <p>The project would provide a replacement bridge that substantially coincides with the footprint of the existing bridge, and is not expected to have a significant adverse effect on important natural resources. Biological surveys of the project area found no threatened or endangered plant or animal species; BMPs would be implemented to avoid and minimize contact with special-status species that could potentially occur in the project area.</p>
Physical environment--scenic, natural beauty, and historic resources	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) Promote the preservation and restoration of significant natural and historic resources.</p> <p>(a)(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.</p>

	<p>(a)(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.</p> <p>Although the proposed project would result in visual changes to the site as a result of replacing the existing bridge, the visual changes are considered minimal and would not affect the quality of views toward the bridge. The project would not result in a substantial change to the existing landscape or in a noticeable change to the project viewshed.</p> <p>The existing bridge and levee are eligible for listing in the National and Hawaii Registers of Historic Places. The project would adversely affect the bridge, but mitigation as agreed upon with SHPD would be implemented to minimize the potential impacts.</p>
<p>Physical environment--land, air, and water quality</p>	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.</p> <p>(b)(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.</p> <p>(b)(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.</p> <p>The project would result in short-term, construction-related impacts (noise, dust, and erosion), but implementation of BMPs would minimize the effects to the environment. BMPs will be specified through the permitting under Sections 401 and 402 of the Clean Water Act, and through consultation under Section 7 of the Endangered Species Act and the Magnuson-Stevens Act.</p>
<p>Facility systems--in general</p>	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.</p> <p>(b)(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.</p> <p>HDOT's mission to provide a safe, efficient, and accessible transportation system for the public. HDOT recognizes the need for replacement of the existing Hanapepe River Bridge. The replacement bridge will be designed using current AASHTO guidelines that have been adopted by HDOT for planning and engineering for highway projects in Hawaii.</p>
<p>Facility systems--solid and liquid wastes</p>	<p>This theme is not applicable to the project.</p>
<p>Facility systems--water</p>	<p>This theme is not applicable to the project.</p>
<p>Facility systems--transportation</p>	<p>The project would be in compliance with this theme, particularly the following objectives and policies:</p> <p>(a)(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.</p> <p>(a)(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.</p>

	<p>(b)(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives.</p> <p>(b)(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.</p> <p>(b)(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.</p> <p>(b)(10) Encourage the design and the development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment.</p> <p>The project is a partnership between HDOT and FHWA-CFLHD, and would improve Hanapepe River Bridge and its approaches such that it remains a safe and functional component of the regional transportation system for highway users. The replacement bridge will be designed using current AASHTO guidelines that have been adopted by HDOT for planning and engineering for highway projects in Hawaii.</p>
Facility systems--energy	This theme is not applicable to the project.
Facility systems--telecommunications	This theme is not applicable to the project.
Socio-cultural advancement (housing, health, education, social services, leisure, individual rights and personal well-being, culture, public safety, and government)	These themes are not applicable to the project.

Bernard P. Carvalho, Jr.
Mayor



Lyle Tabata
Acting County Engineer

Nadine K. Nakamura
Managing Director

DEPARTMENT OF PUBLIC WORKS
County of Kaua'i, State of Hawai'i
4444 Rice Street, Suite 275, Lihu'e, Hawai'i 96766
TEL (808) 241-4992 FAX (808) 241-6604

June 21, 2016

Mr. J. Michael Will, P.E.
Central Federal Lands Highway Division
Federal Highway Administration
12300 West Dakota Avenue, Suite 380A
Lakewood, CO 80228-2583

Subject: Draft Environmental Assessment
Hanapēpē River Bridge Replacement, Project No. HI STP SR50(1)
Kaumuali'i Highway (State Route 50)
Waimea District, Kaua'i Island, Hawai'i

PW 05.16.139

Dear Mr. Will:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the subject project. We have the following comments on the project:

1. The Hanapēpē River Bridge lies within Zone AEF of Flood Insurance Rate Map (FIRM) Panel 287F. Zone AEF is the floodway area of Zone AE. As noted in Section 3.4.4 of the DEA, "The proposed bridge would meet or exceed the capacity of the existing bridge to convey stormwater flows and would meet the FEMA requirement of no rise in the 100-year water surface elevation within a floodway, documented by a No-Rise Certification."
2. As stated in Section 3.15.2, a Traffic Management Plan (TMP) shall be developed by the contractor in consultation with the Kaua'i County Department of Public Works (DPW). DPW appreciates the opportunity to review and comment on the TMP prior to construction since the work will impact nearby County of Kaua'i roads and facilities.

Thank you for the opportunity to review and comment on the DEA. We wish to remain on your mailing list to continue participating in the environmental review process. If you have any questions or need additional information, please contact Stanford Iwamoto of my staff at (808) 241-4896 or siwamoto@kauai.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Moule', written in a cursive style.

MICHAEL MOULE, P.E.
Chief, Engineering Division

SI/MM

Copy to: Kathleen Chu; CH2M Hill, Inc.; 1132 Bishop Street; Suite 1100; Honolulu, HI 96813
Design and Permitting



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: MICHAEL MOULE
CHIEF, ENGINEERING DIVISION
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET, SUITE 275
LIHUE, HI 96766

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Moule:

Thank you for your letter on the Draft EA dated June 21, 2016.

We wish to reiterate our commitment to compliance with FEMA regulations regarding replacement of Hanapepe River Bridge in the Zone AE special flood hazard area and to developing a traffic management plan that will anticipate and minimize construction-related traffic impacts. We will continue to work with you and your staff on both issues.

We appreciate your participation in the environmental review process. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL



Water has no substitute.....Conserve it

June 17, 2016

Mr. J. Michael Will
U. S. Dept. of Transportation, Highways
12300 West Dakota Avenue, Suite 380A
Lakewood, CO 80228-2583

Dear Mr. Will:

Subject: Draft Environmental Assessment: Hanapepe River Bridge Replacement,
Project No. HI STP SR50(1), Kaunualii Highway, Hanapepe, Kauai

This is in regard to your letter dated May 20, 2016. We have no objections to the proposed Draft Environmental Assessment. The following are our comments to the subject Draft Environmental Assessment for Hanapepe River Bridge Replacement.

The applicant is made aware that:

1. The Department of Water (DOW) owns and operates water system facilities, including but not limited to transmission waterlines along the proposed project sites.
2. The proposed project may affect the DOW's water system facilities. It is recommended that the applicant submit the construction drawings to the DOW for review and approval.
3. Request for water service will be dependent on the adequacy of the source, storage, and transmission facilities existing at that time.

If you have any questions concerning the construction drawings, please contact Mr. Bryan Wienand at (808) 245-5459. For other questions, please contact Ms. Regina Flores at (808) 245-5418.

Sincerely,

A handwritten signature in black ink that reads "Edward Doi".

Edward Doi
Chief of Water Resources and Planning Division

RF:mlm
DraftEA, Hanapepe Bridge Replacement, Will



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: EDWARD DOI
CHIEF OF WATER RESOURCES AND PLANNING DIVISION
COUNTY OF KAUAI
DEPARTMENT OF WATER
4398 PUA LOKE STREET
LIHUE, HI 96766

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Doi:

Thank you for your letter on the Draft EA dated June 17, 2016.

We note that you have no objections to the Draft EA. We acknowledge that the Department of Water owns and operates water system facilities in the project area (also described in Section 3.17 of the EA), and that construction drawings will be submitted to your office for review and approval.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL



May 23, 2016

Mr. J. Michael Will, P.E.
Program Manager
US Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, suite 380A
Lakewood, CO 80228-2583
Via email: Michael.Will@dot.gov

Subject: Draft Environmental Assessment, Hanapepe River Bridge Replacement, Project No. HI STP SR50(1), Kaunualii Highway, Waimea District, Kauai

Dear Mr. Will:

Thank you for the opportunity to comment on the Draft Environmental Assessment for the Hanapepe River Bridge Replacement.

Please correct the incorrect spelling of "Hawaiian Telecom" to the correct spelling of "Hawaiian Telcom." We appreciate the opportunity to comment. Call me at 808-241-5052 or email jimmy.sone@hawaiiantel.com should you have any questions.

Sincerely,

James "Jimmy" Sone P.E.
Lead Network Engineer
OSP Engineering

c: Kathleen Chu (via email Kathleen.Chu@ch2m.com)



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: JIMMY SONE, P.E.
LEAD NETWORK ENGINEER
HAWAIIAN TELCOM
4040 HALAU STREET
LIHUE, HI 96766

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Sone:

Thank you for sending comments on the Draft EA by letter dated May 23, 2016.

We appreciate the error pointed out in the document and have corrected the spelling of Hawaiian Telecom.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

HISTORIC HAWAII FOUNDATION

June 21, 2016

Mr. J. Michael Will, P.E.
Project Manager
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 380A
Lakewood, CO 80228

**Re: Draft Environmental Assessment
Hanapēpē Bridge Replacement Project (Project No. HI STP SR50(1))
Kaumuali'i Highway (State Route 50),
Waimea District, Island of Kaua'i, Hanapēpē Ahupua'a**

**TMK: (4)1-9-007:001(por.) Hanapēpē River, 013(por.), and 034(por.); (4)1-9-010:14
(por.), 015(por.), 046(por.), and 050 (por.); and Kaumuali'i Highway and Iona Road
Rights-of-way**

FHWA Reference: HFPM-16

Dear Mr. Will:

Historic Hawai'i Foundation (HHF) is providing comments on the Draft Environmental Assessment (DEA) for the above-listed project. **Historic Hawai'i Foundation strongly disagrees with the proposed Finding of No Significant Impact (FONSI).**

The DEA was prepared by Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD) in accordance with the National Environmental Policy Act (NEPA), its implementing regulations (CFR Title 11, Chapter 200) and the State of Hawai'i Environmental Impact Statement law (Hawai'i Revised Statutes Chapter 343). We note that the project is also subject to various historic preservation laws and regulations, including the National Historic Preservation Act (NHPA) and its implementing regulations (CFR 36 Part 800), as well as the State of Hawai'i historic preservation law (HRS 6E). Furthermore, the project is subject to Section 4(f) of the National Transportation Act.

Although the Advisory Council on Historic Preservation (ACHP) and the Council on Environmental Quality (CEQ) have issued a handbook for integrating NEPA and Section 106 (March 2013), the proposed undertaking has not integrated its compliance actions, determinations and project decisions to address the requirements of each law concurrently.

Historic Hawai'i Foundation Comments
Hanapēpē Bridge (Project No. HI STP SR50(1))
Draft Environmental Assessment
June 21, 2016
Page 1 of 4

When the agency is preparing an EA and there are adverse effects to historic properties, as in this case, then the agency must develop a Memorandum of Agreement to conclude the Section 106 process before making the decision whether to proceed with the proposed action. A FONSI should make it clear that adverse effects have been resolved and the MOA comment process was concluded. Use of a mitigated FONSI does not replace the requirements and procedures implementing Section 106.

The resolution of adverse effects to historic properties through the Section 106 process is a factor to consider whether, for NEPA purposes, there are any potentially significant effects that require the preparation of an EIS. Although an “adverse effect” to a historic property does not necessarily mean an agency will be unable to reach a determination of Finding of No Significant Impact (FONSI) under the EIS regulations, the agency does need to determine whether an undertaking is a “major Federal action significantly affecting the quality of the human environment,” which includes the likely effects on historic properties.

Therefore, the agency still needs to determine whether the environmental effects of the action on historic properties are “significant.”

Historic Hawai‘i Foundation finds that demolition of Hanapēpē Bridge would have a significant effect on the quality of the human environment.

DEA Fails to Incorporate Results of Section 106 Consultation and Agreement

The NHPA Section 106 process is not complete. The proposed demolition the Hanapēpē Bridge, which has been determined eligible for listing on the National Register of Historic Places, is, by definition, an adverse effect. The Section 106 process is designed to resolve adverse effects, including efforts to avoid, minimize and/or mitigate the effects.

In a letter to the State Historic Preservation Office dated May 11, 2016, FHWA initiated Section 106 consultation and included a determination of adverse effect. There is no record of notification to the Advisory Council on Historic Preservation, no consultation with Historic Hawai‘i Foundation or other consulting parties, and no resolution of effects through measures to avoid, minimize and mitigate effects. There is no Memorandum of Agreement concluding the Section 106 process.

The DEA neglects to note that Hanapepe Bridge was determined by Hawai‘i Department of Transportation (HDOT) to be of High Preservation Value as an excellent example of later developments in concrete bridge construction on Kauai and represents the “work of a master”: William R. Bartels. Hanapepe Bridge is one of only three remaining high preservation value bridges with Greek cross railings on Kaua‘i.

DEA Fails to Include Binding Commitments to Resolve Adverse Effects

Despite the proposed demolition of the historic Hanapēpē Bridge, the DEA claims that “impacts can be mitigated to less than significant levels” (page 5-3).

However, the only proposed mitigation measure relates to the proposed railing type on the replacement bridge. This is not mitigation for the loss of a significant historic property, but is merely a component of the new design. The proposed railing type has not been accepted by the Kaua'i Historic Preservation Review Commission, Historic Hawai'i Foundation or the State Historic Preservation Division. In addition, no actual mitigation measures are described; nor are the Section 106 or HRS 6E processes complete. Therefore, the mitigation measures are only theoretical and not actual "agreed upon mitigation commitments," as required.

The CEQ/ACHP guidance makes it clear that if an agency finds there would be adverse effects from the proposed undertaking, it must document the resolution of those effects, incorporating a description of the agency's binding commitments to measure to avoid, minimize, or mitigate such effects, with specific information regarding who will do what by when. The Record of Decision (ROD) should also include administrative provisions as a process for any continued consultation during implementation, timelines for implementation, procedures for post-review discoveries, a dispute resolution clause, and a provision addressing future changes to the undertaking.

As the draft Environmental Assessment contains none of this information, does not resolve adverse effects, does not contain binding commitments to avoid, minimize and mitigate the adverse effect, and does not address the requirements of the National Historic Preservation Act, it is incomplete and insufficient to meet the regulatory requirements.

Therefore, Historic Hawai'i Foundation strongly disagrees with the proposed FONSI.

DEA Fails to Address Prior Comments

Historic Hawai'i Foundation is a consulting party to the FHWA and is actively participating in the Section 106 consultation process. Prior actions have included:

- FHWA sent HHF the letter initiating consultation dated August 26, 2015
- HHF responded with consultation comments on December 9, 2015, concurring with the finding of Adverse Effect and discussing avoidance and mitigation options.
- The project was discussed at a Section 106 consultation meeting on February 9, 2016 between Federal Highway Administration (FHWA) Central Federal Lands (CFL), the Hawai'i State Historic Preservation Division (SHPD) and HHF.
- On May 12, 2016 HHF received a "Replication of Hanapēpē Bridge Analysis" essentially finding that replication could address the structural deficiencies but would not address the functional standards or project requirements.
- The DEA was published on May 23, 2016 with an attached letter to the Hawai'i State Historic Preservation Officer (SHPD) dated May 11, 2016 initiating consultation. The letter finds the Hanapēpē Bridge to be eligible for inclusion on the National Register of Historic Places and makes a Determination of Adverse Effect.

Prudent and Feasible Alternatives to the Use of a Historic Property

The DEA Section 1.6 “Compliance Required,” notes that this project is also subject to the regulations of the US Department of Transportation Act (1966), Section 4f, and thus the consideration of feasible and prudent alternatives to the undertaking are required.

FHWA proposed a finding of ‘de minimis’ impact because there is no adverse effect to the levee (SIHP #50-30-09-2283). However, this finding is inappropriate because there is an adverse effect on the bridge (SIHP #50-30-09-2280).

The DEA cites the guidance of the “Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges” to justify the ‘de minimis’ finding. Yet, the guidance document specifically states that only the following alternatives avoid any use of the historic bridge:

1. Do nothing
2. Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the NHPA.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the NHPA.

None of those alternatives are proposed for the Hanapēpē Bridge. Therefore, the *de minimis* finding is not warranted.

Historic Hawai‘i Foundation strongly recommends that FHWA conclude the Section 106 process to resolve adverse effects and then to incorporate those commitments into its environmental compliance documents. Until and unless such resolution occurs, the Finding of No Significant Impact is premature and unwarranted.

Very truly yours,



Kiersten Faulkner, AICP
Executive Director

Copies via email:

FHWA: Meesa Otani and Nicole Winterton
ACHP: MaryAnn Naber
HDOT: Larry Dill
SHPD: Jessica Puff, Susan Lebo and Mary Jane Naone
CH2M Hill: Paul Luersen and Kathleen Chu
MAI: Barbara Shideler



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

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Lakewood, CO 80228
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Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: KIERSTEN FAULKNER
EXECUTIVE DIRECTOR
HISTORIC HAWAII FOUNDATION
680 IWILEI ROAD, SUITE 690
HONOLULU, HI 96817

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Ms. Faulkner:

Thank you for sending comments on the Draft EA by letter dated June 21, 2016. We offer the following responses to your comments:

1. DEA fails to incorporate results of Section 106 consultation and agreement

The preface of the Draft EA noted that the document under review was prepared pursuant to Hawaii Revised Statutes (HRS) Chapter 343 and Title 11, Chapter 200, Hawaii Administrative Rules. The preface also stated that separate environmental documentation is being prepared to comply with the National Historic Preservation Act (NEPA). As a federal process, Section 106 is not a requirement of HRS 343. The HEPA EA acknowledges Federal compliance actions and records agency coordination; however, the focus is to document compliance with HRS 6E

2. DEA fails to include binding commitments to resolve adverse effects

Mitigation measures contained in the EA are consistent with the requirements of HRS 343. As part of the Section 106 consultation process, we have prepared a Memorandum of Agreement (MOA) that includes binding stipulations to minimize harm. The MOA, developed with input from consulting parties, will be incorporated into the NEPA document.

3. DEA fails to address prior comments

As noted in your letter, we provided the *Replication of Hanapepe Bridge Analysis* on May 12, 2016. Comments on the study were received from the Historic Hawaii Foundation by letter dated

July 15. Our responses were sent to you by letter dated July 22. We recognize that consultation on historic preservation issues will continue until the MOA is finalized.

4. Prudent and feasible alternative to the use of a historic property

This part of your letter pertains to Section 4(f) of the Department of Transportation Act and, like Section 106, is a requirement outside HRS 343. Nevertheless, we wish to clarify the two parts of our Section 4(f) determinations. The bridge was evaluated under the Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges. The programmatic Section 4(f) evaluation enables the use of a bridge, such as Hanapepe River Bridge, that is eligible for inclusion on the NRHP when necessary to modernize the transportation system for public safety. This project meets all criteria for applicability of the programmatic 4(f) evaluation. Alternatives considered and dismissed during the planning phase are discussed in Section 2.4 for the no action alternative and in Section 2.5 for the alternatives to rehabilitate, replicate, replace with a more streamlined two-span design, and construct on a new alignment (and not impact the existing bridge). The levee was evaluated separately. We are in agreement with SHPD's determination that removing a portion of the levee is an adverse effect under Section 106. However, the portion of the levee affected by proposed transportation improvements is on land historically used for transportation purpose and located within the existing highway right-of-way. No additional right-of-way is required. Therefore, since the portion of the historic levee impacted is currently located within an existing highway right-of-way, no new "use" as defined in 23 CFR 774 is anticipated, and FHWA has determined that there is no Section 4(f) use of the levee property for this project.

We appreciate your participation in the environmental review process. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

Sakata Family Corporation
14653 South 8th Street
Phoenix, Arizona 85048
June 3, 2016

Central Federal Lands Highway Division
Federal Highway Administration
12300 West Dakota Avenue, Suite 380A
Lakewood, Colorado 80228-2583

Attn: Mike Will

Thank you for forwarding the link to the Draft Environmental Assessment for the Hanapepe river bridge. I have reviewed them in detail. I also studied the chronology of actions taken by the various organizations relative to Hawaii Historic Bridge Inventory and Evaluation. I reviewed the minutes of the KHPRC meeting on Oct. 1, 2015 plus the testimonies of Mr/Mrs Frank and Ms Rhonda Makaanani Libre in order to assess any significant inconsistencies which have been bothering me.

In particular, the design of the replacement bridge should be reconsidered for the following reasons:

- 1) The proposed design was based on the premise of adhering to the basic design of the original bridge in regards to aesthetics and its historical character. The bridge designer was William Bartels, Chief Bridge Design Engineer. It was one of the first concrete T-beam which had flowing arches for the two pier configuration. The railings were unique (open Greek cross); there were electric light domes facing the roadway...
 - a. Statewide Bridge Inventory Title 2013-10-22....
 - o Chapter 3- Inventory of bridges on Kauai
 - 1- "The Hanapepe Highway Bridge retains its historic feeling due to its relatively narrow width for a highway bridge and the decorative concrete rail design typical of 1930 Federal Aid bridges."
 - 2- Historic Association: Eligibility Status: High Preservation Value
 - b. Additions to bridge: 12 inch water line suspended to the south side and 12 inch sewer line plus other utilities on the north side. Covering was also installed on the north side.
 - c. The effect on aesthetics can be seen on the current picture of the underside of the bridge. The covering essentially makes the bridge look like a straight beam configuration because it hides most of the curved arches of the girders. In the proposed shallow arch design, the substructure will be obscured as well. (This is predicated upon how the sewer and utilities plus cover will be re-installed.)
 - d. The concrete railings will be replaced with a similar design which has crash testing. I remember reading that the design was used for the rebuild of the Lihue Mill Bridge.



- e. The bridge will be wider to meet design requirements with 8 foot shoulders on each side of the road way. The 12 foot wide travel lanes and 5 foot sidewalks shall be maintained. The structural design shall use shallow girders and cast-in-place deck slab. The existing bridge is ...‘functionally obsolete and has a substandard load carrying capacity.’ The new bridge will be built to meet current HDOT design standards for load carrying capacity and seismic standards.
- f. Bridge supports will be on deep foundations, bearing on the river bed beneath the soft soil and other deposits. The timber piles shall be replaced with large diameter concrete piles. The piers are more traditional designed with concrete piles and shallow arch girders.
- g. The length of the bridge will be increased from 275 to 308 feet by setting back the abutments from the main channel to provide greater flow capacity.

The proposed bridge ...’will not meet the HDOT manual criteria of two feet of freeboard (clearance above the 100 year flood water level)’. A design exception will be required.

- ✓ The Hanapepe town and valley have had severe flooding in the past because of the low elevation and relatively flat terrain. When the town was first established in the late 1800’s, the Chinese farmers started to raise rice as far down as the marsh lands located below the existing highway and Hanapepe Public Library.
- ✓ The county is also preparing a review of the other Hanapepe Bridge built in 1911. Based on the historical high water levels in 1963 and 2014, the two feet of freeboard is also questionable.
- ✓ The height of the levee was increased to nearly the same level as the bridge railing. However, the Seto Market building appears to be built at a lower elevation as the levee on the east side. Before the flood waters could spill over the bridge, the water flow would divert to the north along Awawa road and proceed up the valley (between the cliffs and the levee).
- ✓ **I believe that the choke point for the river flow to the bay is the old bridge.**

- ✓ **I also believe that if the old bridge was demolished or redesigned with no piers, it would redirect the choke point to the Hanapepe River Bridge on Route 50.**
- ✓ **The design of the proposed bridge needs to consider its flow capacity to mitigate the flooding at both the Iona road (east side) and Puolo road (Westside) of river.**
- ✓ Final Environmental Assessment: Hanapepe Public Library Expansion A. 2007 The report included a section as to its location in a flood plain and the historical tsunami effects on Hanapepe Bay.

Hazards: Flooding, Tsunami, and Hurricane

The area in the vicinity of the library is one of the areas studied in the Federal Emergency Management Agency (FEMA), Flood Insurance Study, County of Kauai, Hawaii, September 16, 2005. The parcel is identified on the Federal Emergency Management Flood Insurance Rate Map, Panel 150002-287E, and shows the subject parcel located in Zone AE. Zone AE means areas in the “Special Flood Hazard Areas Inundated by 100-Year Flood.” The base flood elevation for this location is determined to be ten feet mean sea level.⁸

According to the *Atlas of Natural Hazards in the Hawaiian Coastal Zone*, Hanapēpē has experienced the effects of three tsunamis: in 1946 (8 feet), 1952 (10 feet), and 1960 (14 feet). Hanapēpē, along with most other areas of Kauai, are vulnerable to damage from high winds and hurricanes.

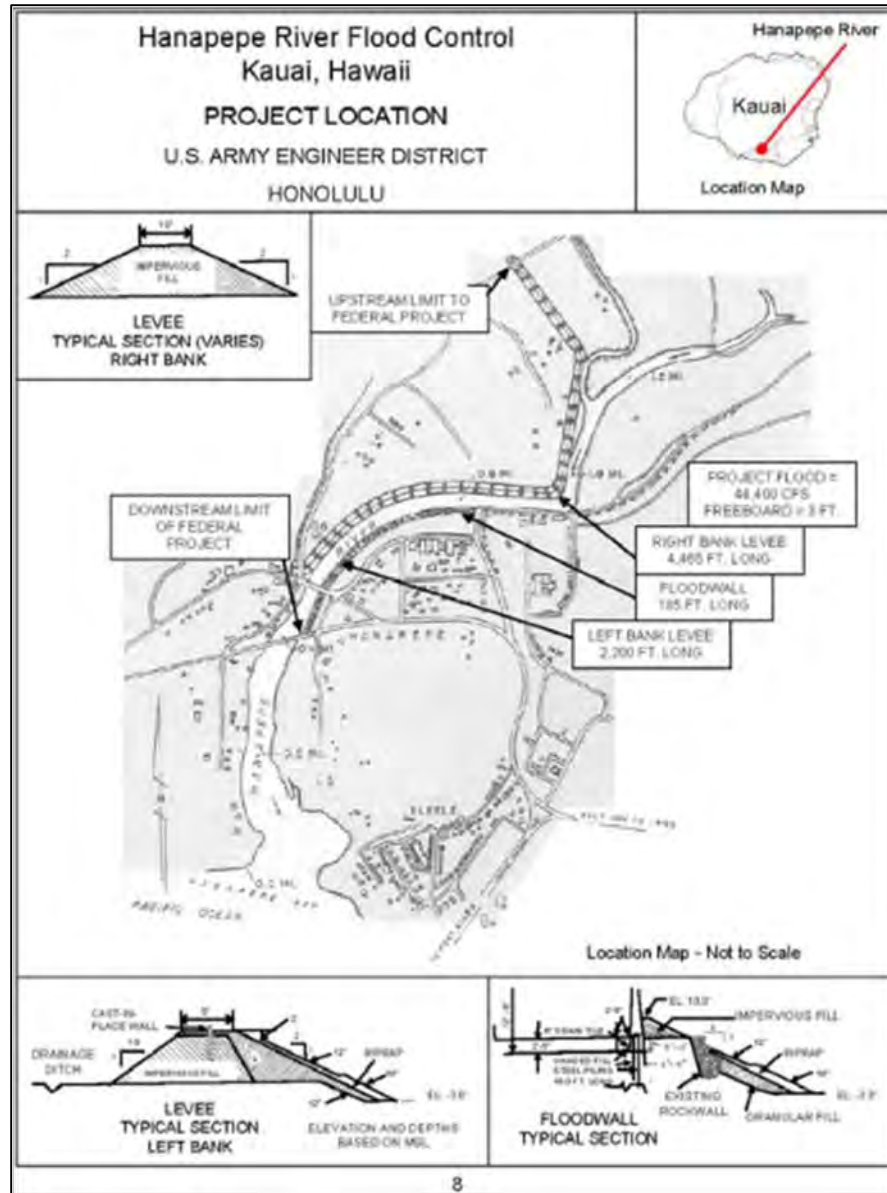
The Flood Control Project by the Army Corp of Engineer was initiated due to the numerous flooding and damage in the Hanapepe Town. Project started in 1959. This documents the additional modifications and maintenance required after the floods in 1963, 2008, 2010, 2012, and 2014.

d. Project Location. The Hanapepe River FRM repair project is located in Hanapepe on the island of Kauai. Hanapepe River and its tributaries drain an area of 27 square miles of the south central side on the Island of Kauai (See Figure 1). The river flows adjacent to Hanapepe Town into Hanapepe Bay.

e. Study/Project Description. The project consists of a floodwall atop a levee 2,200 feet long and an I-Wall 185 feet long on the left bank commencing at the new Kauai Belt Highway Bridge located about 0.4 mile above the river mouth and extending to the cliffs at the northeast corner of the town of Hanapepe; and riprap-lined earth fill levee 4,465 feet long on the right bank commencing at the old highway bridge about one-half mile above the river mouth and extending upstream to high ground.

POH completed improvements to the left and right banks in 1959 and 1963, respectively, and completed additional improvements to raise the height of the levees and constructed the floodwalls in 1966. The County of Kauai operates and maintains the project. Approximately 859 homes and commercial buildings are currently protected by the project. To date, the project has prevented more than \$23.7 million in projected damages.

In 2008, heavy rains and flooding eroded a 1,100-foot reach of the right bank. A second storm in 2010 further damaged the right bank beyond that of the 2008 storm. In 2012, POH received funding under the PL 84-99 Rehabilitation and Inspection Program to repair the service road,



During my investigation of the Hanapepe River Bridge, I had to expand the scope of my involvement because the bridge was an integral part of the River Flooding Control and Management.

When the levee was build, the maximum flood level for the design height had to be estimated. Previous max levels included the overflow into the Hanapepe town and a portion of the water flow returned to the river downstream of the old bridge. I do not remember if the water flow

from Iona road was high enough to flow over our property into the river. In fact, we used to catch fish using a long scope net while standing on the large rock wall at the edge of the property. I was at college in Illinois when the 1963 flood occurred. During the following floods in the 2000's, I had heard that water was starting to flow over the property into the river and not visa versa.

The levee functions like a giant flume directing the river flow from a starting point above the swinging bridge through the old bridge. Its design configuration is important since it is the choke point. Higher water levels may breach the levee and flood the town.

Downstream of the old bridge, the flow is partially restricted by the new bridge and its hydraulic capacity and elevation of the surrounding properties along the river.

- Based on my website inquiries, I have included the more significant floods and hurricane after the levee was built.

- ✓ 1963 Hanapepe River Flood: at county bridge, looking westward.



- ✓ November 1982. *Damage from Hurricane Iwa* (same Seto Market building)



- *September 1992. Damage from Hurricane Iniki (same Seto Market building)*



- ✓ An inspection of the superstructure indicated a significant amount of visual cracks and the bridge load carrying capacity was suspect. The University of Hawaii Civil Engineering Department was contracted to perform the study. Their report was published in Feb. 2007 ‘Research Report UHM/CEE/07-02, Structural Health Monitoring System...’
- ✓ Recent floods have been nearly at or higher than the historical max level mark.
- ✓ During the **Feb. 4, 2008** flood, a shipping container was broken free from its mooring and floated down the river. It impacted with the county bridge as well as the state river bridge.
- ✓ Then, after the **Dec. 10, 2010** flood, the bridge sub-structure was examined and tested to determine the integrity of the piers and timber piles.
- ✓ After the **Mar 6, 2012** flood, the inspection found increased damage to the foundation and timber piles.
- ✓ With the rising river levels during the **Feb. 21, 2014** flood, the Kauai Police Department reported that the flood level was very near to the bottom of the county bridge and may be closed it for traffic. A county press release stated that the river level continued to rise and barriers were being added to the county bridge to protect the town from flooding as well. This is a link to a video showing the flood waters at the bridge. The link is no longer available. At was an html file on the e-edition of the StarAdvertiser.

http://www.staradvertiser.com/news/breaking/20140221_Kauai_under_flood_advisory_rains_may_spread_to_Oahu.html?id=246538311

- ✓ Google Maps: Street View **Oct 2011** shows the rebuilt Seto Market building and the extension wall atop the levees on the east side



- The location of the barriers added during the 2014 flood may have been initiated by a local emergency response team. **Need to contact the local fire department for more details.**
- I think the Seto Market was a designated Historical Sites and, it was rebuild to resemble the original structure. Its' location will hinder the options when evaluating what to do with the old bridge.

COMMENTS AND QUESTIONS

1. In the DEA Appendix A: Figure 5, a yellow line was added and labeled as the high tide level. What are the references as to the mean sea level, the 100 yr flood level, and the freeboard at 10-20 foot intervals along the length of the bridge for the existing bridge, the proposed alternative, and the uniform beam, two span design as shown on in the DEA Figure 2-7.
 - a. Is the high tide level included in the 100 yr flood level calculations? What about the rise in tide from a tsunami?
 - b. How does this relate to the 8 ft above the mean sea level at the Library? See insert on page 3 of this letter.
 - c. Is there a log of the Hanapepe flood levels and reported damage?
 - d. **Need to add** a vertical gauge on the abutment to show the water level above the mean, sea level?

- e. Is there a report on the river bed rock profile when the original piers were built?.
- f. What is the current profile of the silt level?

This was one of the references in the evaluation of historical bridges. This requires further investigation as to who was assigned, within the federal DOT, the responsibility. Also, how were the inputs communicated in the project review and approval process to aid the State and Country with their management of the Historical Bridges?



Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17, April 2, 1987). This bill, which addresses highway improvement, planning and research throughout the United States, also declares that States are required to identify historic bridges listed in the National Bridge Inventory. Furthermore, it requires the Transportation Research Board to review and develop rehabilitation standards for historic bridges, as well as setting forth minimum allocations for each state for the purposes of transportation planning and research.

DISCUSSION ON DESIGN ALTERNATIVE

One of the early alternatives presented for consideration during the public meeting on Sept. 17, 2015 was a wide flange, single pier, straight beam design. It was a more modern design but more economical to construct than the proposed design than the two pier, shallow curve beam proposal.

- ✓ In the DEA, it is noted that the feedback from the attendees were ‘desire to move forward with an alternative that more closely resembles the existing bridge: aesthetics and historical character....’ Therein, this alternative was deleted from consideration.
- ✓ However, three slides were presented during the KHPCR meeting on Oct. 10, 2015 as recorded in the meeting minutes – page 32.

The next few slides show you just some visualizations and some pictures. The first on Slide 8, this is a picture of the existing bridge. Then on Slide 9, this alternative shows a bridge that most closely resembles the existing bridge. It has an arch fascia that resembles the arch on the bridge now. Then Slide 10 shows the more traditional bridge structure that’s also being considered, and this is a straight girder. Okay.

We did have a public meeting on September 17th. About thirty-five (35) members from the public attended. The questions that they asked were primarily ensuring that the temporary bridge could maintain access for their loads because there is a lot of concern with access to the landfill, and also access to the Pacific Missile Range. They were in favor of a new structure that would address any load carrying concerns as well.

4. For the proposals for the Hanapepe River and Kapaa Stream bridges, both will be wider for traffic safety and stronger to meet HDOT weight bearing criterion. The pier and piles are sturdier, less susceptible to scorn wear. This would allow longer spans and fewer piers. It would also improve hydraulic capacity by increasing the face versus the technology used in during pre-WW2. The alternate Hanapepe design with single pier would be more economical to build. It could take less time to construct because the piers can be removed and moved independently versus sequential; plus there would be one less pier to construct.
5. A 190 ft, uniform wide flange girder is proposed for the Kapaa Stream Bridge. Therein, the mid span pier can be eliminated and improve the hydraulic capacity. Similarly, the new bridge design would be more economical with the potential for a shorter construction time.

Time is of the Essence: We need A Master Plan concerning the Hanapepe River for Flood Control and Transportation issues on the Belt Loop.

- We need to provide better information concerning the project and their potential impacts on other projects: it is no longer a standalone criterion.

Soliciting public input requires in-depth information and discussions as to the consequences of their comments.

- We need an open meeting format to discuss the need for evaluating how we proceed with both bridges and the potential impact on the integrity of the levee.
- We need to review the storm drainage system for the Hanapepe Town and other suspect areas as to its adequacy to route excess flow.
- We need to acknowledge that there are there are unforeseen scenarios; wherein, damage may occur no matter how diligent we try to avoid those events.

System Analyses of the Hanapepe River

Flood Control Project

- County Bridge Impact
- State Bridge Impact

Boundary

- Swinging Bridge
- Hanapepe Bay (mouth)

Water Sources

- ✓ Inlet flows
- ✓ Outlet flows
- ✓ Retention areas

Max Water Levels (ft. elevation)

- At Swinging Bridge
- To County Bridge
- To State Bridge
- At mouth of river
- At Post Office
- At Library



ADDITIONAL COMMENTS AND QUESTIONS:

1. Sampans used to travel up the river past both bridges and dock below where the concrete slab spanned the river.
2. The height of the levee was increased in 1966 due to high water levels during the April 1963 flood.
3. The increasing height of the flood waters could be caused by increased silt deposits carried from erosion of the upper valley and settling in the river. The river is shallow and may need dredging rather than continuing to increase the height of the levee.

ADDITIONAL COMMENTS AND QUESTIONS ON RFP

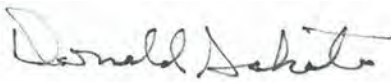
1. With the temporary bridge also on the same side, it would seem that the barges to be used for breaking up the deck, beams, pier, etc. would be located on the south side. Demolishing of the railing, deck, and beams could be started on the east side with the crane on a barge on the south remaining road on the west side.
2. The primary staging area is located on the mauka side of the bridge, and this imposes a significant traffic congestion of logistics and a construction dilemma if the reconstruction starts on the east end. If reconstruction starts on the west end, the supplies would have to

be stored ahead of time somewhere on a southwest location (assuming that the supplies are being shipped through Port Allen Pier.)

3. The project description relates to the same issues which I have. The contractor would be responsible for the planning and scheduling the activities to accomplish the project. Is the contractor also furnishing a Project Schedule with a critical path analyses?
4. I suggest additional preplanning prior to the RFP since access to the river, to place the barge, to load the heavy equipment and to lift the large pieces during dismantle and assembly are all issues which need clarification and resolution rather than negotiated after the fact.

I know I have expanded my comments beyond a review of the DEA. However, I believe that these are the issues that bothered me during our April meeting at the CH2M Hill office in Honolulu. I thank you for the opportunity to express my opinions and, hopefully, I have shown my reasons in this lengthy letter.

Mahalo



Donald Sakata

Cc: CH2M Hill
c/o Kathleen Chu
1132 Bishop Street, Suite 1100
Honolulu, Hi 96813

Western Motor Service
c/o Linda Kaiakapu

ps: I had to convert my Word document into a Power Point format because when I printed it, some of the inserts vanished. dss



U.S. Department
of Transportation

**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: DONALD SAKATA
SAKATA FAMILY CORPORATION
14653 SOUTH 8TH STREET
PHOENIX, AZ 85048

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Sakata:

Thank you for sending comments and questions on the Draft EA by letter dated June 3, 2016. We acknowledge your comments related to flooding, the historic character of the bridge, constructability, and potential impacts on traffic congestion during construction. These comments have been distributed to the planning and engineering teams for consideration. The wide range of issues you've raised speak to the complexity of the project. The proposed bridge has been designed to meet the project purpose and need, and to balance multiple objectives, including long-term mobility for the West side, flood water conveyance, and maintaining the bridge's contribution to the historic aesthetic of the Hanapepe community.

We understand that a particular concern is the hydraulic performance of the replacement bridge. As stated in Section 3.4 of the EA, the project will meeting the Federal Emergency Management Agency (FEMA) requirement of no rise in the 100-year water surface elevation within the floodway that will be documented by a No-Rise Certification. Additionally, we are coordinating with the U.S. Army Corps of Engineers to obtain approval under 33 U.S. Code 408 to alter a portion of the Hanapepe River Flood Control civil works project. This approval is required because the levee will need to be shortened by approximately 7 feet to widen the bridge. Our analysis has found that the proposed alteration will not affect the usefulness of the flood control project nor be injurious to the public. In order to provide continual flood protection during construction, the contractor will be required to install temporary flood protection measures while alterations to the levee and flood wall take place.

In response to your questions, we offer the following responses (in italic font).

- In the DEA Appendix A: Figure 5, a yellow line was added and labeled as the high tide level. What are the references as to the mean sea level, the 100-year flood level, and the freeboard at 10-20 foot intervals along the length of the bridge for the existing bridge, the proposed alternative, and the uniform beam, two-span design shown on the DEA, Figure 2-7?

The high tide line is one of the delineations to determine Waters of the U.S., which is the area under Federal jurisdiction for regulatory purpose. Figure 5 in Appendix A shows the high tide line which lies at the intersection between land and the water's surface at the maximum height reached by a rising tide. The high tide line is shown in the photo because it readily observed in the field by the line of debris and vegetation. Another way of delineating the area under Federal jurisdiction is the mean high water (MHW) tidal elevation. The MHW is being used for project permitting and is measured at an elevation of 1 foot above mean sea level.

- Is the high tide level included in the 100-year flood level calculations? What about the rise in tide from a tsunami?

The 100-year flood elevation is higher than either the high tide line or MHW, and this elevation is not hydraulically influenced by astronomical tidal elevations.

The Hanapepe River Bridge is not located within the Zone VE special flood hazard area—an area that usually includes beachfront properties. Therefore, the replacement structure is not required to be designed for a coastal flood event, including storm surge and tsunami- and hurricane-generated waves.

- How does this relate to the 8-foot above the mean sea level at the Library? See insert on page 3 of this letter.

The insert on page 3 of your letter (excerpted from the Hanapepe Public Library Expansion A, Final Environmental Assessment, 2007), states that the library is sited on a parcel located in Zone AE according to the Flood Insurance Rate Map. The base flood elevation for this location is determined to be 10 feet mean sea level.

As described in Section 2.2 of the EA, the bridge is at an elevation of 12.75 feet above mean sea level (amsl). The roadway approaches to the east and west of the bridge are 8.4 feet amsl and 9.3 feet amsl, respectively. Like the library, the Hanapepe River Bridge project is located in Zone AE with base flood elevation of 10 feet (Figure 3-3). While the bridge is higher than the base flood elevation, portions of the existing highway are lower and subject to flooding.

- Is there a log of the Hanapepe flood levels and reported damage?

Project planning and design have incorporated available information and accounts of historic flooding of Hanapepe River. There is no log per se.

- Need to add a vertical gauge on the abutment to show the water level above the mean sea level?

There is no plan currently to attach a vertical gauge to the abutment. This will be passed on as a recommendation to HDOT for consideration.

- Is there a report on the river bed rock profile when the original piers were built?

Such a report for the original piers is not known to exist.

- What is the current profile of the silt level?

There is no current silt level profile. The project information we can provide includes the Bridge Elevation section, shown in Figure 2-2 (lower panel) in the EA and data from the geotech boring in the channel bottom which recorded the bottom elevation as -4.5 feet. The table below provides a breakdown of silty material from the boring.

TABLE 2 (continued)

Summary of Subsurface Materials for Foundation Design Purposes

Subsurface Depth (ft)	Material Description	USCS Classification	Apparent Density	Ground Water Depth (ft)
BORING HP3 (ELEVATION -4.5±) – MIDDLE OF RIVER, HANAPEPE BRIDGE				
0.0 to 4.0	SAND with silt and gravel	SW-SM	Loose	(-) 5.4
4.0 to 8.0	Clayey SILT with sand and shell fragments	MH	Soft	
8.0 to 30.0	Silty SAND with gravel	SM	Medium dense	
30.0 to 105.0	Clayey SILT with weathered sand and rock fragments	MH	Stiff	
105 to 112	WEATHERED BASALT, highly to completely weathered	--	Dense	
112.0 to 124.0	COBBLES AND BOULDERS	--	Dense	
124.0 to 149.0	BASALT, moderately to highly weathered, interbedded with cobbles and boulders	--	Medium hard to hard	

- When and why was the Alternative described in Figure 2-6 [sic] totally rejected?

A two-span uniform flange girder bridge, shown in Figure 2-7, was considered and dismissed because the streamlined design fails to convey the historic rhythm and character of the existing National Register of Historic Places-eligible structure. Although the existing bridge cannot be replicated because needed corrective measures are extensive, it is desirable to perpetuate a semblance of the historic qualities that have made the bridge a distinctive part of the community. Community input received during the public information meeting in September 2015 echoed this sentiment, with most attendees supporting an arched replacement bridge. Additionally, the hydraulics study did not find notable hydraulic advantage in the two-span bridge with uniform beams. Rather, it found minimal differences between the bridge design alternatives, as each alternative would be under pressure flow.

- Based on the frequency of recent floods in Hanapepe, the expected 2 years to complete the bridge rebuild needs to be factored into the award of the contract: (a) potential exposure to flood waters during construction and (b) provisions to stop construction due to unsafe conditions from flood water.

In addition to potential exposure to flood waters, Hanapepe River Bridge is located within the tsunami evacuation zone. In the event of a tsunami warning, all construction would stop and personnel would evacuate to the safe zone on higher mauka ground. By observing tsunami warnings and moving into the safe zone, the risk to workers in the project area would be minimized. For major rain storm events, similar procedures and a Rain Event Action Plan would provide instructions for preparation and response. The discussion in Section 3.4.4 of the EA has been expanded to address this situation.

- What is the weight constraint for vehicles using the temporary bridge? What is the estimated weight of the heaviest member including truck and trailer for hauling it to the Westside? What are the hauling constraints for hauling the 190-foot beam to the Kapaa Stream Bridge project?

The temporary bridge will be designed to AASHTO HL-93 standards. For this design load, the design truck is a 3-axle truck with a variable rear axle spacing and total weight of 72 kips. The design lane load is 640 plf (pounds per linear foot).

For the Kapaa replacement bridge, the girder would be about 186 feet long and about 1.25 kips per foot. An approach being considered is to separate the girder into three pieces and splice it in the field, with the longest piece about 80 feet and approximately 50 tons. The girder that was transported to the adjacent site for the pedestrian bridge is approximately 120 feet long, though similar in weight (given the smaller load requirement). Various approaches are possible, and final decisions about transportation logistics and construction methods will be determined by the contractor.

- How about doing the same to the Hanapepe River Bridge? There are potential similarities among the Hanapepe, Kapaa, and Waimea (future) bridges because of the original design and length of span. Using a longer beam, we can eliminate one pier at each facility.

The span length of the Hanapepe replacement bridge is a function of the design objective to maintain the aesthetics and visual rhythm of a three-span arched structure. A similar concern is not present at Kapaa. Different evaluation parameters for the Hanapepe and Kapaa structures have led, appropriately, to different outcomes in how their respective substructures have been designed.

We appreciate your participation in the environmental review process. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

June 10, 2016
P.O. Box 2363
Hailey, Id 83333

CHRM HILL (Attn: Kathleen Chu)
1132 Bishop St., Suite 1100
Honolulu, HI 96813

Dear Kathleen,

The author of this letter, Thomas Teitge, is the property owner of TMK: (4) 1-9-010-015-0000. The FHWA and HDOT plan to run a temporary highway bridge through the middle of my front yard, with the promise of restoring it after two or three years when the bridge project is completed. This letter will comment on the Draft Environmental Assessment. It will also attempt to define a desirable and achievable alternative approach to the future of my property. What if in the course of government and bureaucracy, a best case scenario actually evolved. What if, in this scenario, things happened for the greater good of the public. What would it look like? Well, I'm going to try to paint a picture of just that. I am not a lawyer or an engineer, but I am a sensible individual, fully realizing the complexity of this project.

To start with, I would like to quote from the Fifth Amendment of the US Constitution: "nor shall private property be taken for public use, without just compensation". This is fundamental. Similar language exists in the Hawaii Eminent Domain Laws, and in the Uniform Relocation Assistance and Real Property Acquisition Act of 1970. In this case, what precisely represents "just compensation"? My judgment is that the project, as planned, constitutes a "taking" of my private property because of the irremediable and total loss of real estate value during and potentially after the construction of the new bridge. As of this writing, the FHWA and HDOT, have not announced their ideas as far as just compensation. An argument that I will be making, is that any just compensation, for harm to myself, and use and restoration of the property, will quickly reach an amount which is equivalent to the current real estate purchase price value of the property, such that outright acquisition of the property by the State is the most reasonable alternative.

Though I handle my business strictly as an individual and not as any registered business, my affairs and the financial harm caused to me personally must be regarded from a very real business perspective. My personal financial investments are all in real estate, and the property in question is my major investment component. The timing of this project is key to the specific financial harm caused. The announcement of the project, could not have arrived at a worse time for me personally. Nearing 70 yrs. of age, not in good health, the sale of my Hanapepe property is the central component of my unfolding retirement plans. At the time, more than one year ago, when I was first notified of the bridge project, I was actively engaged in the selling of the property, and had a buyer intent on purchase. Concurrent with the sale, I planned to purchase specific income property near my present home in Idaho. All of this, both the sale and the purchase, fell apart with the project announcement, and has remained apart into the present. My retirement plans have been delayed by one year already, and the construction part of the project, which could take two years to complete, has not even begun. My intentions were to use the entire proceeds from a sale IMMEDIATELY, not to retain the property into the future as a steady and slow means of income. I may not be alive two or three years from now. I hope this makes clear the negative impact of this project thus far.

Please note that in the fall of 2008, at a time of collapse for the real estate market nationwide, I sold the property, a then unfinished construction project, for a purchase price of \$490k. When the purchasers defaulted on the mortgage, the property came back to me. Since then, all construction has been completed and approved by the County of Kauai, and a Certificate of Occupancy has been granted. All of these improvements have taken place since the last purchase. Close to \$200,000 was spent on construction since the sale in 2008. Given its zoning as commercial, it would be to my financial advantage to sell the property for commercial development. I'd prefer to have it go the other direction, to the public. I hope to present here a spirit of compromise, to facilitate purchase by the State for the purpose of preserving open space.

It is not my intention to profit unjustly from the sale of this property. In fact I believe that my asking price may be well below fair market value. The reason for this is singular. It is my desire that this property should be removed from any future development, that it should become a park, and, or, a nature preserve in perpetuity. In this context, I raise to criticism the

discussion in the EA, (Section 4.3.1), maintaining that the project is consistent with the Kauai General Plan, (Section 7.1.5(a), which dictates: "Use General Plan policies, concerning rural character, and preservation of scenic resources, as part of the criteria for long range highway planning and design. The goal of the efficient movement of through traffic, should be weighed against policies relating to community character, livability, and natural beauty." I underscore here the phrase "preservation of scenic resources". Coastal Zone Management objectives and policies (HRS Section 205A-2) were similarly developed: "to preserve, protect and, where possible, restore the natural resources of Hawaii's coastal zone." My property is zoned commercial and this does not bode well for future preservation. The FHWA and HDOT are in a unique position to fulfill such desired preservation with judicial planning at this juncture.

In Section 4.3.2 of the EA, referring to County of Kauai zoning, again, there is language mandating the desirability of: "providing for the recreational and aesthetic needs of the community, and the effective functioning of land, air, water, plant and animal systems or communities." When in this writing, I refer to the "greater good of the public", I notice an almost ubiquitous agreement, whether through government agencies or wide spread public opinion, that preserving open, undeveloped space is for the future greater good. This is consistent with removing the land from private ownership and commercial zoning.

In the interest of bringing about public ownership of this property, I have been in contact with the Hawaii Department of Land and Natural Resources. They expressed genuine interest in the possible acquisition of the land. Their expressed mission statement is to: "enhance, protect, conserve, and manage Hawaii's unique and limited natural resources for current and future generations of the people of Hawaii, IN PARTNERSHIP WITH OTHERS FROM THE PUBLIC AND PRIVATE SECTORS." No language could more accurately pertain to the present situation. The best case scenario that I mentioned in the opening paragraph of this letter would be the partnership between myself, other private parties, the County of Kauai, the FHWA, the HDOT, and the DLNR to bring about the future preservation of this special piece of land, which merits a brief description as far as its desirability as a protected space or pocket park.

First of all, its location is visually smack dab in the middle of the highway's scenic corridor, the first thing the eye sees when crossing the bridge. There exist already ample and adjacent public parking. It has broad open lawns surrounded by mature shade trees, a beautiful rock wall along 100+ ft. of Hanapepe River front, with existing access steps to the river, for wading, swimming, fishing, or boating. It exists at an intersection of well travelled pedestrian use. It has existing and artistic security fencing. The existing structure could be readily converted to an open air public pavilion, of the type so familiar in parks throughout the islands. In short, it is a perfect location for a public pocket park.


Another important characteristic of the property, logistical in nature, is its location immediately adjacent to a primary existing County of Kauai sewer pumping facility, which requires frequent maintenance and will quite possibly require future expansion. Further logistical importance of the property came into play in the Spring of 2015, when I provided, for this project, and for the State of Hawaii, at no expense, the availability of my yard, for the assembling and launching of a large floating barge, for drilling a core sample in the river. Logistical, as well, is the formidable, existing, three-story structure; configured with no alteration, to serve as a ready, modern, comfortable, well lit, on-site, office/construction headquarters; offering full views from both the second and third floors of the entire bridge. Both offices are new and have separate outside entrances and separate restroom facilities and have all communications hooked up. Ground level offers a large secure storage area, with 13 ft. ceiling height.

The ROW path through my yard will render my house uninhabitable during construction. The ROW will cross over and inevitably damage the existing rock bulkhead. What planning has gone into assessing repair damage and restoration of this rock feature? It appears as if the project may require the removal of as many as three mature coco palms that range up to 50 ft. in height. There is no way to restore such majestic trees. What then is the price tag for lost beauty? How much will this loss of beauty devalue the property? How will it affect future sales? It appears as if two large, mature Milo trees will also be removed. These trees, which I estimate at 40 years of age, along with other foliage, form the privacy and noise barrier from the highway. What is the restoration plan for this all important barrier? A 40 year old tree can not be replaced in a day. What price tag can be put on the disruption of a life? Particularly, by its nature incalculable, the tremendous psychological stress of defending yourself from your own government. Not one day has gone by since the announcement of this project, that I have not worried over the situation in which I find myself, imposed, unforeseen, by the government's needs. I would like to have faith in unfolding government planning, that looks beyond just its specific needs, but rather, equally considers the needs of, and harm done to, the land owner.

The EA notes that the Hawaiian Hoary Bat, (*Casiurus cinereus semotus*), are regularly observed foraging over streams and wetlands such as my property, and that furthermore they typically roost in coconut and milo trees, such as those to be removed. The Hoary Bat is listed as an endangered species under the ESA and the State of Hawaii's Endangered Species List. In my years of living on the property, I have observed bats flying, on regular occasions. It appears that the perpetual shady darkness under the bridge and its proximity to neighboring milo and coco palms may create the perfect favored habitat combination. I take a great interest in the natural world, and, when younger, earned a degree from Stanford University in the Biological Sciences. I note, that no specific survey was conducted, regarding this bat.

An assessment of my property was conducted on May 11, 2016, by ACM consultants, with the objective of assessing only that portion of property to be used for the ROW. I would argue that no accurate assessment of the harm caused to me by the project, could be made by considering only the ROW portion. I would therefore suggest that an assessment of negative impacts to the entire property is fundamental to complying with the National Environmental Policy Act, and to any consideration of just compensation.

I hope that these comments will be useful in suggesting that most beneficial future for this very special property, for all parties, and for the general public; namely acquisition of the property, by the State of Hawaii, in partnership with the County of Kauai, for the purpose of preserving it as a park, and, or, open undeveloped space.

Thomas Teitge




U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
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Lakewood, CO 80228
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Fax: 720-963-3596
Michael.Will@dot.gov

August 30, 2016

In Reply Refer To:
HFPM-16

TO: THOMAS TEITGE
P.O. Box 2363
HAILEY, ID 83333

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HANAPEPE RIVER BRIDGE REPLACEMENT, PROJECT NO. STP SR50 (1)
KAUMUALII HIGHWAY, WAIMEA DISTRICT, KAUAI ISLAND
TMK: [4] 1-9-007:001 (POR.) HANAPEPE RIVER; 013 (POR.), AND 034
(POR.) AND 1-9-010:014 (POR.), 015 (POR.), 046 (POR.), AND 050 (POR.)
KAUMUALII HIGHWAY AND IONA ROAD RIGHTS-OF-WAY

Dear Mr. Teitge:

Thank you for sending comments on the Draft EA by letter dated June 10, 2016.

As discussed in the EA, the replacement bridge project will temporarily impact the surrounding environment during the construction period. We are committed to minimizing and mitigating adverse effects through implementation of the measures included in the EA. We recognize the particular impacts on your property because of its proximity to construction. As a federal agency, we are bound by the policies and procedures of the Uniform Relocation Assistance and Real Property Acquisition Act to provide equitable financial compensation for anticipated losses. Our coordination with you on this matter will continue beyond the conclusion of the environmental review process under Chapter 343, Hawaii Revised Statutes.

If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Thomas Parker, CFLHD
Kathleen Chu, CH2M HILL

Appendix A
Waters of the U.S.



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

December 16, 2015

SUBJECT: Preliminary Jurisdictional Determination for Hanapepe River Bridge Project, Island of Kauai, Hawaii (Corps File No. POH-2015-00229)

Mr. Mike Will
Project Manger
U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 380A
Lakewood, Colorado 80228-2583

Dear Mr. Will:

The Honolulu District, U.S. Army Corps of Engineers (Corps) is in receipt of your letter dated October 28, 2015 requesting a preliminary jurisdictional determination (PJD) for the Hanapepe River Bridge Project located in Hanapepe on the Island of Kauai, Hawaii. Your project has been assigned Department of the Army (DA) file number POH-2015-00229. Please reference this number in all future correspondence concerning this action.

We have completed our review of your submittal pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344; "Section 404") and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403; "Section 10"). Section 404 requires DA authorization for the discharge (placement) of dredged and/or fill material into waters of the United States (U.S.), including wetlands. Section 10 requires DA authorization for the placement of structures in navigable waters of the U.S. and/or work in, over, under or affecting navigable waters of the U.S. The Corps' evaluation process for determining whether a DA permit is needed involves two tests. If both tests are met, then a permit would likely be required. The first test determines whether the proposed project is located within the Corps' geographic jurisdiction (i.e., whether it is within a water of the U.S.). The second test determines whether the proposed project is a regulated activity under Section 10 and/or Section 404. This evaluation pertains only to geographic jurisdiction.

The review area for this PJD includes an approximate 7.9-acre area within and surrounding the Hanapepe River at the Kaunaulii Highway (Route 50) crossing as shown on the enclosed map (Enclosure 1). Based on our review of available information, including data presented in the report prepared by SWCA Environmental Consultants for CH2M Hill entitled "*Determination and Delineation of Wetlands and Other Waters of the U.S. for the Hanapepe River Bridge Project*" (herein "JD report"; dated March 2015), it appears waters of the U.S. may be present within the review area in the approximate locations noted on the maps and drawings contained in the subject

report.

This PJD, however, does not provide final concurrence on the Corps' geographic jurisdictional limits of the Hanapepe River within the review area. The surveyed high tide line (HTL) must be included on your project plans and will be subject to field verification by the Corps. Therefore, as you move forward with project planning and design, we recommend you survey the HTL for those reaches of the Hanapepe River that may be impacted by the proposed bridge project, including areas where both permanent and temporary impacts might occur (e.g., bridge abutments, bridge piers, temporary stockpiling/dewatering sites, construction staging areas, ingress/egress points, etc.). The HTL should be delineated based on physical indicators present in the field, such as an oil or scum line, debris line, vegetation line, or other physical markings that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges. If there are circumstances that prevent the use of physical indicators to determine the HTL, then the HTL elevation can be established by survey with reference to available tidal datum (i.e., NOAA tidal station 1611347, Port Allen, Hanapepe Bay 1983-2001 epoch. You may obtain such data from the web link at: <http://tidesandcurrents.noaa.gov/datums.html?id=1611347>). Mean higher high water (MHHW) datum may be substituted for the HTL datum; however, if using the MHHW datum at this project location, the datum must be adjusted and in reference to mean lower low water (MLLW) where MLLW equals 0.

The enclosed PJD is a non-binding written indication that there may be waters of the U.S. within your project area (Enclosure 2). Preliminary JDs are advisory in nature and may not be appealed. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a PJD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. If you accept this PJD, please sign and date the enclosed PJD Form and return it to our office within 15 days from the date of this letter. However, if you do not concur with this PJD, you may request an approved jurisdictional determination, which is an official determination regarding the presence or absence of waters of the U.S. An approved JD may be appealed through the Corps' administrative appeal process prescribed at 33 C.F.R. § 331 (Enclosure 3).

Please be advised that work activities related to the structural components of the Hanapepe River Bridge Project that would occur in or over navigable waters of the U.S. (i.e., waters subject to the ebb and flow of the tide) should be coordinated with the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899 since the authority to regulate bridges and causeways was transferred to the Secretary of Transportation under the Department of Transportation Act of 1966 (49 U.S.C. 1155g(6)(A)). While the Corps does not regulate bridges and causeways constructed in or over navigable waters of the U.S. under Section 10, a DA permit pursuant to Section

404 may be required for the discharge of dredged or fill material into waters of the U.S. associated with the bridge construction.

Thank you for your cooperation with the Honolulu District Regulatory Program. If you have any questions, please contact Susan A. Meyer Gayagas at (808) 835-4599 or via e-mail at susan.a.meyer@usace.army.mil. Please also complete the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey, which would help me to evaluate and improve the regulatory experience for others.

Sincerely,

A handwritten signature in black ink that reads "Michelle Lynch". The signature is written in a cursive, flowing style.

Michelle R. Lynch
Chief, Regulatory Office

Enclosures

cc (via email w/out enclosures):

Thomas Parker, CFLHD

Kurt Wald, CH2M Hill

Tiffany Bovino Agostini, SWCA Environmental Consultants

Lorayne Shimabuku, CEPOH-PP-C (Civil Works)

Lincoln Gayagas, CEPOH-EC-T (Engineering & Construction)

2100

2168

Determination and Delineation of Wetlands and Other Waters of the U.S. for the Hanapēpē River Bridge Project

Hanapēpē, Kauaʻi Island, Hawaiʻi

Prepared for
CH2M HILL

Prepared by
SWCA Environmental Consultants

March 2015



**DETERMINATION AND DELINEATION OF WETLANDS AND
OTHER WATERS OF THE U.S. FOR THE HANAPĒPĒ RIVER
BRIDGE PROJECT**

HANAPĒPĒ, KAUA'I ISLAND, HAWAI'I

Prepared for

CH2M HILL

1132 Bishop Street, Suite 1100
Honolulu, Hawai'i 96813
(808) 943-1133

Prepared by

SWCA Environmental Consultants

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1001 Bishop Street, Suite 2800
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SWCA Project No. 27166

Submitted February 18, 2015
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WATERS OF THE U.S. DETERMINATION/DELINEATION SUMMARY

PROJECT NAME: Hanapēpē River Bridge

SITE LOCATION: Hanapēpē, Kauaʻi Island, Hawaiʻi
21°54'31.91"N, 159°35'27.33"W

OWNER: Hawaiʻi Department of Transportation

SURVEY DATES: September 29, 2014

PROJECT STAFF: Brian Nicholson, Wetland Specialist
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SUMMARY

SWCA Environmental Consultants (SWCA) was tasked by CH2M HILL to conduct a determination and delineation of wetlands and other potential Waters of the U.S. governed by the Clean Water Act and the Rivers and Harbors Act at nine projects throughout the state of Hawaiʻi. This report summarizes the findings of the potential Waters of the U.S. delineated conducted at the Hanapēpē River site in Hanapēpē, Kauaʻi, on September 29, 2014.

The proposed project involves changes to the existing Hanapēpē River Bridge (#007000500301631) to amend structurally deficient conditions, narrow roadway widths, limited load capacity, substandard bridge railings, and adverse effects from hydraulic scour. Although the current assumption is to replace the entire bridge, further investigation will take place to determine if the existing bridge can be rehabilitated and widened to accommodate the wider road design and current bridge design standards. A temporary bridge and detour may be required during construction. The existing foundations, consisting of timber piles, shall be replaced with deep foundations. It is unknown if the project will require a water diversion (e.g., cofferdam, pumping) to complete construction. The delineation of Waters of the U.S. was conducted in support of the environmental compliance efforts for the project.

The survey area encompasses approximately 7.9 acres (3.2 hectares). Elevations at the site range from sea level to roughly 34 feet (10 meters) above mean sea level. The National Wetlands Inventory program identifies one aquatic habitat type within the survey area: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded (R2UBH). Geospatial data from the State of Hawaiʻi and the U.S. Geological Survey identify perennial Hanapēpē River within the survey area.

One wetland sampling point was evaluated within the survey area. A detailed field-based determination indicates that the sampling point does not meet the three-criterion test for wetlands pursuant the 1987 *Corps of Engineers Wetland Delineation Manual* and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Hawaiʻi and Pacific Islands Region*. SWCA delineated approximately 2.39 acres (0.967 hectare) of tidal, non-wetland Waters of the United States below the high tide line. Due to channelization and bank armoring, no wetlands were identified within the survey area and above the MHW. The Hanapēpē River is altered, and appears to carry a relatively permanent flow of water to the Pacific Ocean. This conclusion is subject to confirmation by the U.S. Army Corps of Engineers.

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ABBREVIATIONS

CFR	Code of Federal Regulations
CWA	Clean Water Act
CWB	Clean Water Branch
CWRM	Commission on Water Resource Management
FAC	Facultative
FACW	Facultative Wetland
ha	hectare(s)
m	meter(s)
MHW	Mean High Water
MHHW	Mean Higher High Water
mm	millimeter(s)
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	Obligate
SCAP	Stream Channel Alteration Permit
SWCA	SWCA Environmental Consultants
USACE	U.S. Army Corps of Engineers
WoUS	Waters of the U.S.

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) derives its regulatory authority over wetlands and other Waters of the U.S. (WoUS) from two federal laws: 1) Section 10 of the Rivers and Harbors Act of 1899 and 2) Section 404 of the Clean Water Act (CWA) of 1972. The Rivers and Harbors Act of 1899 prevents unauthorized obstruction or alteration of navigable WoUS. Navigable waters are defined as “subject to the ebb and flow of the tide and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 Code of Federal Regulations [CFR] 325.5(c)(2)). A Section 10 permit is required for non-fill discharging activities proposed within, over, or under WoUS. The limits of jurisdiction for tidally influenced navigable waters extend to the mean high water (MHW) line or high tide line. Often a more conservative approach than the MHW, the mean higher high water (MHHW) line, is used.

Under Section 404 of the CWA, dredged and fill material may not be discharged into jurisdictional WoUS (including wetlands) without a permit. According to 40 CFR 230.3, WoUS subject to agency jurisdiction under Section 404 include navigable waters and their tributaries, interstate waters and their tributaries, wetlands adjacent to these waters, and impoundments of these waters. In addition, waters are protected by the CWA if determined to have a “significant nexus” with a traditional navigable water or interstate water (Environmental Protection Agency and USACE 2011). The U.S. Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208) provides further information regarding whether a wetland or tributary is a WoUS. A Section 404 permit is required for all fill or discharge activities below (seaward or makai) of the MHW/MHHW line or high tide line in tidal waters or ordinary high water mark (OHWM) for non-tidal, non-wetland waters.

The USACE (33 CFR 230.3) and U.S. Environmental Protection Agency (40 CFR 230.3) define *wetlands* as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (40 CFR 232.3). The 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987 Manual; USACE 1987), as amended, outlines the technical guidelines and methods for identifying and delineating wetlands potentially subject to Section 404. This manual is supplemented by the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Hawai‘i and Pacific Islands Region* (Hawai‘i and Pacific Island Regional Supplement; USACE 2012).

CH2M HILL is reviewing the proposed Hanapēpē River Bridge project (hereafter *project*) pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. The project involves replacing the existing Hanapēpē River Bridge (#007000500301631) to amend structurally deficient conditions, narrow roadway widths, limited load capacity, substandard bridge railings, and adverse effects from hydraulic scour. Although the current assumption is to replace the entire bridge, further investigation will take place to determine if the existing bridge can be rehabilitated and widened to accommodate the wider road design and current bridge design standards. A temporary bridge and detour may be required during construction. The basic assumption is to use both an existing one-lane bridge located upstream and an additional one lane bridge adjacent to the existing bridge to detour traffic. Alternatives to this option would be to provide a two way temporary bridge to detour traffic or staged construction. The existing foundations, consisting of timber piles, shall be replaced with deep foundations. It is unknown if the project will require a water diversion (cofferdam, pumping, etc.) to complete construction. The survey was conducted in support of the environmental compliance efforts for the project.

2.0 DESCRIPTION OF THE SURVEY AREA

2.1 Location and Vicinity

The Hanapēpē River Bridge site and survey area are in the Hanapēpē area on the southwest side of the Island of Kauaʻi along Kaunuauii Highway (Route 50) at approximately milepost 16.57. The survey area encompasses Kaunuauii Highway from roughly Kona Road to Puolo Road, Hanapēpē Road from Kaunuauii Highway to Hana Road, and Hana Road between Kaunuauii Highway and Puolo Road (Figure 1). It covers approximately 7.9 acres (3.2 hectares [ha]). The surrounding area is predominantly residential.

2.2 Topography and Soils

Most of the survey area is relatively flat. Elevations in the survey area range from sea level to roughly 34 feet (10 meters [m]) above sea level. The Natural Resources Conservation Service (NRCS) identifies the following four soil types in the survey area: Pakala clay loam, 0%–2% slopes (PdA); Hanalei silty clay loam, 0%–2% slopes (HmA); Jaucas loamy fine sand, dark variant, 0%–8% slopes (JkB); and Water > 40 acres (W) (Foote et al. 1972; NRCS 2013) (Figure 2). The Hanalei silty clay, 0%–2% slopes soil type is listed as a hydric soil (NRCS 2012). Most of the survey area is covered in asphalt concrete-paved roadways and cobble that armor the banks and side slopes of the river channel.

2.3 Hydrology

Mean annual rainfall for this area is approximately 26.6 inches (676 millimeters [mm]). Rainfall is typically highest in December–January and lowest in June (Giambelluca et al. 2013). The closest rainfall gage to the site has experienced above-average rainfall for 2014 through the end of September (National Oceanic and Atmospheric Administration/National Weather Service, Weather Forecast Office Honolulu 2014).

The National Wetlands Inventory (NWI) program identifies one wetland/water type within the survey area: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded (R2UBH) (Figure 3).

The State of Hawaiʻi and the U.S. Geological Survey identify Hanapēpē River transversing the survey area (see Figure 1). The total length of this perennial stream is approximately 81.3 miles (130.8 kilometers) according to the *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (Parham et al. 2008). Hanapēpē River is listed as a 303(d) Impaired Waterbody. Turbidity is listed as the cause of impairment (Hawaiʻi State Department of Health 2014).

2.4 Flora and Fauna

Flora and fauna surveys of the survey area were conducted by SWCA on the same date as the WoUS survey. Vegetation types identified during that survey include ruderal weedy vegetation, ornamental landscaping, and a mixed riparian forest along the river. The site is dominated by non-native plants, and no state or federally listed plant species were seen (SWCA 2014).



Figure 1. Location of survey area.

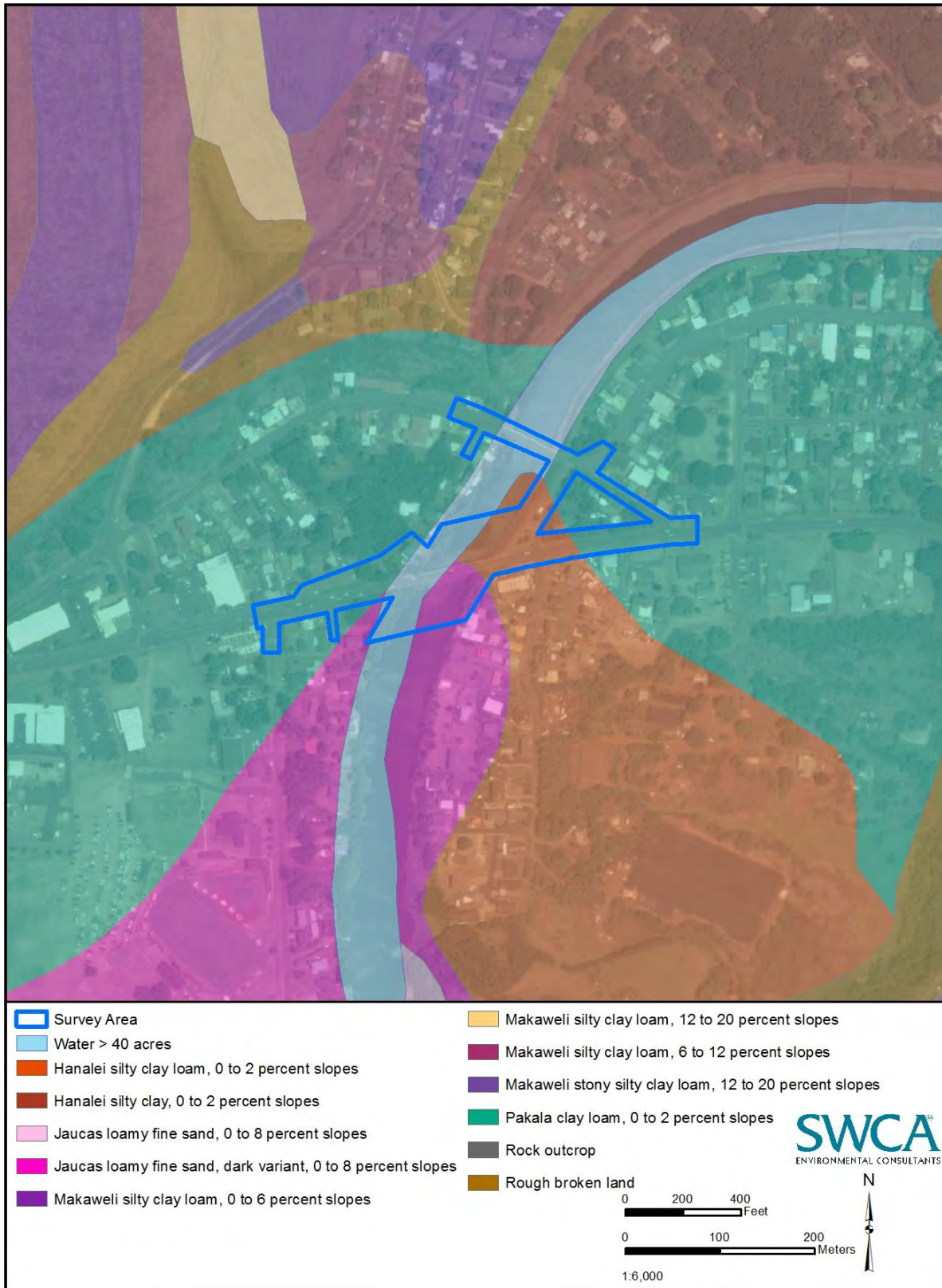


Figure 2. Soil types within the survey area.



Figure 3. National Wetland Inventory classifications near the survey area.

Although not observed during the survey, the four endangered Hawaiian waterbirds could be present within the survey area at any time. Three of these waterbirds—Hawaiian ducks (*Anas wyvilliana*), Hawaiian coots (*Fulica alai*), and Hawaiian gallinules (*Gallinula galeata sandvicensis*)—could be breeding in or near the survey area. Nēnē (*Branta sandvicensis*) may also be present on occasion and could fly over the survey area. Seabirds, particularly the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and threatened Newell’s shearwater (*Puffinus auricularis newelli*), may fly over the survey area at night while travelling to and from their upland nesting sites to the ocean. Finally, the endangered Hawaiian hoary bat or ‘ōpe‘ape‘a (*Lasiurus cinereus semotus*) may pass through the site or forage or roost within the survey area (SWCA 2014).

3.0 METHODOLOGY

Before visiting the survey area, aerial photographs and topographic maps were examined to identify potential wetlands or WoUS in or near the survey area. Information was also gleaned from the NWI program, NRCS hydric soil data, as well as previous water resource reports and environmental assessments/environmental impact statements.

SWCA biologists conducted the WoUS determination and delineation fieldwork on September 29, 2014. The biologists employed methods for determining the presence of wetlands as prescribed by the USACE 1987 Manual (USACE 1987) and the Hawai‘i and Pacific Island Regional Supplement (USACE 2012). Based on these documents, jurisdictional wetlands are identified using the following three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. All three criteria must be present for an area to be considered a wetland, unless the site is disturbed. An explanation of the three wetland criteria is provided below. Wetland determination data forms prepared during the survey are included in Appendix A.

As stated above, the jurisdiction of tidal, non-wetland WoUS extends to the high tide line or MHW line. The high tide line is defined as the intersection of the land with the water’s surface at the maximum height reached by a rising tide (33 CFR Part 328). MHW is defined as the average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch. The USACE Honolulu District often suggests using the more conservative MHHW line. Contours were mapped by ControlPoint Surveying, provided to SWCA as CAD files and subsequently projected in ArcGIS. The high tide line is determined by physical characteristics or indicators.

The geographic coordinates of sampling points and non-wetland features were collected in the field with Trimble GeoXT 6000 Series global positioning system (GPS) unit and data were post-processed in ArcGIS using GPS Correct to sub-meter accuracy. The linear length of these features was calculated by projecting these point and line data files in a geographic information system.

3.1 Vegetation

The USACE defines *hydrophytic vegetation* as “the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence” (USACE 2012). *The National Wetland Plant List* (Lichvar 2012; USACE 2014) designates wetland indicator statuses for plants in the Hawaiian Islands. The use of plant indicators helps estimate the probability of a species occurring in wetlands versus uplands. Plants are considered hydrophytes if they are classified as Obligate (OBL), Facultative Wetland (FACW), or Facultative (FAC). Descriptions of the plant indicator statuses are provided in Table 1.

Each sampling point represents a different vegetation community or NWI-designated water. At the sampling point, the absolute percentage cover was estimated for each plant species within each vegetation strata (i.e., tree, shrub, herb, woody vine). Species that individually or collectively exceeded 50% of the total cover and those with 20% of the total cover in the stratum were considered dominant (USACE 2012). These species were then compared with *The Hawaii 2014 State Wetland Plant List* (USACE 2014). Taxonomy and nomenclature follow Wagner et al. (1999, 2012) and Wagner and Herbst (2003).

Table 1. Wetland Plant Indicators

Plant Indicator	Code	Description
Obligate Wetland species	OBL	Almost always is a hydrophyte, rarely in uplands.
Facultative Wetland species	FACW	Usually is a hydrophyte, but occasionally found in uplands.
Facultative species	FAC	Commonly occurs as either a hydrophyte or non-hydrophyte.
Facultative Upland species	FACU	Occasionally is a hydrophyte, but usually occurs in uplands.
Upland species	UPL	Rarely is a hydrophyte, almost always in uplands.

Source: Lichvar et al. (2012).

3.2 Soils

A *hydric soil* is “formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (NRCS 2010). The NRCS National List of Hydric Soils (NRCS 2012) for Kaua‘i Island includes 12 hydric soils for the island. SWCA compared the NRCS National List of Hydric Soils with soils mapped in the study area by the NRCS.

This generalized soil survey does not always capture the true hydric condition of the soils on individual sites; therefore, on-site soil evaluations of wetlands by specialists are also necessary. Soil characteristics were determined in the field by digging pits using a spade. Bedrock substrate often prevented excavation to the recommended depth. SWCA biologists identified soil samples in the field with standardized color chips (i.e., Munsell Soil Color Charts; Kollmorgen Instruments Corporation 1998) of hue, value, and chroma, and by texture (sand, silt, clay, loam, muck, and peat). Anaerobic soil conditions and the presence of gleyed soils were of particular interest (USACE 1987).

3.3 Hydrology

Wetland hydrology examines the behavior of water in wetlands. Indicators of wetland hydrology are classified as primary or secondary. Examples of primary hydrologic indicators in Hawai‘i include soil saturation, high water table, surface water, hydrogen sulfide odor, sediment and drift deposits, algal mats, iron deposits, and the presence of tilapia (*Oreochromis sp./Sarotherodon sp.*) redds or aquatic fauna (USACE 2012). Secondary regional hydrologic indicators include surface soil cracks and geomorphic position. One primary indicator or any two secondary indicators must be present to conclude that wetland hydrology is present (USACE 2012). SWCA evaluated both primary and secondary hydrology indicators at the sampling point.

3.4 Boundaries of Non-Wetland Waters

Field personnel delineated the boundaries of tidal waters by recording the location of the High Tide line and by digitizing aerial imagery for locations adjacent to houses where access was precluded. The MHHW contour line (approximately 1 foot) provided by ControlPoint Surveying was also referenced.

4.0 FINDINGS

4.1 Non-Wetland Waters

A single perennial non-wetland water (Hanapēpē River) was identified in the survey area (Figure 4). The original drainage course appears modified (i.e., rip-rap and concrete, vertical concrete walls), and the river is surrounded by urban development (Figure 5).

This portion of Hanapēpē River was determined to be tidally influenced due to the presence of marine/estuarine fish (striped mullet [*Mugil cephalus*] and great barracuda [*Sphyraena barracuda*]) observed during fieldwork. The high tide line was determined at the line of debris and vegetation. The MHW line is 0.59 feet (0.18 m) above mean sea level, and the MHHW is 1.017 feet (0.31 m) above mean sea level (National Oceanic and Atmospheric Administration 2014).

In all, approximately 2.39 acres (0.967 ha) of tidal, non-wetland WoUS were delineated in the survey area. This includes roughly 714.43 linear feet (217.8 m) of non-wetland waters delineated on the eastern side of the river and 454.42 linear feet (138.5 m) delineated on the western side of the river. Downstream of the survey area, Hanapēpē River flows south and eventually empties into Hanapēpē Bay roughly 0.35 mile (0.56 kilometer) from the survey area (Figure 6).

4.2 Wetlands

The single sampling point (P1) evaluated by SWCA does not meet the three-criterion test indicative of wetland conditions pursuant to the USACE 1987 Manual and the Hawai‘i and Pacific Island Regional Supplement. Although the point is dominated by hau (*Hibiscus tiliaceus*) (FAC), no hydric soil indicators or wetland hydrology were observed. A wetland determination data form is included in Appendix A.

The remaining areas outside of the river are composed of pavement, concrete, residential yards, and ornamental landscaping. Due to the lack of hydrophytic plants seen in these areas, no additional sampling points were assessed in the survey area.

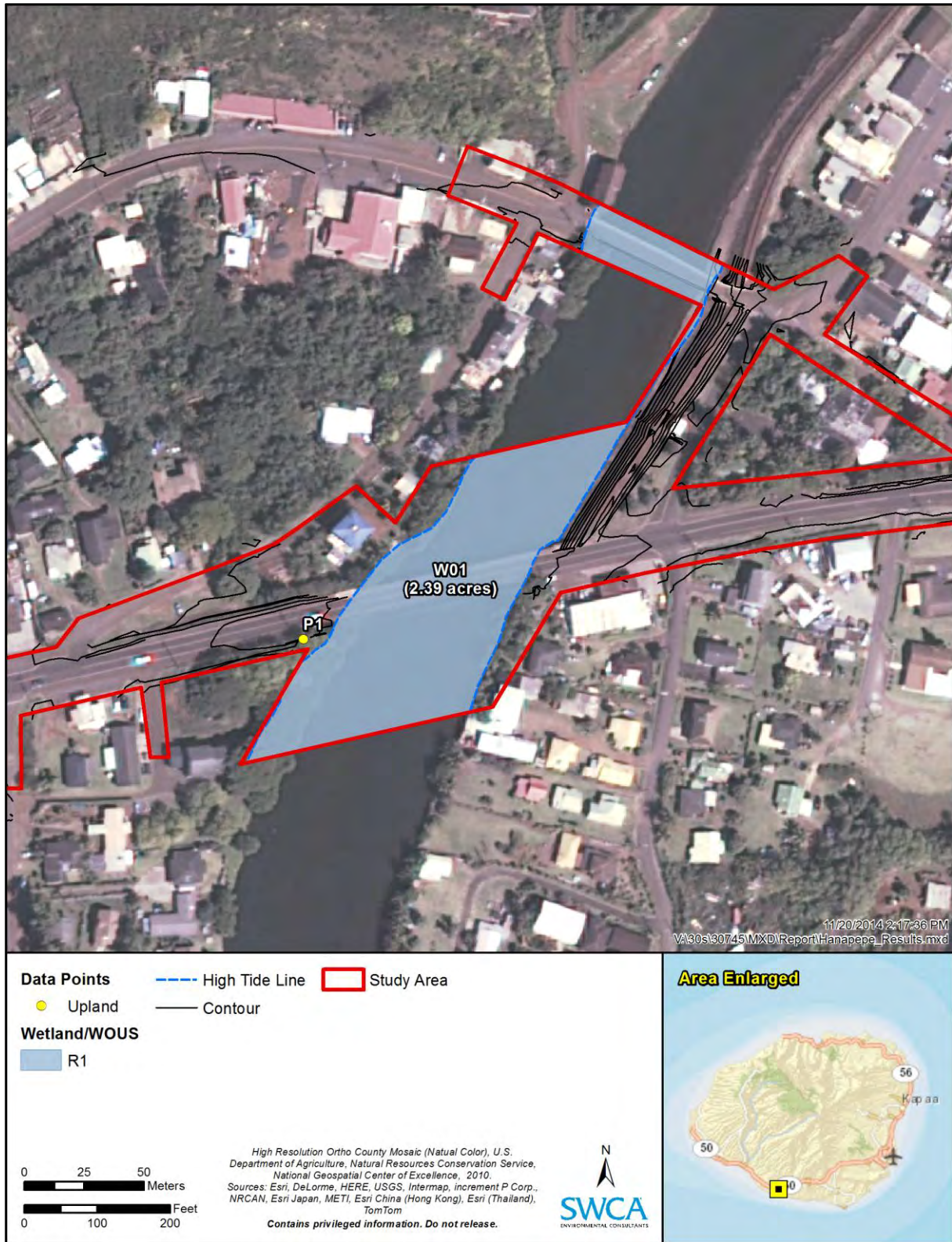


Figure 4. Survey results and delineated non-wetland waters.



Figure 5. Hanapēpē River bridge, showing modifications on the right bank. Note: high tide line is shown by yellow lines.



Figure 6. Hanapēpē River looking downstream of the bridge toward Hanapēpē Bay.

5.0 CONCLUSIONS

SWCA surveyed and delineated a single perennial non-wetland WoUS (known as Hanapēpē River) within the survey area. The stream was noted to be tidal at this location during the survey, connecting to the Pacific Ocean.

Because the project involves non-fill discharging activities over a WoUS, a Section 10 permit will likely be required. If the proposed project intends to place dredged or fill material within the delineated feature (e.g., bridge foundations or pillars), it could be subject to either a Section 10 or Section 404 Nationwide Permit (NWP). These conclusions are subject to confirmation by the USACE Honolulu District.

The general rule regarding the State Section 401 water quality certification is, if the USACE identifies that a permit (NWP/LOP/SIP) under Section 404 is required, the applicant will likely need a Section 401 water quality certification from the State Department of Health Clean Water Branch (CWB). Often a 401 water quality certification is not required for Section 10 permits. If the CWB responds and requires a 401 water quality certification, it can take several months to a year to process. In addition, a Stream Channel Alteration Permit (SCAP) may be required from the Commission on Water Resource Management (CWRM), depending on the activities proposed. SWCA recommends submitting a Request for Determination (RFD) from CWRM. If a SCAP is required, the permit timeframe is 90 days.

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Appendix A

Data Form

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Hanapepe Bridge City: Hanapepe Sampling Date: 9.29.2014 Time: 17:00
 Applicant/Owner: HDOT State/Terr/Comlth.: HI Island: Kauai Sampling Point: P1
 Investigator(s): B Nicholson / B Luke / T Agostini TMK/Parcel: 41901099/419010050
 Landform (hillslope, coastal plain, etc.): coastal plain Local relief (concave, convex, none): none
 Lat: 21°54'31.14"N Long: 159°35'29.30"W Datum: NAD UTM 4N Slope (%): 2
 Soil Map Unit Name: Pakala clay loam, 0%-2% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Hibiscus area adjacent to mangrove and standing water.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>7'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Hibiscus tillaceus</u>	<u>85</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. <u>Cocos nucifera</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____				
5. _____				
	<u>87</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>7'</u>)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by:
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species <u>85</u> x 3 = <u>255</u>
5. _____				FACU species <u>2</u> x 4 = <u>8</u>
	<u>0</u> = Total Cover			UPL species _____ x 5 = _____
				Column Totals: <u>87</u> (A) <u>263</u> (B)
				Prevalence Index = B/A = <u>3.02</u>
Herb Stratum (Plot size: <u>7'</u>)				Hydrophytic Vegetation Indicators:
1. _____				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____				<input type="checkbox"/> 2 - Dominance Test is >50%
3. _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain in Remarks or in the delineation report)
5. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____				
7. _____				
8. _____				
	<u>0</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>7'</u>)				Hydrophytic Vegetation Present?
1. _____				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
	<u>0</u> = Total Cover			
Remarks:				

SOIL

Sampling Point: P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	5 YR 3/3	100					Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Muck Presence (A8) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No X
---	--

Remarks:
Fill material in soil (concrete pieces, etc.)

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)		
<u>Primary Indicators (minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Tilapia Nests (B17) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa) <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Salt Deposits (C5) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No X Depth (inches): _____ Water Table Present? Yes _____ No X Depth (inches): _____ Saturation Present? Yes _____ No X Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No X
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

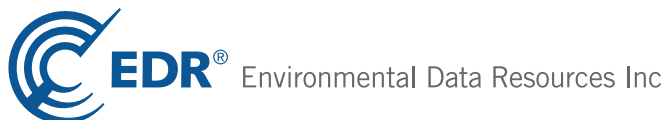
Appendix B
Summary of Environmental Data Resources
Radius Map Report™ with GeoCheck®,
May 13, 2015

Hanapepe Bridge

Kaumualii Highway/Kona Road
Hanapepe, HI 96716

Inquiry Number: 4293169.2s
May 13, 2015

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
 Please contact EDR at 1-800-352-0050
 with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

KAUMUALII HIGHWAY/KONA ROAD
HANAPEPE, HI 96716

COORDINATES

Latitude (North): 21.9089000 - 21° 54' 32.04"
Longitude (West): 159.5909000 - 159° 35' 27.24"
Universal Transverse Mercator: Zone 4
UTM X (Meters): 438966.2
UTM Y (Meters): 2422719.0
Elevation: 0 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 21159-H5 HANAPEPE, HI
Most Recent Revision: Not reported

MAPPED SITES SUMMARY

Target Property Address:
 KAUMUALII HIGHWAY/KONA ROAD
 HANAPEPE, HI 96716

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	WESTERN MOTORS SERVI	1-3680 KAUMUALII HWY	LUST, UST, Financial Assurance	Higher	454, 0.086, East
2		3716 HANAPEPE RD	EDR US Hist Cleaners	Higher	550, 0.104, NE
3	FORMER HANAPEPE REPA	4540 HANA RD	LUST, UST	Higher	707, 0.134, ENE
4	KAUAI COUNTY HANAPEP	1-3775 KAUMUALII HWY	UST	Higher	882, 0.167, ENE
5		3746 HANAPEPE RD	EDR US Hist Auto Stat	Higher	919, 0.174, NE
6	CILIA'S SERVICE STAT	1-3509 KAUMUALII HWY	LUST, UST	Higher	999, 0.189, West
7	ORGANIZATIONAL MAINT	1-3460 KAUMUALII HWY	LUST, UST	Higher	1100, 0.208, WSW
8	LONGIE'S CRACKED SEE	3508 HANAPEPE RD	LUST, UST	Higher	1183, 0.224, West
9	DENNY'S REPAIR & SER	4545 KONA RD	LUST, UST	Higher	1472, 0.279, ESE
10	SAKODA GARAGE, INC.	P.O. BOX 143 / 3954	LUST, UST	Higher	1699, 0.322, ENE
11	SAKODA GARAGE	3954 HANAPEPE RD	SHWS	Higher	1870, 0.354, ENE
12	HANAPEPE BASE YARD	4380 LELE RD	LUST, UST	Higher	2189, 0.415, West
A13	UST RELEASE AT PORT	4353 WAIALO RD	SHWS, SPILLS	Higher	2710, 0.513, SE
A14	PORT ALLEN BULK PETR	4350 WAIALO RD	SHWS	Higher	2710, 0.513, SE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

EXECUTIVE SUMMARY

LUCIS..... Land Use Control Information System

Federal ERNS list

ERNS..... Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST..... Underground Storage Tanks on Indian Land

FEMA UST..... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Control Sites

INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Response Program Sites

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

ODI..... Open Dump Inventory

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs

CDL..... Clandestine Drug Lab Listing

US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

EXECUTIVE SUMMARY

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Release Notifications
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
US MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
RMP..... Risk Management Plans
UIC..... Underground Injection Wells Listing
DRYCLEANERS..... Permitted Drycleaner Facility Listing
AIRS..... List of Permitted Facilities
INDIAN RESERV..... Indian Reservations
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
LEAD SMELTERS..... Lead Smelter Sites
PRP..... Potentially Responsible Parties
2020 COR ACTION..... 2020 Corrective Action Program List
COAL ASH DOE..... Steam-Electric Plant Operation Data
PCB TRANSFORMER..... PCB Transformer Registration Database
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
Financial Assurance..... Financial Assurance Information Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank
 RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the SHWS list, as provided by EDR, and dated 12/02/2014 has revealed that there are 3 SHWS sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SAKODA GARAGE	3954 HANAPEPE RD	ENE 1/4 - 1/2 (0.354 mi.)	11	14
<i>UST RELEASE AT PORT</i>	<i>4353 WAIALO RD</i>	<i>SE 1/2 - 1 (0.513 mi.)</i>	<i>A13</i>	<i>16</i>
PORT ALLEN BULK PETR	4350 WAIALO RD	SE 1/2 - 1 (0.513 mi.)	A14	17

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

A review of the LUST list, as provided by EDR, and dated 03/02/2015 has revealed that there are 8 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>WESTERN MOTORS SERVI</i> Facility Id: 9-701551 Release ID: 940192 Facility Status: Site Cleanup Completed (NFA)	<i>1-3680 KAUMUALII HWY</i>	<i>E 0 - 1/8 (0.086 mi.)</i>	<i>1</i>	<i>7</i>
<i>FORMER HANAPEPE REPA</i> Facility Id: 9-703730 Release ID: 010059 Facility Status: Site Cleanup Completed (NFA)	<i>4540 HANA RD</i>	<i>ENE 1/8 - 1/4 (0.134 mi.)</i>	<i>3</i>	<i>9</i>

EXECUTIVE SUMMARY

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CILIA'S SERVICE STAT Facility Id: 9-703263 Release ID: 970119 Facility Status: Site Cleanup Completed (NFA)	1-3509 KAUMUALII HWY	W 1/8 - 1/4 (0.189 mi.)	6	11
ORGANIZATIONAL MAINT Facility Id: 9-701839 Release ID: 980220 Facility Status: Site Cleanup Completed (NFA)	1-3460 KAUMUALII HWY	WSW 1/8 - 1/4 (0.208 mi.)	7	12
LONGIE'S CRACKED SEE Facility Id: 9-701538 Release ID: 950003 Facility Status: Site Cleanup Completed (NFA)	3508 HANAPEPE RD	W 1/8 - 1/4 (0.224 mi.)	8	12
DENNY'S REPAIR & SER Facility Id: 9-701967 Release ID: 900113 Facility Status: Site Cleanup Completed (NFA)	4545 KONA RD	ESE 1/4 - 1/2 (0.279 mi.)	9	13
SAKODA GARAGE, INC. Facility Id: 9-700688 Release ID: 020037 Facility Status: Site Cleanup Completed (NFA)	P.O. BOX 143 / 3954	ENE 1/4 - 1/2 (0.322 mi.)	10	13
HANAPEPE BASE YARD Facility Id: 9-701071 Release ID: 990018 Facility Status: Site Cleanup Completed (NFA)	4380 LELE RD	W 1/4 - 1/2 (0.415 mi.)	12	15

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 03/02/2015 has revealed that there are 6 UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
WESTERN MOTORS SERVI Facility Id: 9-701551 Date Closed: 09/01/1994 Tank Status: Currently In Use Tank Status: Permanently Out of Use	1-3680 KAUMUALII HWY	E 0 - 1/8 (0.086 mi.)	1	7
FORMER HANAPEPE REPA Facility Id: 9-703730 Date Closed: 09/26/2001 Tank Status: Permanently Out of Use	4540 HANA RD	ENE 1/8 - 1/4 (0.134 mi.)	3	9
KAUAI COUNTY HANAPEP Facility Id: 9-701072 Date Closed: 10/12/1998 Tank Status: Permanently Out of Use	1-3775 KAUMUALII HWY	ENE 1/8 - 1/4 (0.167 mi.)	4	10
CILIA'S SERVICE STAT Facility Id: 9-703263 Date Closed: 09/04/1997 Tank Status: Permanently Out of Use	1-3509 KAUMUALII HWY	W 1/8 - 1/4 (0.189 mi.)	6	11

EXECUTIVE SUMMARY

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ORGANIZATIONAL MAINT Facility Id: 9-701839 Date Closed: 11/16/1998 Tank Status: Permanently Out of Use	1-3460 KAUMUALII HWY	WSW 1/8 - 1/4 (0.208 mi.)	7	12
LONGIE'S CRACKED SEE Facility Id: 9-701538 Date Closed: 04/12/1991 Date Closed: 09/11/1991 Tank Status: Permanently Out of Use	3508 HANAPEPE RD	W 1/8 - 1/4 (0.224 mi.)	8	12

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there is 1 EDR US Hist Auto Stat site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported	3746 HANAPEPE RD	NE 1/8 - 1/4 (0.174 mi.)	5	11

EDR US Hist Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there is 1 EDR US Hist Cleaners site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported	3716 HANAPEPE RD	NE 0 - 1/8 (0.104 mi.)	2	9

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4293169.2S



★ Target Property

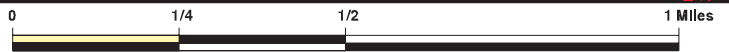
▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Manufactured Gas Plants

▨ National Priority List Sites

▨ Dept. Defense Sites



▨ Indian Reservations BIA

▨ County Boundary

▨ Oil & Gas pipelines from USGS

▨ 100-year flood zone

▨ 500-year flood zone

▨ National Wetland Inventory

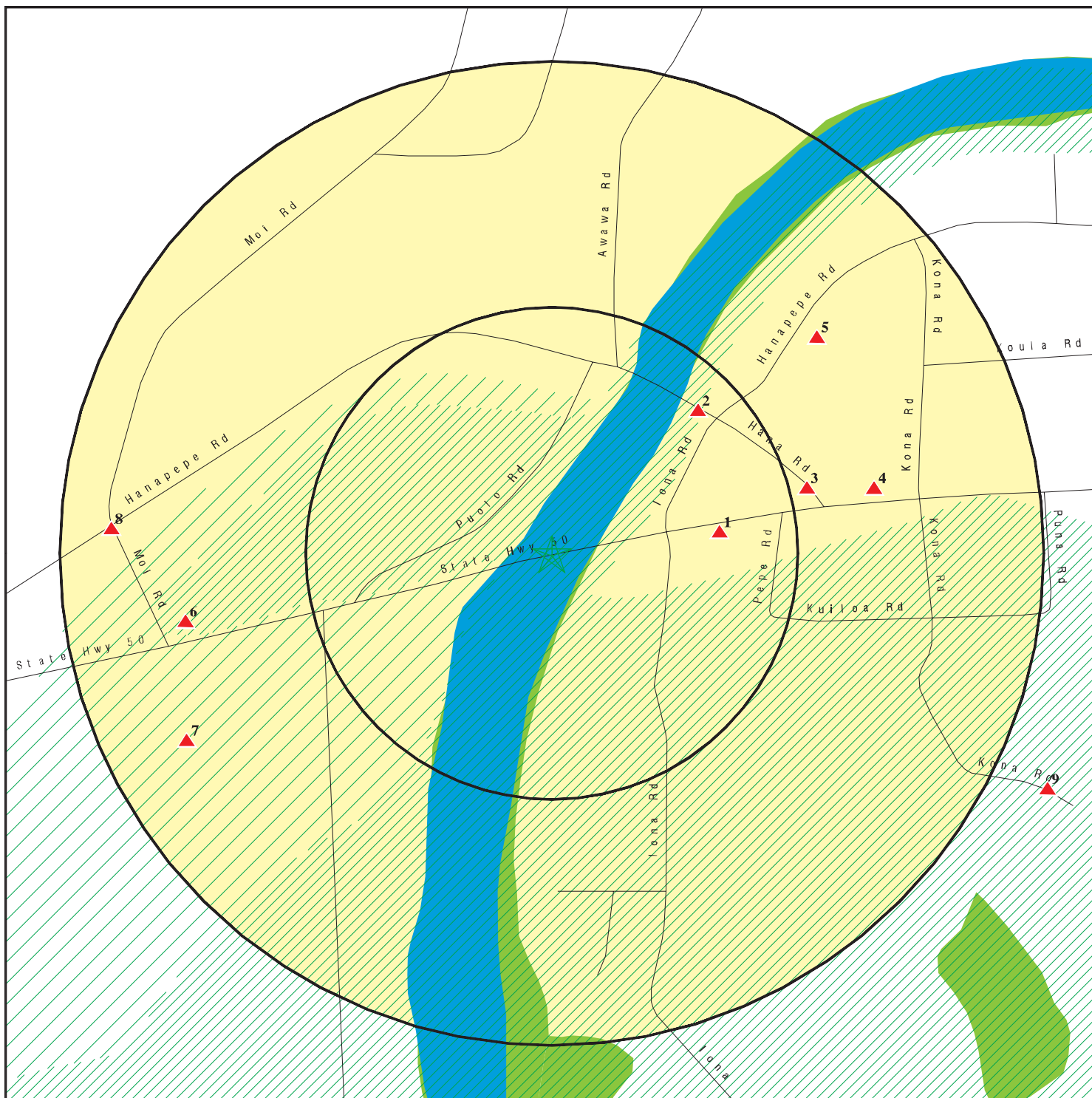


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Hanapepe Bridge
 ADDRESS: Kaunualii Highway/Kona Road
 Hanapepe HI 96716
 LAT/LONG: 21.9089 / 159.5909

CLIENT: CH2M Hill Corporation
 CONTACT: Lyna Black
 INQUIRY #: 4293169.2s
 DATE: May 13, 2015 5:13 pm

DETAIL MAP - 4293169.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🚧 National Priority List Sites
- 🏠 Dept. Defense Sites

- 0 1/16 1/8 1/4 Miles
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Hanapepe Bridge
 ADDRESS: Kaunualii Highway/Kona Road
 Hanapepe HI 96716
 LAT/LONG: 21.9089 / 159.5909

CLIENT: CH2M Hill Corporation
 CONTACT: Lyna Black
 INQUIRY #: 4293169.2s
 DATE: May 13, 2015 5:14 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site List</i>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS	1.000		0	0	1	2	NR	3
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500		1	4	3	NR	NR	8
INDIAN LUST	0.500		0	0	0	NR	NR	0
<i>State and tribal registered storage tank lists</i>								
UST	0.250		1	5	NR	NR	NR	6

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
<i>State and tribal institutional control / engineering control registries</i>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<i>State and tribal voluntary cleanup sites</i>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
<i>State and tribal Brownfields sites</i>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
<i>Local Land Records</i>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<i>Records of Emergency Release Reports</i>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<i>Other Ascertainable Records</i>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	1	NR	NR	NR	1
EDR US Hist Cleaners	0.250		1	0	NR	NR	NR	1

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
RGA HWS	TP		NR	NR	NR	NR	NR	0

- Totals --		0	3	10	4	2	0	19
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID
Direction
Distance
Elevation

Site

Database(s)

EDR ID Number
EPA ID Number

1
East
< 1/8
0.086 mi.
454 ft.

WESTERN MOTORS SERVICE, INC.
1-3680 KAUMUALII HWY
HANAPEPE, HI 96716

LUST **U001237300**
UST **N/A**
Financial Assurance

Relative:
Higher

LUST:
Facility ID: 9-701551
Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 04/19/2001
Release ID: 940192
Project Officer: Jose Ruiz

Actual:
28 ft.

UST:
Facility ID: 9-701551
Owner: Western Motors Service Inc
Owner Address: P.O. Box 87
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: 21.908810
Longitude: -159.590100
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: GPS

Tank ID: 87
Date Installed: 11/01/1994
Tank Status: Currently In Use
Date Closed: Not reported
Tank Capacity: 10000
Substance: Gasoline

Tank ID: 92
Date Installed: 11/01/1994
Tank Status: Currently In Use
Date Closed: Not reported
Tank Capacity: 10000
Substance: Gasoline

Tank ID: R-1
Date Installed: 01/01/1978
Tank Status: Permanently Out of Use
Date Closed: 09/01/1994
Tank Capacity: 1000
Substance: Gasoline

Tank ID: R-2
Date Installed: 01/01/2044
Tank Status: Permanently Out of Use
Date Closed: 09/01/1994
Tank Capacity: 2000
Substance: Gasoline

Tank ID: R-3
Date Installed: 01/01/2044
Tank Status: Permanently Out of Use
Date Closed: 09/01/1994

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WESTERN MOTORS SERVICE, INC. (Continued)

U001237300

Tank Capacity: 1000
Substance: Gasoline

Tank ID: R-4
Date Installed: 01/01/2044
Tank Status: Permanently Out of Use
Date Closed: 09/01/1994
Tank Capacity: 1000
Substance: Gasoline

HI Financial Assurance:

Alt Facility ID: 9-701551
Tank Id: R-1
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-701551
Tank Id: R-2
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-701551
Tank Id: R-4
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-701551
Tank Id: R-3
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-701551
Tank Id: 87
Tank Status: Currently In Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-701551
Tank Id: 92
Tank Status: Currently In Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-701551
Tank Id: R-2
Tank Status: Permanently Out of Use
FRTYPE: Insurance
Expiration Date: 09/10/2014

Alt Facility ID: 9-701551
Tank Id: 87
Tank Status: Currently In Use

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

WESTERN MOTORS SERVICE, INC. (Continued)

U001237300

FRTYPE: Insurance
 Expiration Date: 09/10/2014

Alt Facility ID: 9-701551
 Tank Id: 92
 Tank Status: Currently In Use
 FRTYPE: Insurance
 Expiration Date: 09/10/2014

Alt Facility ID: 9-701551
 Tank Id: R-4
 Tank Status: Permanently Out of Use
 FRTYPE: Insurance
 Expiration Date: 09/10/2014

Alt Facility ID: 9-701551
 Tank Id: R-3
 Tank Status: Permanently Out of Use
 FRTYPE: Insurance
 Expiration Date: 09/10/2014

Alt Facility ID: 9-701551
 Tank Id: R-1
 Tank Status: Permanently Out of Use
 FRTYPE: Insurance
 Expiration Date: 09/10/2014

2
NE
< 1/8
0.104 mi.
550 ft.

3716 HANAPEPE RD
HANAPEPE, HI 96716

EDR US Hist Cleaners 1015050760
N/A

Relative:
Higher

Actual:
26 ft.

EDR Historical Cleaners:

Name: GIRARDS QUALITY CLEANERS
 Year: 2011
 Address: 3716 HANAPEPE RD

Name: GIRARDS QUALITY CLEANERS
 Year: 2012
 Address: 3716 HANAPEPE RD

3
ENE
1/8-1/4
0.134 mi.
707 ft.

FORMER HANAPEPE REPAIR SHOP
4540 HANA RD
HANAPEPE, HI 96716

LUST U003832872
UST N/A

Relative:
Higher

Actual:
26 ft.

LUST:

Facility ID: 9-703730
 Facility Status: Site Cleanup Completed (NFA)
 Facility Status Date: 03/12/2002
 Release ID: 010059
 Project Officer: Jose Ruiz

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FORMER HANAPEPE REPAIR SHOP (Continued)

U003832872

UST:

Facility ID: 9-703730
Owner: MS. NOBUKO KIMATA
Owner Address: P.O. BOX 357
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: 21.909759
Longitude: -159.589182
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: Address Matching

Tank ID: R-1
Date Installed: 01/01/2045
Tank Status: Permanently Out of Use
Date Closed: 09/26/2001
Tank Capacity: 400
Substance: Gasoline

Tank ID: R-2
Date Installed: 01/01/2045
Tank Status: Permanently Out of Use
Date Closed: 09/26/2001
Tank Capacity: 400
Substance: Gasoline

4
ENE
1/8-1/4
0.167 mi.
882 ft.

KAUAI COUNTY HANAPEPE PUMP STATION
1-3775 KAUMUALII HWY
HANAPEPE, HI 96716

UST U001237272
N/A

Relative:
Higher

UST:

Actual:
24 ft.

Facility ID: 9-701072
Owner: KAUAI COUNTY - DEPT OF PUBLIC WORKS
Owner Address: 444 RICE ST. , STE 275MAIKEHA BLDG
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: Not reported
Longitude: Not reported
Horizontal Reference Datum Name: Not reported
Horizontal Collection Method Name: Not reported

Tank ID: R-UL119397
Date Installed: 06/05/1983
Tank Status: Permanently Out of Use
Date Closed: 10/12/1998
Tank Capacity: 550
Substance: Diesel

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

5
NE
1/8-1/4
0.174 mi.
919 ft.

3746 HANAPEPE RD
HANAPEPE, HI 96716

EDR US Hist Auto Stat 1015456092
N/A

Relative:
Higher

EDR Historical Auto Stations:

Name: TRADEMARK COLLISION CALL
Year: 2011
Address: 3746 HANAPEPE RD

Actual:
28 ft.

Name: G&K AUTO REPAIR SHOP
Year: 2012
Address: 3746 HANAPEPE RD

6
West
1/8-1/4
0.189 mi.
999 ft.

CILIA'S SERVICE STATION
1-3509 KAUMUALII HWY
HANAPEPE, HI 96716

LUST U001237224
UST N/A

Relative:
Higher

LUST:

Facility ID: 9-703263
Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 06/22/2005
Release ID: 970119
Project Officer: Haven Westerman

Actual:
34 ft.

UST:

Facility ID: 9-703263
Owner: KAUAI PETROLEUM CO., LTD.
Owner Address: P.O. BOX 1128
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: 21.908420
Longitude: -159.593773
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: Address Matching

Tank ID: R-1
Date Installed: 05/06/1964
Tank Status: Permanently Out of Use
Date Closed: 09/04/1997
Tank Capacity: 2000
Substance: Gasoline

Tank ID: R-2
Date Installed: 05/06/1964
Tank Status: Permanently Out of Use
Date Closed: 09/04/1997
Tank Capacity: 3000
Substance: Gasoline

MAP FINDINGS

Map ID
Direction
Distance
Elevation

Site

Database(s)

EDR ID Number
EPA ID Number

7
WSW
1/8-1/4
0.208 mi.
1100 ft.

ORGANIZATIONAL MAINT. SHOP 5
1-3460 KAUMUALII HWY
HANAPEPE, HI 96716

LUST **U001237326**
UST **N/A**

Relative:
Higher

LUST:
Facility ID: 9-701839
Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 12/09/1998
Release ID: 980220
Project Officer: Jose Ruiz

Actual:
30 ft.

UST:
Facility ID: 9-701839
Owner: STATE DOD - ARMY NATIONAL GUARD
Owner Address: 3949 DIAMOND HEAD ROAD
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: 21.907958
Longitude: -159.593933
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: Address Matching

Tank ID: R-1
Date Installed: 12/31/2042
Tank Status: Permanently Out of Use
Date Closed: 11/16/1998
Tank Capacity: 3000
Substance: Diesel

8
West
1/8-1/4
0.224 mi.
1183 ft.

LONGIE'S CRACKED SEED
3508 HANAPEPE RD
HANAPEPE, HI 96716

LUST **U003222449**
UST **N/A**

Relative:
Higher

LUST:
Facility ID: 9-701538
Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 10/30/2008
Release ID: 950003
Project Officer: Shaobin Li

Actual:
37 ft.

UST:
Facility ID: 9-701538
Owner: DENNIS & DAYLE KUROKAWA
Owner Address: P.O. BOX 542 / 3508 HANAPEPE RD
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: 21.909346
Longitude: -159.593886
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: Map

Tank ID: R-3
Date Installed: 05/21/1955
Tank Status: Permanently Out of Use
Date Closed: 04/12/1991
Tank Capacity: 500
Substance: Gasoline

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LONGIE'S CRACKED SEED (Continued)

U003222449

Tank ID: R-4
Date Installed: 05/21/1955
Tank Status: Permanently Out of Use
Date Closed: 09/11/1991
Tank Capacity: 500
Substance: Gasoline

9
ESE
1/4-1/2
0.279 mi.
1472 ft.

DENNY'S REPAIR & SERVICE
4545 KONA RD
HANAPEPE, HI 96716

LUST U003222467
UST N/A

Relative:
Higher

LUST:
Facility ID: 9-701967
Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 12/29/1998
Release ID: 900113
Project Officer: Lene Ichinotsubo

Actual:
21 ft.

UST:
Facility ID: 9-701967
Owner: DENNY'S REPAIR & SERVICE
Owner Address: 4545 KONA RD
Owner City,St,Zip: Hanapepe, 96716 96716
Latitude: 21.910862
Longitude: -159.588254
Horizontal Reference Datum Name: NAD83
Horizontal Collection Method Name: Address Matching

Tank ID: R-1
Date Installed: 04/20/1960
Tank Status: Permanently Out of Use
Date Closed: 07/12/1991
Tank Capacity: 1000
Substance: Gasoline

Tank ID: R-2
Date Installed: 04/20/1960
Tank Status: Permanently Out of Use
Date Closed: 07/12/1991
Tank Capacity: 1000
Substance: Gasoline

10
ENE
1/4-1/2
0.322 mi.
1699 ft.

SAKODA GARAGE, INC.
P.O. BOX 143 / 3954 HANAPEPE RD
HANAPEPE, HI 96716

LUST U003222429
UST N/A

Relative:
Higher

LUST:
Facility ID: 9-700688
Facility Status: Site Cleanup Completed (NFA)
Facility Status Date: 09/16/2008
Release ID: 020037

Actual:
21 ft.

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

SAKODA GARAGE, INC. (Continued)

U003222429

Project Officer: Darren Park

UST:

Facility ID: 9-700688
 Owner: SAKODA GARAGE, INC.
 Owner Address: P.O. BOX 143 / 3954 HANAPEPE RD
 Owner City,St,Zip: Hanapepe, 96716 96716
 Latitude: 21.909890
 Longitude: -159.586000
 Horizontal Reference Datum Name: NAD83
 Horizontal Collection Method Name: GPS

Tank ID: R-1
 Date Installed: 05/07/1974
Tank Status: Permanently Out of Use
 Date Closed: 07/24/2002
 Tank Capacity: 4000
 Substance: Gasoline

Tank ID: R-2
 Date Installed: 05/07/1974
Tank Status: Permanently Out of Use
 Date Closed: 07/24/2002
 Tank Capacity: 4000
 Substance: Gasoline

Tank ID: R-3
 Date Installed: 05/07/1966
Tank Status: Permanently Out of Use
 Date Closed: 07/24/2002
 Tank Capacity: 2000
 Substance: Gasoline

11
 ENE
 1/4-1/2
 0.354 mi.
 1870 ft.

SAKODA GARAGE
3954 HANAPEPE RD
HANAPEPE, HI 96716

SHWS S108859917
N/A

Relative:
Higher

SHWS:
 Organization: Not reported
 Supplemental Location: Not reported
 Island: Kauai
 Environmental Interest: Sakoda Garage
 HID Number: Not reported
 Facility Registry Identifier: 110013778938
 Lead Agency: SHWB
 Program: State
 Project Manager: Anna Fernandez
 Hazard Priority: Low
 Potential Hazards And Controls: Hazard Present
 Organization: Not reported
 Island: Kauai
 Supplemental Location Text: Not reported
 SDAR Environmental Interest Name: Sakoda Garage

Actual:
31 ft.

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

SAKODA GARAGE (Continued)

S108859917

HID Number:	Not reported
Facility Registry Identifier:	110013778938
Lead Agency:	SHWB
Program Name:	State
Potential Hazard And Controls:	Hazard Present
Priority:	Low
Assessment:	Response Necessary
Response:	Response Ongoing
Nature of Contamination:	Not reported
Nature of Residual Contamination:	Not reported
Use Restrictions:	Controls Required to Manage Contamination
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	Not reported
Document Date:	Not reported
Document Number:	Not reported
Document Subject:	Not reported
Project Manager:	Anna Fernandez
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

12
West
1/4-1/2
0.415 mi.
2189 ft.

HANAPEPE BASE YARD
4380 LELE RD
HANAPEPE, HI 96716

LUST U003222438
UST N/A

Relative:
Higher

LUST:
 Facility ID: 9-701071
 Facility Status: Site Cleanup Completed (NFA)
 Facility Status Date: 09/23/1999
 Release ID: 990018
 Project Officer: Richard Takaba

Actual:
25 ft.

UST:
 Facility ID: 9-701071
 Owner: KAUAI COUNTY - DEPT OF PUBLIC WORKS
 Owner Address: 444 RICE ST. , STE 275MAIKEHA BLDG
 Owner City,St,Zip: Hanapepe, 96716 96716
 Latitude: 21.904603
 Longitude: -159.597420
 Horizontal Reference Datum Name: NAD83
 Horizontal Collection Method Name: Address Matching

Tank ID: R-G48119
 Date Installed: 06/05/1976
Tank Status: Permanently Out of Use
 Date Closed: 10/07/1998
 Tank Capacity: 2500
 Substance: Gasoline

Tank ID: r-G48120
 Date Installed: 06/05/1976
Tank Status: Permanently Out of Use
 Date Closed: 10/07/1998

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

HANAPEPE BASE YARD (Continued)

U003222438

Tank Capacity: 1500
 Substance: Diesel

**A13
 SE
 1/2-1
 0.513 mi.
 2710 ft.**

**UST RELEASE AT PORT ALLEN
 4353 WAIALO RD
 ELEELE, HI 96705**

**SHWS S108859896
 SPILLS N/A**

Site 1 of 2 in cluster A

**Relative:
 Higher**

SHWS:

**Actual:
 56 ft.**

Organization:	Not reported
Supplemental Location:	Port Allen
Island:	Kauai
Environmental Interest:	Kai Olina Development Site
HID Number:	Not reported
Facility Registry Identifier:	Not reported
Lead Agency:	HEER
Program:	State
Project Manager:	Anna Fernandez
Hazard Priority:	NFA
Potential Hazards And Controls:	No Hazard
Organization:	Not reported
Island:	Kauai
Supplemental Location Text:	Port Allen
SDAR Environmental Interest Name:	Kai Olina Development Site
HID Number:	Not reported
Facility Registry Identifier:	Not reported
Lead Agency:	HEER
Progran Name:	State
Potential Hazard And Controls:	No Hazard
Priority:	NFA
Assessment:	Response Necessary
Response:	Response Complete
Nature of Contamination:	Found: TPH-D in soil
Nature of Residual Contamination:	Not reported
Use Restrictions:	No Hazard Present For Unrestricted Residential Use
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action Letter - Unrestricted Residential Use
Document Date:	09/06/2006
Document Number:	2006-546-AF
Document Subject:	No Further Action Determination
Project Manager:	Anna Fernandez
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

HI SPILLS:

Island:	Kauai
Supplemental Loc. Text:	Port Allen
Case Number:	20051206-0955
HID Number:	Not reported
Facility Registry Id:	Not reported
Lead and Program:	HEER EP&R
ER:	Not reported
Units:	UST Release at Port Allen
Substances:	Fuel Oil #6

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

UST RELEASE AT PORT ALLEN (Continued)

S108859896

Less Or Greater Than: Not reported
 Numerical Quantity: 50
 Units: Gallons
 Activity Type: Response
 Activity Lead: Curtis Martin
 Assignment End Date: Not reported
 Result: Not reported
 File Under: Alexander & Baldwin, Inc.

**A14
 SE
 1/2-1
 0.513 mi.
 2710 ft.**

**PORT ALLEN BULK PETROLEUM STORAGE TERMINAL
 4350 WAIALO RD
 PORT ALLEN, HI 96716
 Site 2 of 2 in cluster A**

**SHWS S106820090
 N/A**

**Relative:
 Higher**

SHWS:

**Actual:
 57 ft.**

Organization:	Not reported
Supplemental Location:	Not reported
Island:	Kauai
Environmental Interest:	Port Allen Bulk Petroleum Storage Terminal
HID Number:	Not reported
Facility Registry Identifier:	110013776137
Lead Agency:	SHWB
Program:	State
Project Manager:	John Peard
Hazard Priority:	NFA
Potential Hazards And Controls:	Hazard Undetermined
Organization:	Not reported
Island:	Kauai
Supplemental Location Text:	Not reported
SDAR Environmental Interest Name:	Port Allen Bulk Petroleum Storage Terminal
HID Number:	Not reported
Facility Registry Identifier:	110013776137
Lead Agency:	SHWB
Progran Name:	State
Potential Hazard And Controls:	Hazard Undetermined
Priority:	NFA
Assessment:	Not reported
Response:	Not reported
Nature of Contamination:	Not reported
Nature of Residual Contamination:	Not reported
Use Restrictions:	Undetermined
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	Closed - Documentation Inadequate to Evaluate Risk
Document Date:	08/23/2004
Document Number:	Not reported
Document Subject:	Not reported
Project Manager:	John Peard
Contact Information:	(808) 933-9921 Environmental Health Bldg, 1582 Kamehameha Ave, Hilo, HI 96720

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 04/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 04/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 04/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 05/01/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/07/2014	Telephone: 703-603-8704
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 04/08/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 05/01/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 02/26/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 02/26/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/03/2014	Source: Department of the Navy
Date Data Arrived at EDR: 12/12/2014	Telephone: 843-820-7326
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 48	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/29/2014	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 09/30/2014	Telephone: 202-267-2180
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 03/31/2015
Number of Days to Update: 37	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Sites List

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 12/02/2014	Source: Department of Health
Date Data Arrived at EDR: 12/22/2014	Telephone: 808-586-4249
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 02/27/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF: Permitted Landfills in the State of Hawaii

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/17/2012	Source: Department of Health
Date Data Arrived at EDR: 04/03/2013	Telephone: 808-586-4245
Date Made Active in Reports: 05/10/2013	Last EDR Contact: 04/02/2015
Number of Days to Update: 37	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Varies

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 03/02/2015	Source: Department of Health
Date Data Arrived at EDR: 03/04/2015	Telephone: 808-586-4228
Date Made Active in Reports: 03/17/2015	Last EDR Contact: 02/26/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 01/30/2015	Source: EPA, Region 5
Date Data Arrived at EDR: 02/05/2015	Telephone: 312-886-7439
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/23/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/10/2015	Telephone: 214-665-6597
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014	Source: EPA Region 4
Date Data Arrived at EDR: 03/03/2015	Telephone: 404-562-8677
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013	Source: EPA Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 04/03/2015
Number of Days to Update: 184	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 01/28/2015	Source: EPA Region 8
Date Data Arrived at EDR: 01/30/2015	Telephone: 303-312-6271
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 42	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/08/2015	Telephone: 415-972-3372
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015	Source: EPA Region 10
Date Data Arrived at EDR: 02/12/2015	Telephone: 206-553-2857
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 29	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 03/02/2015	Source: Department of Health
Date Data Arrived at EDR: 03/04/2015	Telephone: 808-586-4228
Date Made Active in Reports: 03/17/2015	Last EDR Contact: 02/26/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014	Source: EPA Region 9
Date Data Arrived at EDR: 02/13/2015	Telephone: 415-972-3368
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 28	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/29/2015	Source: EPA Region 8
Date Data Arrived at EDR: 01/30/2015	Telephone: 303-312-6137
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 42	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 01/23/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/13/2015	Telephone: 214-665-7591
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 28	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 01/30/2015	Source: EPA Region 5
Date Data Arrived at EDR: 02/05/2015	Telephone: 312-886-6136
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations).

Date of Government Version: 09/30/2014	Source: EPA Region 4
Date Data Arrived at EDR: 03/03/2015	Telephone: 404-562-9424
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013	Source: EPA, Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 01/27/2014	Last EDR Contact: 04/28/2015
Number of Days to Update: 271	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/03/2015	Source: EPA Region 10
Date Data Arrived at EDR: 02/12/2015	Telephone: 206-553-2857
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 29	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 04/13/2015
Number of Days to Update: 55	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites

A listing of sites with engineering controls in place.

Date of Government Version: 12/02/2014	Source: Department of Health
Date Data Arrived at EDR: 12/22/2014	Telephone: 404-586-4249
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 02/27/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls

Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 12/02/2014	Source: Department of Health
Date Data Arrived at EDR: 12/22/2014	Telephone: 808-586-4249
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 02/27/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014	Source: EPA, Region 1
Date Data Arrived at EDR: 10/01/2014	Telephone: 617-918-1102
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 04/02/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

VCP: Voluntary Response Program Sites

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 12/02/2014	Source: Department of Health
Date Data Arrived at EDR: 12/22/2014	Telephone: 808-586-4249
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 02/27/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites

With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 12/02/2014	Source: Department of Health
Date Data Arrived at EDR: 12/22/2014	Telephone: 808-586-4249
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 02/27/2015
Number of Days to Update: 36	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/22/2014	Telephone: 202-566-2777
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 03/24/2015
Number of Days to Update: 38	Next Scheduled EDR Contact: 07/06/2015
	Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009	Source: EPA, Region 9
Date Data Arrived at EDR: 05/07/2009	Telephone: 415-947-4219
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 04/23/2015
Number of Days to Update: 137	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998

Date Data Arrived at EDR: 12/03/2007

Date Made Active in Reports: 01/24/2008

Number of Days to Update: 52

Source: Environmental Protection Agency

Telephone: 703-308-8245

Last EDR Contact: 05/01/2015

Next Scheduled EDR Contact: 08/17/2015

Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015

Date Data Arrived at EDR: 03/10/2015

Date Made Active in Reports: 03/25/2015

Number of Days to Update: 15

Source: Drug Enforcement Administration

Telephone: 202-307-1000

Last EDR Contact: 03/03/2015

Next Scheduled EDR Contact: 06/15/2015

Data Release Frequency: Quarterly

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010

Date Data Arrived at EDR: 09/10/2010

Date Made Active in Reports: 10/22/2010

Number of Days to Update: 42

Source: Department of Health

Telephone: 808-586-4249

Last EDR Contact: 02/26/2015

Next Scheduled EDR Contact: 06/15/2015

Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015

Date Data Arrived at EDR: 03/10/2015

Date Made Active in Reports: 03/25/2015

Number of Days to Update: 15

Source: Drug Enforcement Administration

Telephone: 202-307-1000

Last EDR Contact: 03/03/2015

Next Scheduled EDR Contact: 06/15/2015

Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014

Date Data Arrived at EDR: 03/18/2014

Date Made Active in Reports: 04/24/2014

Number of Days to Update: 37

Source: Environmental Protection Agency

Telephone: 202-564-6023

Last EDR Contact: 04/27/2015

Next Scheduled EDR Contact: 08/10/2015

Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/29/2014	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 12/30/2014	Telephone: 202-366-4555
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 03/31/2015
Number of Days to Update: 69	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

SPILLS: Release Notifications

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 12/02/2014	Source: Department of Health
Date Data Arrived at EDR: 12/22/2014	Telephone: 808-586-4249
Date Made Active in Reports: 01/28/2015	Last EDR Contact: 02/27/2015
Number of Days to Update: 37	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/11/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/29/2014	Telephone: (415) 495-8895
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 03/31/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 08/07/2012	Telephone: 202-366-4595
Date Made Active in Reports: 09/18/2012	Last EDR Contact: 05/05/2015
Number of Days to Update: 42	Next Scheduled EDR Contact: 08/17/2015
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 24

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/27/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 21

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015	Source: EPA
Date Data Arrived at EDR: 02/27/2015	Telephone: (415) 947-8000
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 03/09/2015
Number of Days to Update: 26	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/13/2015	Telephone: 202-564-8600
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 40	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011	Source: EPA/NTIS
Date Data Arrived at EDR: 02/26/2013	Telephone: 800-424-9346
Date Made Active in Reports: 04/19/2013	Last EDR Contact: 02/24/2015
Number of Days to Update: 52	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Biennially

UIC: Underground Injection Wells Listing

A listing of underground injection well locations.

Date of Government Version: 02/07/2013	Source: Department of Health
Date Data Arrived at EDR: 02/12/2013	Telephone: 808-586-4258
Date Made Active in Reports: 04/09/2013	Last EDR Contact: 02/26/2015
Number of Days to Update: 56	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEANERS: Permitted Drycleaner Facility Listing

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 12/31/2014	Source: Department of Health
Date Data Arrived at EDR: 01/09/2015	Telephone: 808-586-4200
Date Made Active in Reports: 02/11/2015	Last EDR Contact: 04/06/2015
Number of Days to Update: 33	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

AIRS: List of Permitted Facilities

A listing of permitted facilities in the state.

Date of Government Version: 04/08/2015	Source: Department of Health
Date Data Arrived at EDR: 04/10/2015	Telephone: 808-586-4200
Date Made Active in Reports: 04/30/2015	Last EDR Contact: 04/06/2015
Number of Days to Update: 20	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 12/08/2006	Telephone: 202-208-3710
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/14/2015
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2011	Telephone: 615-532-8599
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 02/18/2015
Number of Days to Update: 54	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 03/13/2015
Number of Days to Update: 40	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/10/2015	Telephone: 202-566-1917
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Financial Assurance: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 03/13/2015	Source: Department of Health
Date Data Arrived at EDR: 03/17/2015	Telephone: 808-586-4226
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 03/13/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 06/29/2015
	Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/14/2015
Number of Days to Update: 339	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: N/A

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/26/2014	Telephone: 703-603-8787
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 04/10/2015
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 10/17/2014	Telephone: 202-564-6023
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 02/13/2015
Number of Days to Update: 3	Next Scheduled EDR Contact: 05/25/2015
	Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/03/2015	Telephone: 703-308-4044
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 02/13/2015
Number of Days to Update: 6	Next Scheduled EDR Contact: 05/25/2015
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 05/01/2015
Number of Days to Update: 83	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 05/07/2015
Number of Days to Update: 88	Next Scheduled EDR Contact: 08/24/2015
	Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 04/15/2015
Number of Days to Update: 76	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Varies

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 03/30/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 03/30/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGHA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A	Source: Department of Health
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 01/17/2014	Last EDR Contact: 06/01/2012
Number of Days to Update: 200	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A	Source: Department of Health
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 01/03/2014	Last EDR Contact: 06/01/2012
Number of Days to Update: 186	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HANAPEPE BRIDGE
KAUMUALII HIGHWAY/KONA ROAD
HANAPEPE, HI 96716

TARGET PROPERTY COORDINATES

Latitude (North):	21.9089 - 21° 54' 32.04"
Longitude (West):	159.5909 - 159° 35' 27.24"
Universal Transverse Mercator:	Zone 4
UTM X (Meters):	438966.2
UTM Y (Meters):	2422719.0
Elevation:	0 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	21159-H5 HANAPEPE, HI
Most Recent Revision:	Not reported

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

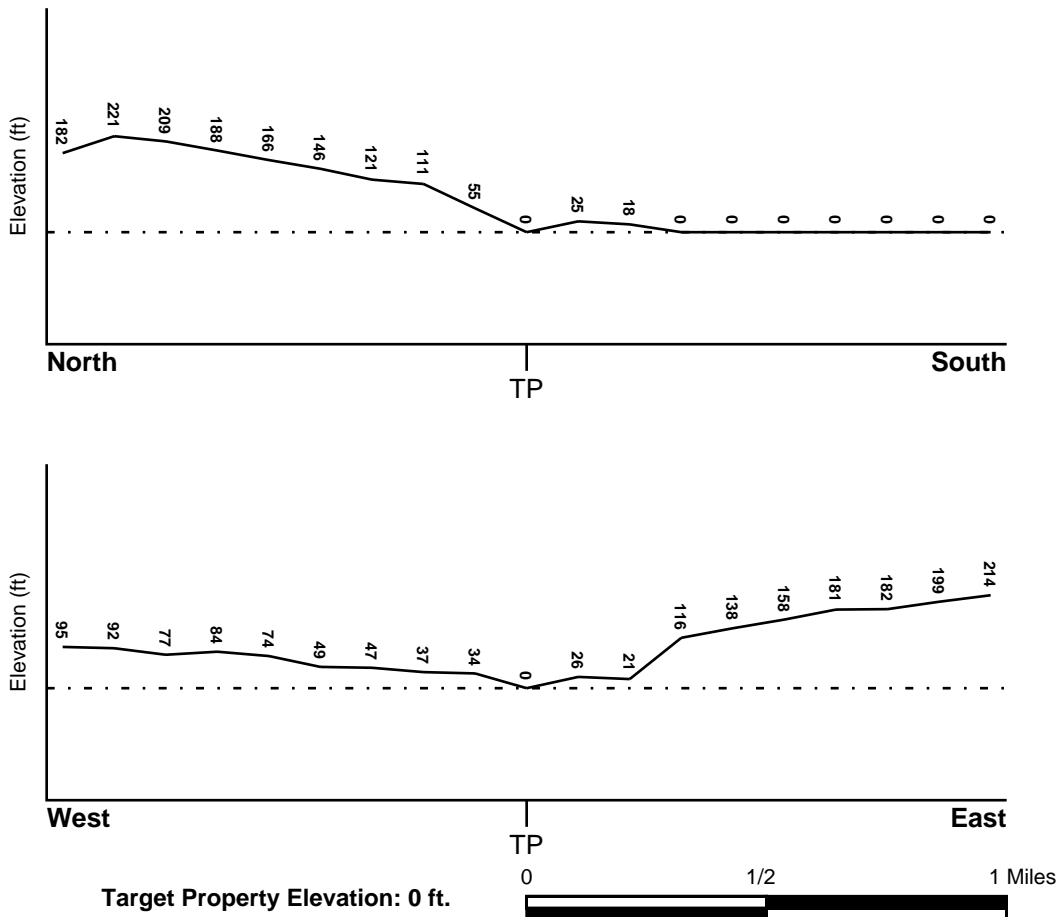
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> KAUAI, HI	<u>FEMA Flood Electronic Data</u> YES - refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	1500020186D - FEMA Q3 Flood data
Additional Panels in search area:	1500020180C - FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> HANAPEPE	<u>NWI Electronic Data Coverage</u> YES - refer to the Overview Map and Detail Map
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HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

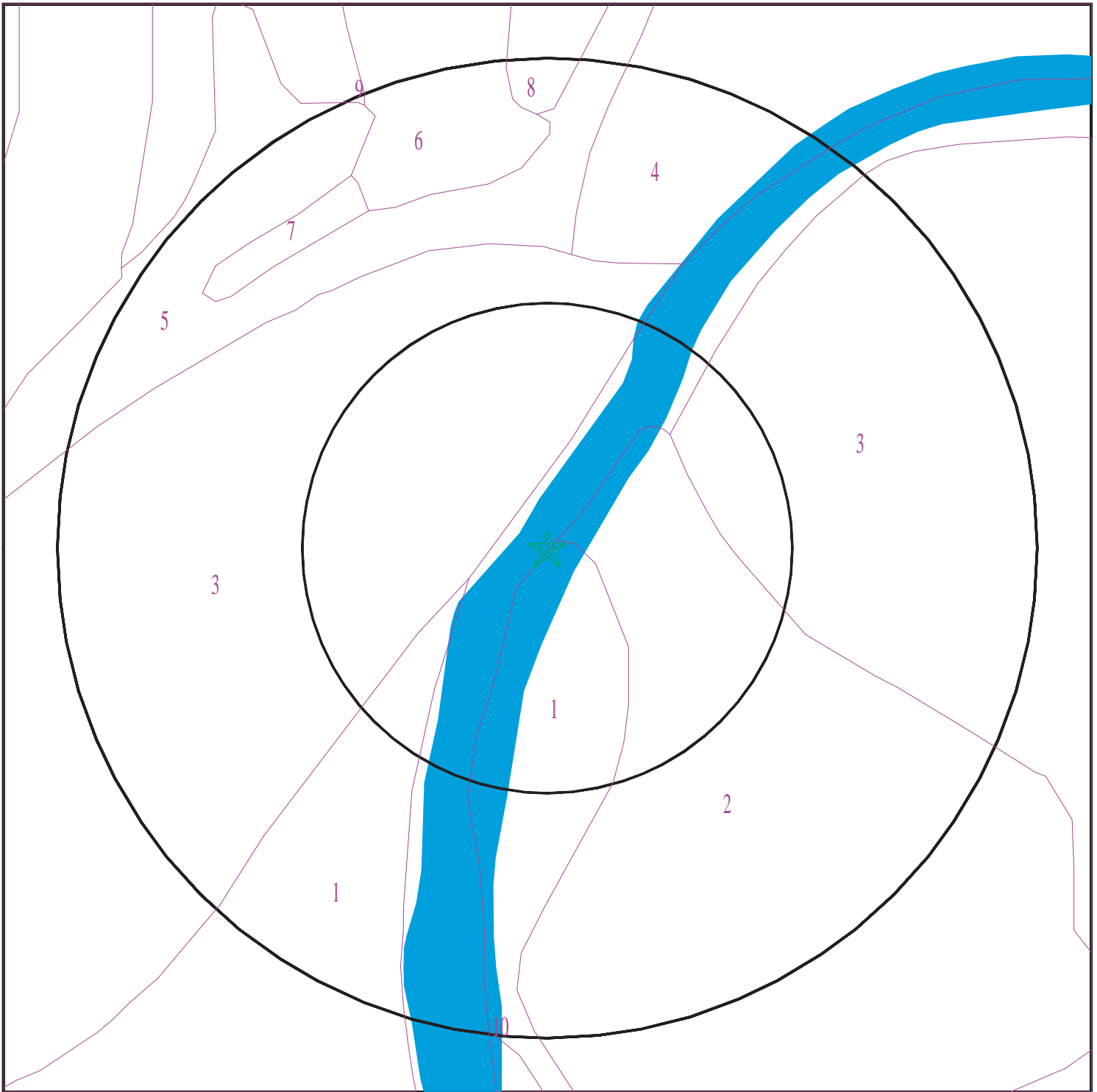
Era: -
System: -
Series: -
Code: N/A (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

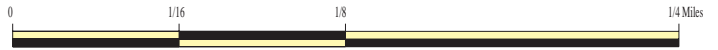
Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4293169.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Hanapepe Bridge
ADDRESS: Kaunualii Highway/Kona Road
Hanapepe HI 96716
LAT/LONG: 21.9089 / 159.5909

CLIENT: CH2M Hill Corporation
CONTACT: Lyna Black
INQUIRY #: 4293169.2s
DATE: May 13, 2015 5:16 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Jaucas variant

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 7.3 Min: 6.6
2	5 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Hanalei

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 30 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14 Min: 1.41	Max: 6.5 Min: 4.5
2	12 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	35 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 6.1

Soil Map ID: 3

Soil Component Name: Pakala

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	16 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14 Min: 4.23	Max: 5 Min: 4.5
2	16 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 6 Min: 5.6

Soil Map ID: 4

Soil Component Name: Hanalei

Soil Surface Texture: silty clay

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 15 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14.11 Min: 1.41	Max: 6.5 Min: 4.5
2	12 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	35 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14.11 Min: 4.23	Max: 7.3 Min: 6.1

Soil Map ID: 5

Soil Component Name: Rough broken land

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14 Min: 4	Max: 6 Min: 5.1
2	7 inches	29 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 14 Min: 4	Max: 6 Min: 5.1
3	29 inches	59 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 6

Soil Component Name: Makaweli

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 6.5 Min: 6.1
2	11 inches	25 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 7.3 Min: 6.6
3	25 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 7

Soil Component Name: Makaweli

Soil Surface Texture: stony silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 6.5 Min: 6.1
2	11 inches	25 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 7.3 Min: 6.6
3	25 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 8

Soil Component Name: Makaweli

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 6.5 Min: 6.1
2	11 inches	25 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 7.3 Min: 6.6
3	25 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 9

Soil Component Name: Makaweli

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 6.5 Min: 6.1
2	11 inches	25 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 42.34 Min: 4.23	Max: 7.3 Min: 6.6
3	25 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 10

Soil Component Name: Jaucas

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 7.3 Min: 6.6
2	12 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 8.4 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A1	USGS40000271494	1/2 - 1 Mile SE
A3	USGS40000271493	1/2 - 1 Mile SE
A4	USGS40000271492	1/2 - 1 Mile SE
A5	USGS40000271491	1/2 - 1 Mile SE
A6	USGS40000271487	1/2 - 1 Mile SSE
B7	USGS40000271489	1/2 - 1 Mile SSE
A8	USGS40000271488	1/2 - 1 Mile SSE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
B13	USGS40000271490	1/2 - 1 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A2	HI9000000000387	1/2 - 1 Mile SE
B9	HI9000000000384	1/2 - 1 Mile SSE
B10	HI9000000000385	1/2 - 1 Mile SSE
B11	HI9000000000386	1/2 - 1 Mile SSE
12	HI9000000000388	1/2 - 1 Mile SE
14	HI9000000000404	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 4293169.2s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location



SITE NAME: Hanapepe Bridge
 ADDRESS: Kaunualii Highway/Kona Road
 Hanapepe HI 96716
 LAT/LONG: 21.9089 / 159.5909

CLIENT: CH2M Hill Corporation
 CONTACT: Lyna Black
 INQUIRY #: 4293169.2s
 DATE: May 13, 2015 5:15 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

A1
SE
1/2 - 1 Mile
Higher

FED USGS USGS40000271494

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215415159351402		
Monloc name:	2-5435.01B		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.9010347
Longitude:	-159.5844317	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	47.00
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19760622	Welldepth:	164
Welldepth units:	ft	Wellholedepth:	164
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1976-06-08	47.00	

A2
SE
1/2 - 1 Mile
Higher

HI WELLS HI9000000000387

Wid:	2-5435-004	Island:	Kauai
Well name:	Hanapepe	Old name:	Not Reported
Yr drilled:	1973		
Driller:	Continental Drilling Hawaii, Inc		
Quad map:	5		
Long83dd:	-159.584167		
Lat83dd:	21.901111		
Gps:	0	Utm:	-1
Owner user:	County of Kauai		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	45
Well depth:	185		
Solid case:	Not Reported	Perf case:	185
Use:	Other		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QTkol		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-140
Bot solid:	Not Reported	Bot perf:	-140
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 1-1-043:000
Aqui code:	20101		
Latest hd:	Not Reported	Wcr:	07-MAY-73
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000000387

**A3
SE
1/2 - 1 Mile
Higher**

FED USGS USGS40000271493

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215415159351301		
Monloc name:	2-5435.01A -04		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.9010347
Longitude:	-159.5841539	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	47.00
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19730507	Welldepth:	185
Welldepth units:	ft	Wellholedepth:	185
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1973-05-10	47.00	

**A4
SE
1/2 - 1 Mile
Higher**

FED USGS USGS40000271492

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215415159351203		
Monloc name:	2-5435.01C		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.9010347
Longitude:	-159.583876	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	47.00
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19760506	Welldepth:	163
Welldepth units:	ft	Wellholedepth:	163
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1976-04-21	47.00	

**A5
SE
1/2 - 1 Mile
Higher**

FED USGS USGS40000271491

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215415159351104		
Monloc name:	2-5435.01D		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.9010347
Longitude:	-159.5835983	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	47.00
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	161
Construction date:	19760301	Wellholeddepth:	161
Welldepth units:	ft		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1976-05-04	47.00	

A6
SSE
1/2 - 1 Mile
Higher

FED USGS USGS40000271487

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215409159351701		
Monloc name:	2-5435-01 W25-2A HAN		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.8999236
Longitude:	-159.5849873	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	42.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19680101	Welldepth:	242
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

B7
SSE
1/2 - 1 Mile
Higher

FED USGS USGS40000271489

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215409159351703		
Monloc name:	2-5435-03 W25-2C HAN		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.8996459
Longitude:	-159.585265	Sourcemap scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	42.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19680101	Welldepth:	238
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A8
SSE
1/2 - 1 Mile
Higher

FED USGS USGS40000271488

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215409159351702		
Monloc name:	2-5435-02 W25-2B HAN		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.8999236
Longitude:	-159.5847095	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	42.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19680101	Welldepth:	240
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

B9
SSE
1/2 - 1 Mile
Higher

HI WELLS HI9000000000384

Wid:	2-5435-001	Island:	Kauai
Well name:	Port Allen 1	Old name:	Not Reported
Yr drilled:	1968		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	5		
Long83dd:	-159.585278		
Lat83dd:	21.899444		
Gps:	0	Utm:	-1
Owner user:	Citizens Utilities Co.		
Land owner:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pump insta:	Not Reported	Well type:	PER
Old number:	25-2A	Ground el:	42
Casing dia:	16	Perf case:	60
Well depth:	242	Use:	IND - Geothermal, Thermoelectric Cooling, Power De
Solid case:	48	Use year:	Not Reported
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported	Test date:	1/12/1968
Init cl:	15000	Test ddown:	3.1
Test date:	1/12/1968	Test temp:	21.9
Test ddown:	3.1	Pump gpm:	3500
Test temp:	21.9	Draft mgy:	Not Reported
Pump gpm:	3500	Max chlor:	Not Reported
Draft mgy:	Not Reported	Geology:	QTKol
Max chlor:	Not Reported	Pump yr:	1968
Geology:	QTKol	Draft yr:	Not Reported
Pump yr:	1968	Bot solid:	-6
Draft yr:	Not Reported	Spec capac:	1129
Bot solid:	-6	Pump mgd:	5
Spec capac:	1129	Draft mgd:	Not Reported
Pump mgd:	5	Pump depth:	Not Reported
Draft mgd:	Not Reported	Aqui code:	20101
Pump depth:	Not Reported	Latest hd:	Not Reported
Aqui code:	20101	Pir:	Not Reported
Latest hd:	Not Reported	Surveyor:	Not Reported
Pir:	Not Reported	T:	Not Reported
Surveyor:	Not Reported	Site id:	HI9000000000384
T:	Not Reported		

**B10
SSE
1/2 - 1 Mile
Higher**

HI WELLS HI9000000000385

Wid:	2-5435-002	Island:	Kauai
Well name:	Port Allen 2	Old name:	Not Reported
Yr drilled:	1968		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	5		
Long83dd:	-159.585278		
Lat83dd:	21.899444		
Gps:	0	Utm:	-1
Owner user:	Citizens Utilities Co.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	25-2B	Well type:	PER
Casing dia:	16	Ground el:	42
Well depth:	240	Perf case:	60
Solid case:	48	Use:	IND - Geothermal, Thermoelectric Cooling, Power De
Use:	IND - Geothermal, Thermoelectric Cooling, Power De	Use year:	Not Reported
Use year:	Not Reported	Init head:	Not Reported
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported	Test date:	2/23/1968
Init cl:	15000	Test gpm:	4000
Test date:	2/23/1968		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Test ddown:	4.2	Test chlor:	15000
Test temp:	21.9	Test unit:	C
Pump gpm:	3500		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QTKol		
Pump yr:	1968		
Draft yr:	Not Reported	Bot hole:	-198
Bot solid:	-6	Bot perf:	-18
Spec capac:	976		
Pump mgd:	5		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(4) 2-1-003:012
Aqui code:	20101		
Latest hd:	Not Reported	Wcr:	15-FEB-68
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000000385

**B11
SSE
1/2 - 1 Mile
Higher**

HI WELLS HI9000000000386

Wid:	2-5435-003	Island:	Kauai
Well name:	Port Allen 3	Old name:	Not Reported
Yr drilled:	1968		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	5		
Long83dd:	-159.585278		
Lat83dd:	21.899444		
Gps:	0	Utm:	-1
Owner user:	Citizens Utilities Co.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	25-2C	Well type:	PER
Casing dia:	16	Ground el:	42
Well depth:	238		
Solid case:	48	Perf case:	60
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	15000		
Test date:	3/16/1968	Test gpm:	4000
Test ddown:	12.6	Test chlor:	15000
Test temp:	21.9	Test unit:	C
Pump gpm:	3500		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QTKol		
Pump yr:	1968		
Draft yr:	Not Reported	Bot hole:	-196
Bot solid:	-6	Bot perf:	-18
Spec capac:	317		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pump mgd:	5	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(4) 2-1-003:012
Pump depth:	Not Reported	Wcr:	14-MAR-68
Aqui code:	20101	Site id:	HI9000000000386
Latest hd:	Not Reported		
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported		

**12
SE
1/2 - 1 Mile
Higher**

HI WELLS HI9000000000388

Wid:	2-5435-005	Island:	Kauai
Well name:	Port Allen 4	Old name:	Not Reported
Yr drilled:	1990		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	5		
Long83dd:	-159.583889		
Lat83dd:	21.899722		
Gps:	0	Utm:	-1
Owner user:	Citizens Utilities Co.		
Land owner:	Not Reported		
Pump insta:	Roscoe Moss Hawaii Inc		
Old number:	Not Reported	Well type:	PER
Casing dia:	20	Ground el:	41
Well depth:	240		
Solid case:	76	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	1	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	11/26/1990	Test gpm:	3900
Test ddown:	11	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	3750		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QTkol		
Pump yr:	1991		
Draft yr:	Not Reported	Bot hole:	-199
Bot solid:	-35	Bot perf:	Not Reported
Spec capac:	355		
Pump mgd:	5.36		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(4) 2-1-003:004
Aqui code:	20101	Wcr:	27-NOV-90
Latest hd:	Not Reported		
Pir:	1/1/1991		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000000388

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B13
SSE
1/2 - 1 Mile
Higher

FED USGS USGS40000271490

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-215410159351501		
Monloc name:	2-5435.02A		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20070000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.899368
Longitude:	-159.5841539	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	42.00
Vert measure units:	feet	Vertacc measure val:	4
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

14
ENE
1/2 - 1 Mile
Higher

HI WELLS HI900000000404

Wid:	2-5534-002	Island:	Kauai
Well name:	Hanapepe Pump 1	Old name:	Not Reported
Yr drilled:	1899		
Driller:	Not Reported		
Quad map:	5		
Long83dd:	-159.578056		
Lat83dd:	21.916111		
Gps:	0	Utm:	-1
Owner user:	McBryde Sugar Co. Ltd.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	6 SH	Well type:	SHF
Casing dia:	Not Reported	Ground el:	21
Well depth:	40		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	3470	Head feet:	Not Reported
Draft mgy:	Not Reported	Min chlor:	Not Reported
Max chlor:	Not Reported		
Geology:	Twnl		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-19
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	4.96		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(4) 2-1-001:010
Aqui code:	20304		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI900000000404

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for KAUAI County: 3

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96716

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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Appendix C
Endangered Species Act Section 7
Consultation Documentation



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division 12300 West Dakota Avenue

Suite 380

Lakewood, CO 80228

720-963-3647

michael.will@dot.gov

November 21, 2014

In Reply Refer To:
HFPM-16

Ms. Michelle Bogardus
U.S. Department of the Interior
Fish & Wildlife Service
Pacific Islands Fish & Wildlife Office
300 Ala Moana Blvd, Room 3-122
Honolulu, HI 96850

Subject: Notification of Intent to Construct the Hawaii Bridge Program
Request for Species and Critical Habitat List under Section 7, Endangered Species Act

Dear Ms. Michelle Bogardus:

The Federal Highway Administration (FHWA), Central Federal Lands Highway Division (CFLHD), in cooperation with the Hawaii Department of Transportation (HDOT), is planning to undertake environmental studies for the Hawaii Bridge Program. The Program includes work on 12 bridges at 10 locations on the islands of Oahu (4 locations total: 4 locations with 1 bridge each), Kauai (4 locations total: 3 locations with 1 bridge each and 1 location with 3 bridges), and Hawaii (2 locations total: 2 locations with 1 bridge each). Attachment 1, Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu, includes location maps, and project descriptions, for each of the 10 locations.

In accordance with Section 7 of the Endangered Species Act, FHWA-CFLHD and HDOT are requesting a list of threatened, endangered, proposed, and candidate plant and animal species, and critical habitats in the vicinity of each of the bridge projects to enable an appropriate determination for these projects.

Furthermore, to assist us with our assessment, we also respectfully ask for input the USFWS may have in relation to specific avoidance and minimization measures that should be considered for each project. Your response within 30 calendar days of receipt of this letter, as outlined in the ESA Consultation Handbook, would be appreciated.

Should you have any questions, please contact Nicole Winterton, Environmental Protection Specialist, at (720) 963-3689 or by e-mail at Nicole.Winterton@dot.gov.

Sincerely,

J. Michael Will, P.E.

Program Engineering Manager

Enclosure:

Attachment 1: Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu

cc: Nicole Winterton/FHWA-CFLHD
Paul Luersen/CH2M HILL
Elizabeth Cutler/CH2M HILL



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
720-963-3647
michael.will@dot.gov

November 21, 2014

In Reply Refer To:
HFPM-16

Mr. Frazer McGilvray
Administrator
Department of Aquatic Resources
1151 Punchbowl St. Room 330
Honolulu, HI 96813

Subject: Notification of Intent to Construct the Hawaii Bridge Program
Request for Information

Dear Mr. Frazer McGilvray:

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in cooperation with the Hawaii Department of Transportation (HDOT), is planning to undertake environmental studies for the Hawaii Bridge Program. The Program includes work on 12 bridges at 10 locations on the islands of Oahu (4 locations total: 4 locations with 1 bridge each), Kauai (4 locations total: 3 locations with 1 bridge each and 1 location with 3 bridges), and Hawaii (2 locations total: 2 locations with 1 bridge each). Attachment 1, Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu, includes location maps, and project descriptions, for each of the 10 locations.

We are writing to request information you may have regarding known presence of listed species and designated critical habitat in the vicinity of each of the bridge projects to appropriately assess potential impacts for these projects.

Furthermore, to assist us with our assessment, we also respectfully ask for DAR's opinion on the likely impact of each of the bridge projects based on the potential issues of the location considering the proposed construction activities and schedule.

Your response within 30 calendar days of receipt of this letter would be appreciated.

Should you have any questions, please contact Nicole Winterton, Environmental Protection Specialist, at (720) 963-3689 or by e-mail at Nicole.Winterton@dot.gov.

Sincerely,

J. Michael Will, P.E.
Program Engineering Manager

Enclosure:

Attachment 1: Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu

Cc: Glenn Higashi/DAR
Nicole Winterton/FHWA-CFLHD
Paul Luersen/CH2M HILL
Elizabeth Cutler/CH2M HILL



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
720-963-3647
michael.will@dot.gov

November 21, 2014

In Reply Refer To:
HFPM-16

Ms. Lisa Hadway
Administrator
Division of Forestry and Wildlife
Kalanimoku Building
1151 Punchbowl St. Room 325
Honolulu, HI 96813

Subject: Notification of Intent to Construct the Hawaii Bridge Program
Request for Information

Dear Ms. Lisa Hadway:

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in cooperation with the Hawaii Department of Transportation (HDOT), is planning to undertake environmental studies for the Hawaii Bridge Program. The Program includes work on 12 bridges at 10 locations on the islands of Oahu (4 locations total: 4 locations with 1 bridge each), Kauai (4 locations total: 3 locations with 1 bridge each and 1 location with 3 bridges), and Hawaii (2 locations total: 2 locations with 1 bridge each). Attachment 1, Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu, includes location maps, and project descriptions, for each of the 10 locations.

We are writing to request information you may have regarding known presence of listed species and designated critical habitat in the vicinity of the each of the bridge projects to appropriately assess potential impacts for these projects. Furthermore, to assist us with our assessment, we also respectfully ask for input the DOFAW may have in relation to specific avoidance and minimization measures that should be considered for each project

To assist us with our assessment, we also respectfully ask for DOFAW's opinion on the likely impact of each of the bridge projects based on the potential issues of the location considering the proposed construction activities and schedule.

Your response within 30 calendar days of receipt of this letter would be appreciated.

Should you have any questions, please contact Nicole Winterton, Environmental Protection Specialist, at (720) 963-3689 or by e-mail at Nicole.Winterton@dot.gov.

Sincerely,


J. Michael Will, P.E.
Program Engineering Manager

Enclosure:

Attachment 1: Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu

Cc: Nicole Winterton/FHWA-CFLHD
Paul Luersen/CH2M HILL
Elizabeth Cutler/CH2M HILL



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division 12300 West Dakota Avenue

Suite 380
Lakewood, CO 80228
720-963-3647
michael.will@dot.gov

November 21, 2014

In Reply Refer To:
HFPM-16

Mr. Aaron Nadig
U.S. Department of the Interior
Fish & Wildlife Service
Pacific Islands Fish & Wildlife Office
300 Ala Moana Blvd, Room 3-122
Honolulu, HI 96850

Subject: Notification of Intent to Construct the Hawaii Bridge Program
Request for Species and Critical Habitat List under Section 7, Endangered Species Act

Dear Mr. Aaron Nadig:

The Federal Highway Administration (FHWA), Central Federal Lands Highway Division (CFLHD), in cooperation with the Hawaii Department of Transportation (HDOT), is planning to undertake environmental studies for the Hawaii Bridge Program. The Program includes work on 12 bridges at 10 locations on the islands of Oahu (4 locations total: 4 locations with 1 bridge each), Kauai (4 locations total: 3 locations with 1 bridge each and 1 location with 3 bridges), and Hawaii (2 locations total: 2 locations with 1 bridge each). Attachment 1, Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu, includes location maps, and project descriptions, for each of the 10 locations.

In accordance with Section 7 of the Endangered Species Act, FHWA-CFLHD and HDOT are requesting a list of threatened, endangered, proposed, and candidate plant and animal species, and critical habitats in the vicinity of each of the bridge projects to enable an appropriate determination for these projects.

Furthermore, to assist us with our assessment, we also respectfully ask for input the USFWS may have in relation to specific avoidance and minimization measures that should be considered for each project. Your response within 30 calendar days of receipt of this letter, as outlined in the ESA Consultation Handbook, would be appreciated.

Should you have any questions, please contact Nicole Winterton, Environmental Protection Specialist, at (720) 963-3689 or by e-mail at Nicole.Winterton@dot.gov.

Sincerely,

J. Michael Will, P.E.

Program Engineering Manager

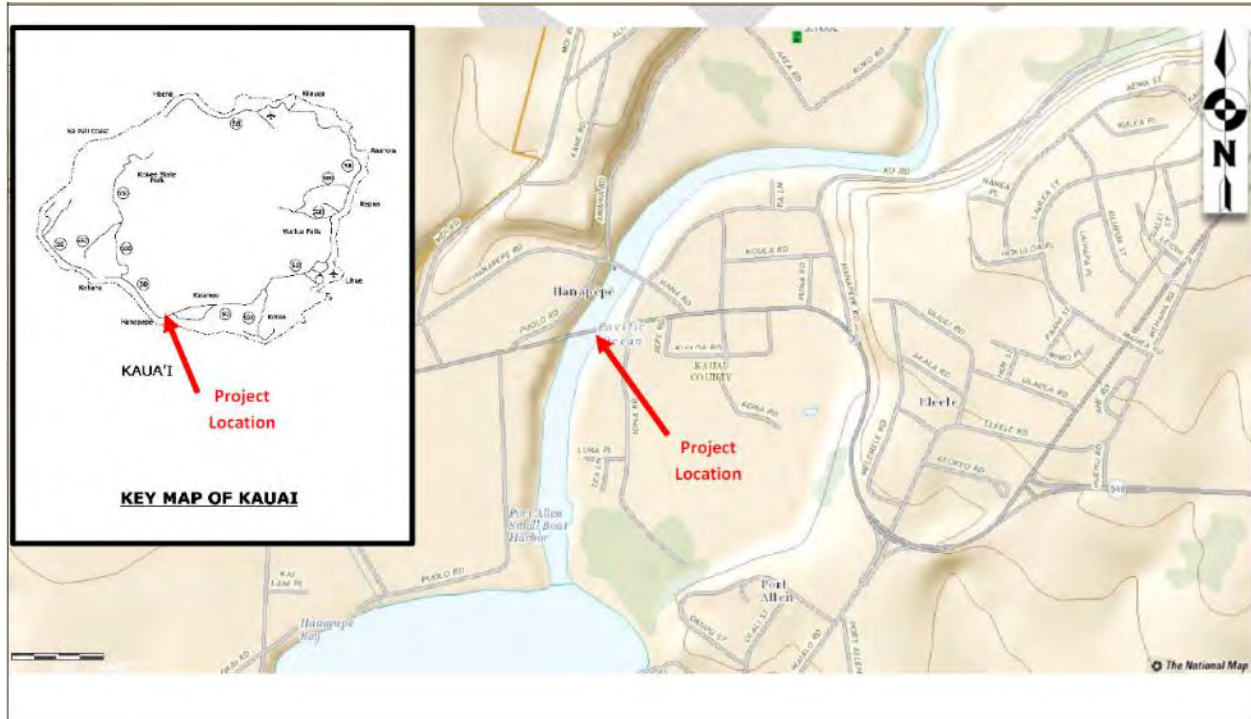
Enclosure:

Attachment 1: Hawaii Bridges Program Summary Map Set - Hawaii, Kauai, and Oahu

cc: Nicole Winterton/FHWA-CFLHD
Paul Luersen/CH2M HILL
Elizabeth Cutler/CH2M HILL

K – Hanapepe

The proposed project is located along Kaunualii Highway (Route 50), the coastal perimeter road serving the west side. The subject bridge crosses the Hanapepe River near Hanapepe Bay. The project would improve the safety and reliability of the Hanapepe Bridge, through rehabilitation or replacement, addressing bridge width, load capacity, bridge railing and transitions, bridge approaches and to mitigate the effects of scour.



K – Hanapepe Bridge – Photos





United States Department of the Interior



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

In Reply Refer To:
2015-SL-0081

J. Michael Will
U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 380
Lakewood, CO 80228

DEC 22 2014

Subject: Species List for Hawaii Bridges Program, Hawaii, Kauai, and Oahu

Dear Mr. J. Michael Will:

The U.S. Fish and Wildlife Service (Service) received your letter, dated November 21, 2014, requesting a list of federally threatened and endangered species, candidate species, plants and animals of special concern, and critical habitats in the vicinity of the proposed bridge projects. The Federal Highways Administration (FHWA), Central Federal Lands Highway Division (CFLHD), in cooperation with the State of Hawaii Department of Transportation (HDOT), is planning to conduct environmental studies for the proposed rehabilitation or replacement of 12 bridges at 10 locations on the islands of Hawaii, Kauai, and Oahu to improve the safety and reliability of the bridges.

On the island of Hawaii, the Ninole Bridge located along Mamalahoa Highway (Route 11) at mile post 56.7 would be rehabilitated or replaced, addressing bridge width, load capacity, railing, transitions, and approaches. The Hilea Bridge located on Mamalahoa Highway (Route 11) at mile post 57.7 would be rehabilitated or replaced, addressing bridge width, load capacity, railing, and transitions.

On the island of Kauai, Bridge 7E located along Kaumualii Highway (Route 50), approximately 800 feet west of Maluhia Road intersection, would be rehabilitated or replaced, addressing bridge width, load capacity, railing, and transitions. Hanapepe Bridge located on Kaumualii Highway (Route 50) in Hanapepe town would be rehabilitated or replaced, addressing bridge width, load capacity, railing, transitions, approaches, and effects of scour. Kapaa Stream Bridge located on Kuhio Highway (Route 56) near mile post 10 would be rehabilitated or replaced, addressing bridge width, load capacity, railing, transitions, and approaches. This project would also involve improvements to the highway intersection at Mailihuna Road, including roadway

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widening, lighting, signing, pavement markings, drainage, and other improvements such as installation of traffic signals. The three Wainiha Stream bridges located on Kuhio Highway (Route 560) at mile post 6.4 and 6.7 would be replaced. Additionally, three load-restricted bridges which cross Waioli, Waipa, and Waikoko streams, located at mile posts 3.4, 3.9, and 4.2, will be studied to determine loads and alternatives such as temporary bridges or supports necessary to provide construction access to the Wainiha Stream bridges.

On the island of Oahu, the Halona Bridge located on Halona Street, which crosses Kapalama Canal, would be rehabilitated or replaced, addressing bridge width, load capacity, railing, transitions, approaches, and pedestrian traffic. The Kawela Bridge located on Kamehameha Highway (Route 83) at mile post 11.4 would be replaced, addressing bridge width, load capacity, railing, transitions, and approaches. The Nanahu Bridge located on Kamehameha Highway (Route 83) at mile post 13.4 would be rehabilitated or replaced, addressing bridge width, load capacity, railing, transitions, and approaches. The Roosevelt Bridge located on Kamehameha Highway (Route 99) at mile post 14.4 would be rehabilitated, addressing bridge load capacity, railing, and transitions.

The Service offers the following comments to assist you in your planning process so that impacts to trust resources can be avoided through site preparation, construction, and operation. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C 1531 *et seq.*).

Our databases, including data compiled by the Hawaii Biodiversity and Mapping Program (HBMP), indicate the following species are known to occur or transit through the vicinity of the proposed project areas at Ninole Bridge and Hilea Bridge on the island of Hawaii: the federally endangered Blackburn's sphinx moth (*Manduca blackburni*, BSM), Hawaiian goose (*Branta sandvicensis*), Hawaiian hawk (*Buteo solitarius*), Hawaiian hoary bat (*Lasiurus cinereus semotus*), and Hawaiian petrel (*Pterodroma sandwichensis*); and the threatened Newell's shearwater (*Puffinus auricularis newelli*). There is no designated critical habitat in the vicinity of the proposed project areas on the island of Hawaii.

Our databases, including data compiled by the HBMP, indicate the following species are known to occur or transit through the proposed project areas at Bridge 7E, Hanapepe Bridge, Kapaa Stream Bridge, and the Wainiha Stream bridges on the island of Kauai: the endangered Hawaiian black-necked stilt (*Himantopus mexicanus knudseni*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian goose, Hawaiian hoary bat, and Hawaiian petrel; the threatened Newell's shearwater; and a candidate for listing band-rumped storm-petrel (*Oceanodroma castro*). Additionally, our databases indicate the threatened green sea turtle (*Chelonia mydas*) is known to occur in the vicinity of the proposed project areas at the Kapaa Stream Bridge and the Wainiha Stream bridges. There is no designated critical habitat in the vicinity of the proposed project areas on the island of Kauai.

The endangered Hawaiian monk seal (*Monachus schauinslandi*) may use beach habitat in the vicinity of the proposed project at the Kapaa Stream Bridge and the Wainiha Stream bridges. The National Marine Fisheries Service (NMFS) is the Federal agency that consults on potential impacts to monk seals, both in their on-shore and ocean habitats. Therefore, we did not review

the proposed project for potential project impacts to monk seals. We recommend that you contact NMFS regarding the presence of monk seals in the area and potential impacts to the species from the project.

Our databases, including data compiled by the HBMP, indicate the following species are known to occur or transit through the proposed project areas at Kawela Bridge, Nanahu Bridge, and Roosevelt Bridge on the island of Oahu: the endangered Hawaiian black-necked stilt, Hawaiian moorhen, Hawaiian coot, Hawaiian duck, Hawaiian goose, Hawaiian hoary bat, and Hawaiian petrel; and the threatened Newell's shearwater. Hawaiian geese recently arrived on Oahu. A pair was first observed in early January 2014 at the First Wind Kawailoa wind farm facility. They have successfully nested, fledging two goslings at the James Campbell National Wildlife Refuge (NWR) near the town of Kahuku. The pair, originally from Kauai, was translocated to Hilo, Hawaii in February 2012, by the State of Hawaii Division of Forestry and Wildlife, and were apparently attempting to return to Kauai when they arrived on Oahu. As of December 2014 the four birds have been seen at the Mililani Agricultural Park, Mililani golf course, and James Campbell NWR.

Additionally, our databases indicate the endangered Hawaiian hoary bat is known to occur or transit through the proposed project area at Halona Bridge on the island of Oahu. There is no designated critical habitat in the vicinity of the proposed project areas on the island of Oahu.

The Service recommends the following measures to avoid and minimize project impacts to the above listed species.

Island of Hawaii

Blackburn's sphinx moth

Adult Blackburn's sphinx moths feed on nectar from native plants including beach morning glory (*Ipomoea pescaprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*). BSM larvae feed upon native tree tobacco (*Nicotiana glauca*), which occupies disturbed areas such as open fields and roadway margins, and the native aiea (*Nothocestrum sp.*), which is found in dry to moist forests at elevations ranging from 1,500 to 5,000 feet. We recommend that a qualified biologist survey the project area for the presence of larval host plants. If larval host plants are detected and will be affected during project construction or operation, we recommend that the biologist document 1) general larval plant density; 2) proximity of larval plants to project sites; 3) average height of the larval plants; 4) signs of larval feeding damage on leaves; and 5) presence of BSM larvae on leaves. We recommend that surveys be conducted for BSM and potential host plants approximately four to eight weeks following significant rainfall and during the wettest portion of the year (usually November-April).

Hawaiian Goose

In order to avoid impacts to Hawaiian geese, we recommend a biologist familiar with the nesting behavior of the Hawaiian goose survey the area prior to the initiation of any work, or after any subsequent delay in work of three or more days (during which birds may attempt nesting). If a nest is discovered, work should cease immediately and our office should be contacted for further guidance. Furthermore, all on-site project personnel should be apprised that Hawaiian geese

may be in the vicinity of the project at any time during the year. If a Hawaiian goose (or geese) appears within 100 feet of ongoing work, all activity should be temporarily suspended until the Hawaiian goose (or geese) leaves the area of its own accord.

Hawaiian Hawk

Loud, irregular and unpredictable activities, such as using heavy equipment or building a structure, near an endangered Hawaiian hawk nest may cause nest failure. Harassment of Hawaiian hawk nesting sites can alter feeding and breeding patterns or result in nest or chick abandonment. Nest disturbance can also increase exposure of chicks and juveniles to inclement weather or predators. To avoid impacts to Hawaiian hawks, we recommend avoiding brush and tree clearing during their breeding season (March through September). If you must clear the property during the Hawaiian hawk breeding season, we recommend a nest search of the proposed construction site and surrounding area be conducted by a qualified ornithologist immediately prior to start of construction activities. Surveys should ensure that construction activity will not occur within 1,600 feet of any Hawaiian hawk nest.

Hawaiian Hoary Bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, will leave young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the breeding season, there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area.

Seabirds

Seabirds, including the Newell's shearwater, Hawaiian petrel and band-rumped storm petrel, fly at night and are attracted to artificially-lighted areas resulting in disorientation and subsequent fallout due to exhaustion. Seabirds are also susceptible to collision with objects that protrude above the vegetation layer, such as utility lines, guy-wires, and communication towers. Additionally, once grounded, they are vulnerable to predators and are often struck by vehicles along roadways. To reduce potential impacts to seabirds, we recommend the following minimization measures be incorporated into your project description:

- Construction activities should only occur during daylight hours. Any increase in the use of nighttime lighting, particularly during peak fallout period (September 15 through December 15), could result in additional seabird injury or mortality.
- If lights cannot be eliminated due to safety or security concerns, then they should be positioned low to the ground, be motion-triggered, and be shielded and/or full cut-off. Effective light shields should be completely opaque, sufficiently large, and positioned so that the bulb is only visible from below.

Island of Kauai

Please refer to “Hawaiian goose”, “Hawaiian hoary bat”, and “Seabirds” under the Island of Hawaii (above) for recommended measures to avoid and minimize impacts to the Hawaiian goose, Hawaiian hoary bat, and Hawaiian petrel, Newell’s shearwater, and band-rumped storm petrel.

Hawaiian Waterbirds

The Hawaiian stilt, moorhen, coot, and duck are hereafter collectively referred to as “Hawaiian waterbirds.” Our records indicate there is a high probability that Hawaiian waterbirds may occur in the vicinity of the proposed project. We recommend you incorporate the following measures into your project description to avoid and minimize impacts to Hawaiian waterbirds:

- A biological monitor should conduct Hawaiian waterbird and nest surveys at the proposed project site prior to project initiation.
- Any documented nests or broods within the project vicinity should be reported to the Service within 48 hours.
- A 100-foot buffer should be established and maintained around all active nests and/or broods until the chicks/ducklings have fledged. No potentially disruptive activities or habitat alteration should occur within this buffer.
- The Service should be notified immediately prior to project initiation and provided with the results of pre-construction Hawaiian waterbird surveys.
- A biological monitor(s) should be present on the project site during all construction or earth moving activities to ensure that Hawaiian waterbirds and nests are not adversely impacted.
- If a listed Hawaiian waterbird is observed within the project site, or flies into the site while activities are occurring, the biological monitor should halt all activities within 100 feet of the individual(s). Work should not resume until the Hawaiian waterbird(s) leave the area on their own accord.
- A post-construction report should be submitted to the Service with 30 days of the completion of the project. The report should include the results of Hawaiian waterbird surveys, the location and outcome of documented nests, and any other relevant information.

Sea Turtles

Artificial lighting can disorient adult sea turtles and hatchlings by affecting their ability to find the ocean. To minimize potential impacts to sea turtles that may utilize beaches in the project vicinity, no light from the proposed project should be visible from the beach. We recommend installation of shielded lighting at construction sites near beaches and around shoreline developments. Shielded lights reduce the direct and ambient lighting of beach habitats within and adjacent to the project site. Effective light shields should be completely opaque, sufficiently large, and positioned so that light from the shielded source does not reach the beach. Projects should also be designed to minimize adverse impacts to basking or nesting sea turtles from off-leash pets, mammalian predators, and human disturbance.

Island of Oahu

Please refer to “Hawaiian goose”, “Hawaiian hoary bat”, “Seabirds”, and “Hawaiian waterbirds” (above) for recommended measures to avoid and minimize impacts to the Hawaiian goose, Hawaiian hoary bat, Hawaiian petrel, Newell’s shearwater, Hawaiian black-necked stilt, Hawaiian moorhen, Hawaiian coot, and Hawaiian duck.

Because the proposed activities may cause soil erosion and sedimentation in sensitive aquatic habitats, we are attaching the Service’s recommended Best Management Practices regarding sedimentation and erosion in aquatic environments. We encourage you to incorporate the relevant practices into your project design. In addition to the guidance provided in this letter, the Service anticipates responding to the U.S. Army Corps of Engineers inter-agency notification process and providing further recommendations pursuant to the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended (16 U.S.C. 661 *et seq.*; 48 Stat. 401); and the Clean Water Act (CWA), as amended (33 U.S.C. 1251 *et seq.*; 62 Stat. 1155).

If additional information becomes available, or it is determined that the proposed project may affect federally listed species, we recommend you coordinate with our office early in the planning process so that we may further assist you with Endangered Species Act compliance. We appreciate your efforts to conserve endangered species. Please contact Adam Griesemer, Endangered Species Biologist (phone: 808-285-8261, email: adam_griesemer@fws.gov) should you have any questions pertaining to this response.

Sincerely,



Aaron Nadig
Assistant Field Supervisor:
Oahu, Kauai, NWHI, Am.Samoa

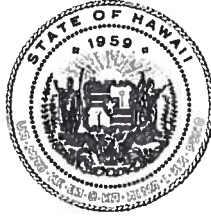
Cc: Paul Luersen, CH2M HILL

U.S. Fish and Wildlife Service Recommended Standard Best Management Practices

The U.S. Fish and Wildlife Service recommends that the measures below be incorporated into projects to minimize the degradation of water quality and minimize the impacts to fish and wildlife resources.

1. Turbidity and siltation from project-related work shall be minimized and contained within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.
2. Dredging/filling in the marine environment shall be scheduled to avoid coral spawning and recruitment periods and sea turtle nesting and hatching periods.
3. Dredging and filling in the marine/aquatic environment shall be designed to avoid or minimize the loss special aquatic site habitat (beaches, coral reefs, wetlands, etc.) and the function of such habitat shall be replaced.
4. All project-related materials and equipment (dredges, barges, backhoes, etc.) to be placed in the water shall be cleaned of pollutants prior to use.
5. No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.
6. All debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site.
7. No contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of adjacent habitats (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests, etc.) shall result from project-related activities. This shall be accomplished by implementing a litter-control plan and developing a Hazard Analysis and Critical Control Point Plan (HACCP – see <http://www.haccp-nrm.org/Wizard/default.asp>) to prevent attraction and introduction of non-native species.
8. Fueling of project-related vehicles and equipment should take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases.
9. Any under-layer fills used in the project shall be protected from erosion with stones (or core-loc units) as soon after placement as practicable.
10. Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

CARTY S. CHANG
ACTING CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

FIRST DEPUTY

WILLIAM M. TAM
INTERIM DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONSERVATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 9, 2015

U. S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
Attn: J. Michael Will, Program Engineering Manager
12300 West Dakota Avenue, Suite 330
Lakewood, CO 80228

via email: michael.will@dot.gov

Dear Mr. Will,

SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information, HFPM-16

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments sent to you dated December 18, 2014, enclosed are additional comments from the Division of Aquatic Resources on the subject matter. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)

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



December 2, 2014

DAR # 5037

MEMORANDUM

TO: **DLNR Agency:**

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands

- Land Division – Oahu District
- Land Division – Kauai District
- Land Division – Maui District
- Land Division – Hawaii District
- Historic Preservation

JK ✓
GH ✓

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information

LOCATION: Various (see cover letter) including all Districts except Maui

APPLICANT: Federal Highway Administration, Central Federal Lands Highway Division, in cooperation with the Hawaii Department of Transportation

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by **December 18, 2014**. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: William J. Aila Jr

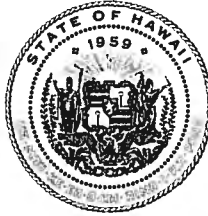
Print Name: William J. Aila Jr

Date: 12/23/14

2015 JAN -7 PM 2:23

RECEIVED
LAND DIVISION

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

JESSE K. SOUKI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Date: 12/17/14
DAR # 5037

MEMORANDUM

TO: William Aila Jr., Chairperson *WJA*
DATE: 12/18/14
FROM: Glenn Higashi, Aquatic Biologist *GKH*
SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information

Comment	Date Request	Receipt	Referral	Due Date
	12/2/14	12/3/14	12/4/12	12/18/14

Requested by: Russell Y. Tsuji, Administrator
Land Division

Summary of Proposed Project

Title: Notification of intent to Construct the Hawaii Bridge Program - Request for information

Project by: Federal Highway Administration, Central Federal Lands Highway Division, in cooperation with the Hawaii Department of Transportation

Location: Hawaii, Kauai, and Oahu

Brief Description:

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in cooperation with the Hawaii Department of Transportation (HDOT), is planning to undertake environmental studies for the Hawaii Bridge Program. The program includes work on 12 bridges at 10 locations on the islands of Oahu (4 locations with 1 bridge each - Halona, Kawela, Nanahu, and Kipapa (Roosevelt bridge)); Kauai (4 locations with 3 locations with 1 bridge each and 1 location with 3 bridges - Bridge No. 7E, Hanapepe, Kapaa, and Wainiha; respectively); and Hawaii (2 locations with 1 bridge each - Ninole, Hilea).

The FHWA is requesting information regarding the known presence of listed species and designated critical habitat in the vicinity of each of the bridge projects to appropriately assess potential impacts for these projects.

They are also requesting DAR's opinion on the likely impact of each of the bridge projects based on the potential issues of the location considering the proposed construction activities and schedule.

All the bridge projects would improve the safety and reliability of the existing bridges, through rehabilitation or replacement, addressing bridge width, load capacity, bridge railing and transitions, bridge approaches. Hanapepe bridge project would also include mitigation to the effects of scour. The project for Wainiha would involve the replacement of the 3 existing temporary bridges.

Comments:

For the aquatic biological resources there are no listed aquatic species and no known designated critical habitat in the vicinity of each of the bridge projects that may impose potential impacts for these projects.

The proposed replacement bridges are not expected to have any significant impact on the aquatic resource values in these areas. However, the stream channel should be maintained to provide a continuous connection to the ocean during stream flows resulting from heavy rains to accommodate the upstream migration of postlarval native Hawaiian stream animals and allow the downstream passage of larval drift to the ocean should recruitment or spawning occur.

Mitigative measures should be implemented during the rehabilitation or construction of the replacement bridges and to minimize the potential for erosion, siltation and pollution of the aquatic environment.

- 1) lands denuded of vegetation should be planted or covered as quickly as possible to prevent erosion and the vegetation cleared along stream banks should be removed and prevented from falling into the stream/estuary environment;
- 2) scheduling site work (particularly the excavation and demolition of existing bridge abutments, piers, footings and supports, the construction of bridge foundations structures, and stream bank hardening) during periods of minimal rainfall;
- 3) prevent construction materials, petroleum products, debris and landscaping products from falling, blowing or leaching into the aquatic environment during the rehabilitation /replacement of the bridges and their associated improvements.

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plans, DAR requests the opportunity to review and comment on those changes.



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

February 23, 2016

In Reply Refer To:
HFPM-16

Mary Abrams, Field Supervisor
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

Re: Section 7 Consultation for Proposed Hanapepe Bridge Replacement Project, Kaunualii Highway (Route 50), Kauai Island, Hawaii

Dear Ms. Abrams:

The Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), in cooperation with the State of Hawaii Department of Transportation (HDOT) is proposing to replace the Hanapepe Bridge on Kaunualii Highway (Route 50), in the Waimea District on Kauai, Hawaii. The purpose of the project is to improve Hanapepe Bridge and its approaches to maintain the river crossing as a safe and functional component of the regional transportation system.

The enclosed biological assessment (BA) addresses potential project impacts on federally listed threatened and endangered species, including three seabirds (the endangered Hawaiian petrel [*Pterodroma sandwichensis*], the threatened Newell's shearwater [*Puffinus auricularis newelli*], and the proposed endangered band-rumped storm petrel [*Oceanodroma castro*]), four waterbirds (the endangered Hawaiian coot [*Fulica alai*], the endangered Hawaiian gallinule [*Gallinula chloropus sandvicensis*], the endangered Hawaiian stilt [*Himantopus mexicanus knudseni*], and the endangered Hawaiian duck [*Anas wyvilliana*]), the endangered Hawaiian goose (*Branta sandvicensis*), and the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*). The BA concludes the following:

- The Hawaiian petrel, Newell's shearwater and band-rumped storm-petrel are unlikely to occur in the action area because suitable habitat does not exist; however, these seabirds may be attracted to construction lights as they fly over the action area. The proposed project *may affect, but is not likely to adversely affect* the Hawaiian petrel and Newell's shearwater. The proposed project *is not likely to jeopardize the continued existence* of the band-rumped storm petrel, which is proposed for listing.
- The Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, and Hawaiian duck may occur in the action area, as there is suitable habitat in and around the action area. However, impacts would be discountable or insignificant, such that the project *may affect, but is not likely to adversely affect* these species.
- The Hawaiian goose may occur in the action area, as there is suitable foraging habitat. However, impacts would be discountable, such that the project *may affect, but is not likely to adversely affect the Hawaiian goose*.

- The action area contains habitat that could support roosting and foraging for the Hawaiian hoary bat. However, the timing of construction and minimal construction footprint will preclude any major or long-term effects, such that the project *may affect, but is not likely to adversely affect* the Hawaiian hoary bat.

To comply with Section 7(a) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(ESA), FHWA is requesting informal consultation with the U.S. Fish and Wildlife Service on the Hawaiian petrel, Newell's shearwater, Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, Hawaiian duck, Hawaiian goose, and Hawaiian hoary bat, as well as the proposed endangered band-rumped storm petrel.

In parallel, FHWA is also requesting consultation with the National Marine Fisheries Service for several marine listed species. As detailed in the BA, these include the endangered Hawaiian monk seal (*Neomonachus schauinslandi*), and two sea turtles (the threatened green sea turtle [*Chelonia mydas*] and the endangered Hawksbill sea turtle [*Eretmochelys imbricate*]).

If you require further information or have questions, please contact Nicole Winterton, Environmental Protection Specialist, by email at Nicole.winterton@dot.gov or by phone at (720) 963-3689. We appreciate your assistance with this project.

Sincerely,



Michael Will
Project Manager

Enclosure:

Biological Assessment for the Proposed Hanapepe Bridge Project, Kauai, Hawaii

cc:

Michael Tosatto, National Marine Fisheries Service

David Smith, State of Hawaii Division of Forestry and Wildlife

Dr. Bruce Anderson, State of Hawaii Division of Aquatic Resources



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

February 23, 2016

In Reply Refer To:
HFPM-16

Michael Tosatto, Administrator
National Marine Fisheries Service
1845 Wasp Boulevard, Building 176
Honolulu, HI 96818

Re: Section 7 Consultation for Proposed Hanapepe Bridge Replacement Project, Kaunualii Highway (Route 50), Kauai Island, Hawaii

Dear Mr. Tosatto:

The Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), in cooperation with the State of Hawaii Department of Transportation (HDOT) is proposing to replace the Hanapepe Bridge on Kaunualii Highway (Route 50), in the Waimea District on Kauai, Hawaii. The purpose of the project is to improve Hanapepe Bridge and its approaches to maintain the river crossing as a safe and functional component of the regional transportation system.

The enclosed biological assessment (BA) addresses potential project impacts on federally listed threatened and endangered species, including the endangered Hawaiian monk seal (*Neomonachus schauinslandi*) and two sea turtles (the threatened green sea turtle [*Chelonia mydas*] and the endangered Hawksbill sea turtle [*Eretmochelys imbricate*]). The BA concludes the following:

- The action area is not ideal for Hawaiian monk seal basking or pupping, but suitable foraging habitat is present in the nearshore marine waters and riverine habitat of the action area. However, impacts on the Hawaiian monk seal would be discountable or insignificant, such that the proposed action *may affect, but is not likely to adversely affect* individuals or populations of the species.
- Sea turtle species could use Hanapepe River habitat for foraging and as protection from predators. Because impacts to these species would be discountable or insignificant, the proposed action *may affect, but is not likely to adversely affect* the green sea turtle and Hawksbill sea turtle.

To comply with Section 7(a) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (ESA), FHWA is requesting informal consultation with National Marine Fisheries Service on the Hawaiian monk seal, green sea turtle, and Hawksbill sea turtle.

In parallel, FHWA is also requesting consultation with U.S. Fish and Wildlife Service for several non-marine listed species. As detailed in the BA, these include three seabirds (the endangered Hawaiian petrel [*Pterodroma sandwichensis*], the threatened Newell's shearwater [*Puffinus auricularis newelli*], and the proposed endangered band-rumped storm petrel [*Oceanodroma castro*]), four waterbirds (the endangered Hawaiian coot [*Fulica alai*], the endangered Hawaiian gallinule [*Gallinula chloropus sandvicensis*], the endangered Hawaiian stilt [*Himantopus*

mexicanus knudseni], and the endangered Hawaiian duck [*Anas wyvilliana*]), the endangered Hawaiian goose (*Branta sandvicensis*), and the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*).

If you require further information or have questions, please contact Nicole Winterton, Environmental Protection Specialist, by email at Nicole.winterton@dot.gov or by phone at (720) 963-3689. We appreciate your assistance with this project.

Sincerely,



Michael Will
Project Manager

Enclosure:

Biological Assessment for the Proposed Hanapepe Bridge Project, Kauai, Hawaii

cc:

Mary Abrams, U.S. Fish and Wildlife Service

David Smith, State of Hawaii Division of Forestry and Wildlife

Dr. Bruce Anderson, State of Hawaii Division of Aquatic Resources

Biological Assessment for the Proposed Hanapēpē River Bridge Project, Kaumuali'i Highway, Hanapēpē, Kaua'i Island, Hawai'i

Prepared for

**Federal Highway Administration, Central Federal
Lands Highway Administration and CH2M HILL**

Prepared by

SWCA Environmental Consultants

January 2016



**BIOLOGICAL ASSESSMENT FOR THE PROPOSED
HANAPĒPĒ RIVER BRIDGE PROJECT,
KAUMUALI'I HIGHWAY, HANAPĒPĒ, KAUA'I ISLAND, HAWAI'I**

Prepared for

Federal Highway Administration, Central Federal Lands Highway Division

12300 West Dakota Ave., Ste. 280
Lakewood, CO 80228
(720) 963-3689

and

CH2M HILL

1132 Bishop Street, Suite 1100
Honolulu, Hawai'i 96813
(808) 943-1133

Prepared by

SWCA Environmental Consultants

Bishop Square ASB Tower
1001 Bishop Street, Suite 2800
Honolulu, Hawai'i 96813
(808) 548-7922
www.swca.com

SWCA Project No. 27166

January 26, 2016

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1. INTRODUCTION

The Federal Highway Administration (FHWA), Central Federal Lands Highway Division, in partnership with the Hawai'i Department of Transportation (HDOT), is proposing to replace Hanapēpē River Bridge (project) to meet current design standards for roadway width, load capacity, bridge railing and transitions, and bridge approaches. CH2M HILL contracted SWCA Environmental Consultants (SWCA) on behalf of FHWA to complete a biological assessment (BA) for the project. The purpose of this BA is to evaluate the proposed action in sufficient detail to determine its potential effects on federally listed threatened and endangered species, candidate and proposed species for listing, and critical habitat.

The Hanapēpē River Bridge is in the Hanapēpē area on the southwest side of the Island of Kaua'i along Kaumuali'i Highway (Route 50) at approximately milepost 16.57 (Figure 1). The surrounding area is predominantly residential. The route is classified as an urban minor arterial and is the primary route to the Hanapēpē-Ellele District and the Waimea District.

Section 7(a)(1) of the Endangered Species Act (ESA) of 1973 (as amended) directs all Federal agencies to participate in the conservation and recovery of threatened and endangered species. Section 7(a)(2) of the ESA states that each Federal agency shall consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. The proposed action would be federally funded, and FHWA is the lead agency for the Section 7 consultation. Because this BA includes impacts for terrestrial and marine species, it will be submitted to the USFWS and the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) (informally known as NOAA Fisheries).

1.1. Consultation to Date

Michael Will, Project Manager from the U.S. Department of Transportation, FHWA-Central Federal Lands Highway Division sent a letter to the USFWS on November 21, 2014, requesting a list of federally threatened and endangered species, candidate species, plants and animals of special concern, and critical habitats near the proposed action. USFWS replied to the letter on December 22, 2014, listing the species that may occur on Kaua'i along with recommended measures that USFWS believes will reduce impacts on each species (USFWS 2014a). Conservation measures that will be incorporated into the proposed action are listed in section 2.5.

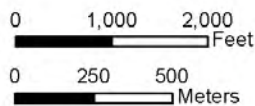
On March 13, 2015, CH2M HILL hosted a meeting in their Honolulu Office to discuss the program with the FHWA-Central Federal Lands Highway Division, USFWS, CH2M HILL, State of Hawai'i Division of Aquatic Resources, NOAA, Environmental Protection Agency, and SWCA. On December 11, 2014, CH2M HILL and SWCA also met with the U.S. Army Corps of Engineers at their Honolulu District Office to discuss the Hawai'i Bridges Program. The purpose of these meetings was to introduce the project locations, and generally discuss potential biological and regulatory issues associated with the Hawai'i Bridges Program. As recommended by the USFWS, two Fish and Wildlife Coordination Act (FWCA) meetings were held on December 8 and December 15, 2015, to discuss avoidance and minimization measures for fish and wildlife resources and water quality.



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Hanapēpē Bridge

★ Project Location



Sources: USGS 7.5' Topographic Map - Hanapepe

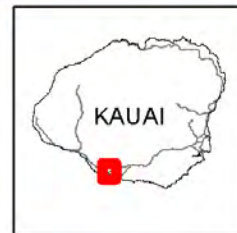


Figure 1. Proposed project location.

2. PROPOSED ACTION AND PROJECT DESCRIPTION

The proposed action consists of replacing the existing Hanapēpē Bridge to address structural and functional deficiencies. The highway section at the bridge will be closed during the construction period, and a two-way bypass route and temporary crossing will be provided mauka of the highway. The project encompasses a total area of 2.7 acres (1.1 hectares [ha]), comprising 1.9 acre (0.8 ha) of a permanent impact area and 0.8 acre (0.3 ha) of a temporary impact area (Figure 2). The proposed action is anticipated to start construction in year 2016 and be completed in the year 2018. Components of the proposed action, construction considerations, a description of the survey area and action area, as well as conservation measures to be incorporated into the project, are described below.

2.1. Bridge Replacement

The existing three-span structure was built in 1938 and is approximately 275 feet (83.8 meters [m]) long and 36 feet (11 m) wide. The structure currently accommodates two, 12-foot-wide (3.6-m-wide) travel lanes with 5-foot-wide (1.52-m-wide) sidewalks on both sides. The existing bridge is considered functionally obsolete, has a substandard load carrying capacity, does not meet current seismic requirements, and is scour critical. Inspection of existing timber piles identified possible marine borer infestation and decay which may compromise load carrying capacity.

The proposed action would replace Hanapēpē Bridge in its existing location (Figure 2). The new structure would be a three-span girder bridge which is aesthetically comparable to the existing structure. The new bridge would increase in length from 275 feet (84 m) to 308 feet (94 m) and increase in width from 36 feet (11 m) to 52 feet (16 m). Like the existing bridge, the replacement would accommodate two 12-foot-wide (3.6-m-wide) travel lanes, but shoulders would be widened to 8 feet (2.4 m). The new bridge would continue to provide 5-foot-wide (1.5-m-wide) raised sidewalks on each side and the bridge railings would measure 1-foot (0.3-m) thick. The posted speed will remain at 35 miles per hour (mph) (56.33 kilometers per hour [kph]).

The proposed bridge design includes shallow girders and a cast-in-place deck slab. Bridge railings and transitions would meet crash test requirements. The proposed railing is a concrete, crash-tested rail with similarities to the existing bridge railing and would be 42 inches (106.7 cm) high for bicyclists' safety. Concrete end posts will be provided for the length of the approach slab as a transition from the bridge railings to the roadway metal guardrails. Therefore, in addition to meeting current bridge standards, this design was selected because it most closely resembles the historic character of the existing bridge.

Existing piers and pier caps (existing exposed timber piles) would be cut at the mudline and removed. The replacement bridge would have two new piers, resulting in three arched spans and the same general shape as the existing bridge. The replacement bridge would be supported by deep foundations bearing on, or embedded within, competent soils beneath the soft soils. The foundation type for the bridge would likely consist of driven piles or drilled shafts. A driven pile foundation could have constructability issues associated with obstructions from boulders during driving, but is technically feasible. If drilled shafts are used, a large diameter shaft would be considered to minimize the potential for drilling difficulty because of cobbles and boulders in the alluvium. A larger diameter shaft, such as 60 inches, could be completed with augers and the greater diameter would allow for boulders to be removed on the auger flights. Drilled shafts with a diameter that is smaller than the likely boulder size may encounter refusal. Foundation type would be selected during final design.



Alternatively, drilled shafts could be constructed for the bridge foundations. In this case, a large diameter shaft would be considered to minimize the potential for drilling difficulty because of cobbles and boulders

in the alluvium. A larger diameter shaft, such as 60 inches (152.4 cm), could be completed with augers and the greater diameter would allow for boulders to be removed on the auger flights. Drilled shafts with a diameter that is smaller than the likely boulder size may encounter refusal.



Hanapēpē Bridge

Project Area

-  Permanent Impact
-  Temporary Impact

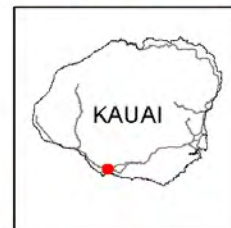
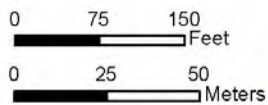


Figure 2. Hanapēpē Bridge project area, showing permanent and temporary impact areas.

The existing vertical bridge abutments are currently located within the main channel. The existing abutments would be demolished and removed. New abutments would be constructed behind the location of the existing abutments and set back from the main channel, thereby avoiding interference with the existing foundation. This design also provides greater hydraulic capacity. By removing the existing abutments, the stream would be widened under the bridge to match the existing upstream and downstream channel profile and allow for additional conveyance of flood waters. A new sloped concrete rubble masonry (CRM) lining would be constructed to protect the underside of the new drilled shaft stub abutment and river banks from scour. The new northeast abutment would require removal of approximately 7 feet (2 m) of the existing levee along the east bank with a new tie-in to the replacement bridge.

At the abutments, wingwalls would cantilever behind the abutments for 20 feet (6 m) on each side. On the east side, the wing walls would be extended by a concrete barrier wall supported on spread footings.

The proposed horizontal and vertical roadway alignments would closely match existing conditions as roadway profile changes would impact the adjacent properties along the roadway approaches to the bridge. Two retaining walls are expected on the west end of the bridge. Based on preliminary design, the wall on the mauka side would measure approximately 110 feet (34 m) long, and the wall on the makai side approximately 55 feet (17 m) long.

Bridge design is expected to include provisions for highway lighting pole attachments and conduits for a future highway lighting system. All highway lighting will be designed with best available technology to mitigate impacts on listed seabirds and in compliance with light pollution regulation.

2.2. Construction Activities

To minimize impacts to the surrounding residential areas, night work is not anticipated. Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

The Hanapēpē River Bridge would be closed to normal traffic for the duration of the project. During construction, Hanapēpē Bridge would be closed completely and a two-way temporary bypass and bridge would be constructed on the mauka side of the existing bridge. The temporary bypass would provide two 10-foot (3 m) lanes (one in each direction), 2-foot (0.6 m) shoulders on each side, and barriers as needed. The posted speed of the temporary bypass road would be 15 mph (24 kph). Approaching the construction zone, the regulatory speed would be reduced with appropriate signing in 10 mph (16 kph) increments.

There are currently sidewalks on the existing bridge for pedestrians to cross Hanapēpē River. Utilities attached to the existing bridge, as well as an overhead line, would need to be temporarily relocated to the bypass bridge during construction. Affected utilities include: electric/power, telephone, cable, fiber optic, water, sewer, and street lighting.

The temporary bypass does not fit in the existing right-of-way and would require a construction parcel. A sanitary pump station and private residence on the west, mauka side of the bridge may potentially be impacted and require that temporary walls be constructed to limit impacts. On the east, mauka side of the bridge, there is a levee that would be spanned as well as potentially impacting some private properties.

Personnel and equipment would be staged within the project limits. A potential staging area is along the east (Lihue side) bank, above the levee and between the Hanapēpē Bridge and County bridge. Because the temporary detour road is located on the mauka side of the bridge, equipment access would likely

approach the construction zone from the makai side. Specific construction means and methods would be determined by the contractor. However, general options would include equipment stationed on a barge or floating platform, or temporary trestle structure with work platform. It is unknown if the contractor will install temporary fencing on the project site; however, if used the design of the fence will adhere to conservation measures listed in section 2.5. Demolition debris will require disposal at an approved landfill.

Equipment likely to be used includes the following: drill rig, crane, excavator, backhoe, front-end loader, grader, forklift, semi-trucks, dump trucks, concrete trucks, compactors, paving equipment, and compressors. Construction Noise Model User's Guide (FHWA, 2006) indicates that the loudest equipment generally emits noise in the range of 80 to 90 decibel(s) (A-weighted scale) (dBA) at a distance of 50 feet (CH2M Hill in prep).

The project is anticipated to start construction in year 2016 and end in 2018 with an estimated duration of 24 months. The proposed action by FHWA includes only the road improvement activities. Operation and maintenance of the road are the responsibility of HDOT.

2.3. Project Area and Survey Area

The Hanapēpē Bridge is in Hanapēpē town on the Island of Kaua'i along Kaumuali'i Highway (Route 50). The survey area is the area within which field observations were made during September 2014 site visits by SWCA biologists. The survey area was originally based on the expected project footprint in September 2014; however, the project area, defined as all areas where **direct impacts** (permanent and temporary) are proposed to occur, changed slightly after the field survey. As shown in Figure 3, the survey area (approximately 7.9 acres [3.2 ha]) is larger than the project area.

The project area includes a portion of Kaumuali'i Highway between Kona Road to Puolo Road. The terrain is generally flat. A County sewer pump station is located on the mauka side of the highway near the western approach. On the makai side of the highway there is a gas station and auto repair shop. Development on other privately owned lands include residences and small retail businesses and eating establishments. Nearby public and community facilities include a fire station and church.

2.4. Action Area

The ESA defines an *action area* as the area within which all of the **direct and indirect impacts** of the project would occur (50 Code of Federal Regulations 402.02). In other words, it is the geographic area that would be affected by construction and maintenance of the project. The Hanapēpē Bridge action area was determined based on potential for construction noise to travel through the surrounding areas. This is because noise would be the most far-reaching impact resulting from the proposed action. The Hanapēpē Bridge action area (see Figure 3) extends 1,000 feet (305 m) from the survey area, covering a total of 174.1 acres (70.4 ha). The 1,000-foot (305-m) buffer defines the action area based on the distance a 100 A-weighted-decibel (dBA) noise (such as a rock drill, paver, or impact pile driver) would attenuate to background levels (approximately 50 dBA) over flat terrain with little to no vegetation. This area is conservatively defined and likely encompasses an area larger than the area within which all impacts would occur. The actual distance that noise effects would occur is likely smaller than the action area because quieter equipment would be used and local topography and vegetation would shield the produced noise.



Figure 3. Hanapēpē Bridge project, survey, and action areas.

2.5. Conservation Measures

Implementation of the proposed action would include a variety of conservation measures to reduce or eliminate project-related impacts and avoid adverse effects to listed species. Conservation measures for the proposed action include the following:

Waterbirds

- Although not expected due to the lack of suitable nesting habitat within the project area, if a waterbird nest with eggs or chicks/ducklings is discovered in the project area during construction, work will cease within 100 feet (30 m) of the nest until the chicks/ducklings have fledged.
- Waterbird nests, chicks or broods found in the project area before or during construction will be reported to the USFWS within 48 hours.
- If an endangered Hawaiian waterbird is present or lands in the area during on-going activities, then all activities within 100 feet (30 m) of the bird would cease, and the bird would also not be approached. Work may continue after the bird leaves the area of its own accord.

Nēnē or Hawaiian Goose

- All regular on-site staff will be trained to identify nēnē (*Branta sandvicensis*) and the appropriate steps to take if nēnē are present on-site.
- If a nēnē is found in the area during ongoing activities, all activities within 100 feet (30 m) of the bird will cease, and the bird will not be approached. If a nest is discovered, USFWS will be contacted. If a nest is not discovered, work may continue after the bird leaves the area of its own accord.

Seabirds

- Construction activity will be restricted to daylight hours during the seabird peak fallout period (September 15–December 15) to avoid the use of nighttime lighting that could attract seabirds. To minimize impacts to the surrounding residential areas, night work is not anticipated.
- All outdoor lights will be shielded to prevent upward radiation. This has been shown to reduce the potential for seabird attraction (Reed et al. 1985; Telfer et al. 1987).
- Outside lights not needed for security and safety will be turned off from dusk through dawn during the seabird peak fallout period (September 15–December 15).

Hawaiian Hoary Bat

- Any fences that are erected as part of the project will have barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat or ʻōpeʻapeʻa (*Lasiurus cinereus semotus*) on barbed wire. No fences with barbed wire were observed in the survey area; however, if fences are present, the top strand of barbed wire will be removed or replaced with barbless wire.
- No trees taller than 15 feet (4.6 m) will be trimmed or removed as a result of this project between June 1 and September 15, when juvenile bats that are not yet capable of flying may be roosting in the trees. However, if a limited number of trees would need to be cleared during that time period, a qualified biologist would use appropriate protocols to surveys for bats prior to trimming or cutting.

Hawaiian Monk Seal and Sea Turtles

- Construction activities will not occur if a Hawaiian monk seal (*Neomonachus schauinslandi*) or sea turtle is in the construction area or within 150 feet (46 m) of the construction area.

Construction will only begin after the animal voluntarily leaves the area. If a monk seal/pup pair is present, a 300-foot (91-m) buffer will be observed. If a Hawaiian monk seal or sea turtle is noticed after work has already begun, that work may continue only if, in the best judgment of the project supervisor, that there is no way for the activity to adversely affect the animal(s).

- Any construction-related debris that may pose an entanglement threat to monk seals and turtles will be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers will not attempt to feed, touch, ride, or otherwise intentionally interact with any listed species.

In addition to the conservation measures, the following best management practices (BMPs) would be implemented to protect water quality, as recommended by the NMFS Protected Resources Division (NOAA NMFS 2015a) and USFWS (USFWS 2014a). The applicability of these measures to the proposed project will depend on the site-specific construction means and methods chosen. The project would also adhere to the requirements of all applicable permits.

- Erosion and sediment control measures would be in place before initiating earth-moving activities. Functionality would be maintained throughout the construction period.
- A contingency plan to control toxic materials will be developed.
- Appropriate materials to contain and clean potential spills will be stored at the work site and be readily available.
- All project-related materials and equipment placed in the water will be free of pollutants.
- The project manager and heavy equipment operators will perform daily pre-work equipment inspections for cleanliness and leaks. All heavy equipment operations will be postponed or halted if a leak is detected, and they will not proceed until the leak is repaired and the equipment is cleaned.
- Fueling of land-based vehicles and equipment will take place at least 50 feet (15.24 m) away from the water, preferably over an impervious surface. Fueling of vessels will be done at approved fueling facilities.
- Turbidity and siltation from project-related work will be minimized and contained through the appropriate use of erosion control practices, effective silt containment devices, and the curtailment of work during adverse weather and tidal/flow conditions.
- A plan will be developed to prevent debris and other wastes from entering or remaining in the marine environment during the project.
- No project-related materials (fill, revetment rock, pipe, etc.) will be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.
- No contamination (trash or debris disposal, invasive species introductions, attraction of non-native pests, etc.) of adjacent habitats (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests, etc.) shall result from project-related activities.
- Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).
- All debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site.

3. METHODOLOGY AND SPECIES COVERED IN THE EVALUATION OF POTENTIAL IMPACTS

The USFWS maintains lists of endangered, threatened, proposed, and candidate species known or thought to occur in Hawai'i. The USFWS also designates critical habitat in the state for some listed species. Endangered and threatened species are protected under the ESA (16 United States Code [USC] 1531 et seq.). The ESA specifically prohibits *take*, which is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct” of a listed species. *Harm* includes “significant habitat modification or degradation that kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”

All information on the vegetation and wildlife in the action area was derived from biological surveys conducted by SWCA in September 2014. In addition to recording wildlife and plants during the surveys, SWCA evaluated habitat for the possible occurrence of federally listed species. As part of that habitat evaluation effort, the presence of any water, wetlands, and special soils was documented.

The species evaluated in this report consist solely of federally protected (endangered and threatened) species, proposed species, and candidates for federal listing.

The determination of potential for local species occurrence was based on 1) existing information on distribution and 2) qualitative comparisons of the habitat requirements of each species with vegetation communities, landscape features, and/or water quality conditions in the survey area. Possible impacts to these species were evaluated based on reasonably foreseeable project-related activities and the local loss of habitat.

Federally listed species were evaluated for potential to occur in the action area using the following categories:

- *Known to occur*: The species was documented in the action area either during or before the field surveys by a reliable observer.
- *May occur*: The action area is within the species' currently known range, and vegetation communities, soils, water quality conditions, etc., resemble those known to be used by the species.
- *Unlikely to occur*: The action area is within the species' currently known range, but vegetation communities, soils, water quality conditions, etc., do not resemble those known to be used by the species, or the survey area is clearly outside the species' currently known range.

Species with the potential to occur in the action area were then further evaluated for possible impacts from the proposed action. However, effect determination categories are defined differently based on the exact legal status of a species and the mandates and responsibilities of the agency tasked to manage or protect that species. Federally protected (i.e., threatened or endangered) species were assigned to one of three categories of possible effect, following USFWS guidelines.

- *No effect*: A determination of no effect means there are absolutely no effects to the species and its critical habitat, either positive or negative. It does not include small effects or effects that are unlikely to occur.
- *May affect, is not likely to adversely affect*: Under this effect determination, all effects to the species and its critical habitat are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without adverse effects to the species (for example, there cannot be “balancing,” so that the benefits of the action will outweigh the adverse effects). Insignificant effects relate to the magnitude of the impact and should not reach the scale where

take occurs. Discountable effects are considered extremely unlikely to occur. Based on best judgment, a person will not 1) be able to meaningfully measure, detect, or evaluate insignificant effects or 2) expect discountable effects to occur. Determinations of “not likely to adversely affect, due to beneficial, insignificant, or discountable effects” require written concurrence from the USFWS.

- *May affect, is likely to adversely affect:* This effect determination means that the proposed action will have an adverse effect on the species or its critical habitat. Any action that will result in “take” of an endangered or threatened species is considered an adverse effect. A combination of beneficial and adverse effects is still considered “likely to adversely affect,” even if the net effect is neutral or positive. The effect on the species and/or critical habitat must be extremely small to qualify as a discountable effect. Likewise, an effect that can be detected in any way or that can be meaningfully articulated in a discussion of the results of the analysis is not discountable; it is an adverse effect.

As directed by the USFWS, critical habitat and species proposed or that are candidates for listing are evaluated using the following effect determination categories listed below. *Jeopardy* is defined under the ESA as occurring when “an action is reasonably expected, directly or indirectly, to diminish a species’ numbers, reproduction, or distribution so that the likelihood of survival and recovery in the wild is appreciably reduced.”

- No effect.
- Not likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of proposed critical habitat.
- Likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of proposed critical habitat.

Once a species becomes federally listed as endangered or threatened, it becomes listed under the same classification (endangered or threatened) in the State of Hawaiʻi (Hawaii Revised Statutes 195D-4).

4. AFFECTED ENVIRONMENT

SWCA conducted a review of available scientific and technical literature regarding natural resources in the project area, survey area, and action area. This literature review encompassed a thorough search of refereed scientific journals, technical journals and reports, environmental assessments and environmental impact statements, relevant government documents, and unpublished data that provide insight into the natural history and ecology of the area. SWCA also reviewed available geospatial data, aerial photographs, and topographic maps of the project area, survey area, and action area.

A field reconnaissance of the survey area was conducted by SWCA biologists on September 17, 2014, and September 29, 2014. Representative portions of the area were driven or walked to describe vegetation types, fauna, and wetlands or streams, as well as known or suspected threatened, endangered, or candidate wildlife or plant species and habitat.

4.1. Soils and Hydrology

The Hanapēpē bridge action area is underlain by Kōloa Volcanics, as well as alluvium (Sherrod et al. 2007). The Natural Resources Conservation Service identifies the following four soil types in the survey area: Pakala clay loam, 0%–2% slopes (PdA); Hanalei silty clay loam, 0%–2% slopes (HmA); Jaucas loamy fine sand, dark variant, 0%–8% slopes (JkB); and Water > 40 acres (W) (Foote et al. 1972; NRCS 2013). Most of the terrestrial area is covered in asphalt concrete–paved roadways.

Mean annual rainfall for this area is approximately 26.6 inches (676 millimeters [mm]). Rainfall is typically highest in December–January and lowest in June (Giambelluca et al. 2013). The closest rainfall gage to the site experienced above-average rainfall for 2014 through the end of September when the survey occurred (National Oceanic and Atmospheric Administration/National Weather Service, Weather Forecast Office Honolulu 2014).

The Hanapēpē bridge action area is in the Hanapēpē Watershed (Parham et al. 2008). The Hanapēpē River Bridge and the Hana Road Bridge both span the Hanapēpē River. The total length of Hanapēpē River is approximately 81.3 miles (130.8 km), and it is identified as perennial by the State of Hawai'i and the U.S. Geological Survey. The original drainage course has been modified (i.e., rip-rap and concrete, floodwall atop a levee vertical concrete walls) likely for flood control. Hanapēpē River is tidally influenced in the action area. It flows from north to south and continues south from the highway bridge for approximately 0.35 mile (0.56 km) before emptying into Hanapēpē Bay.

The National Wetlands Inventory (NWI) program identifies Hanapēpē River as a Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded (R2UBH) water type (Figure 4). Hanapēpē River is listed as a 303(d) Impaired Waterbody due to turbidity (Hawai'i State Department of Health 2014). No wetlands were found in the survey area.

4.2. Vegetation

No state or federally listed threatened, endangered, or candidate plant species were recorded in the survey area. Three native Hawaiian plants—'uhaloa (*Waltheria indica*), milo (*Thespesia populnea*), and hau (*Hibiscus tiliaceus*)—were seen during the survey. These species are indigenous, or found in Hawai'i and elsewhere, and are common in disturbed areas.

The vegetation in the survey area is composed of three main vegetation types: Ruderal Vegetation, Ornamental Landscaping, and Mixed Riparian Forest.

Ruderal Vegetation: Ruderal plant species are dominant in heavily disturbed areas and along the edges of roads. This vegetation type is dominated by a mix of weedy non-native grasses and herbaceous plants (Appendix A, Figure A1). Abundant and common species found in the Ruderal Vegetation type are swollen fingergrass (*Chloris barbata*), Guinea grass (*Urochloa maxima*), buffelgrass (*Cenchrus ciliaris*), Bermuda grass (*Cynodon dactylon*), wire grass (*Eleusine indica*), false ragweed (*Parthenium hysterophorus*), morning glory (*Ipomoea obscura*), khaki weed (*Alternanthera pungens*), lion's ear (*Leonotis nepetifolia*), and *Sida acuta*. Ruderal trees and shrubs are less common and include koa haole (*Leucaena leucocephala*), 'opiuma (*Pithecellobium dulce*), and African tulip (*Spathodea campanulata*) seedlings. Mexican creeper (*Antigonon leptopus*) is climbing in trees along Kaumuali'i Highway.

Ornamental Landscaping: Ornamental Landscaping areas are characterized by ornamental trees and shrubs scattered in mowed weedy areas. A few royal poinciana (*Delonix regia*) are planted with Macarthur palms (*Ptychosperma macarthurii*) along Kaumuali'i Highway. Other ornamental plantings in the survey area include monkeypod trees (*Samanea saman*), mango (*Mangifera indica*), wedelia (*Sphagneticola trilobata*), hibiscus (*Hibiscus* spp.), bird of paradise (*Strelitzia reginae*), bauhinia (*Bauhinia* spp.), and mock orange (*Murraya paniculata*).

Mixed Riparian Forest: Along Hanapēpē River, a thick forest of mixed riparian trees is present (Appendix A Figure A2). Red mangrove (*Rhizophora mangle*) is the most abundant species, particularly along the water's edge. The indigenous hau also forms monotypic stands along the river. Coconut trees (*Cocos nucifera*), milo, and kiawe (*Prosopis pallida*) are scattered in the area.



Figure 4. Hanapēpē River and National Wetlands Inventory classification near the survey area.

4.3. Wildlife

Fauna surveys consisted of a pedestrian survey on September 17 and 29, 2014, *before* 11 am or *after* 4 pm when wildlife was most likely active. Field observations of birds were conducted using 8 × 42–mm binoculars. Visual and auditory observations were included in the survey results. All observed birds, mammals, reptiles, amphibians, fish, and invertebrate species were noted during the surveys. Acoustic surveys for the endangered Hawaiian hoary bat or 'ōpe'ape'a were not conducted; however, areas of suitable habitat for foraging and roosting were noted when present.

The following section describes common wildlife observed during the September 2014 field surveys.

4.3.1. Birds

The bird species observed in the survey area are species typically found in disturbed lowland areas. In all, nine bird species were documented (Table 1). All of the species are introduced to the Hawaiian Islands.

Table 1. Birds Observed by SWCA in and near the Survey Area

Common Name	Scientific Name	Status*
Cattle egret	<i>Bubulcus ibis</i>	NN
Common myna	<i>Acridotheres tristis</i>	NN
Domestic chicken	<i>Gallus gallus domesticus</i>	NN
Hwamei	<i>Garrulax canorus</i>	NN
Japanese white-eye	<i>Zosterops japonicus</i>	NN
Northern cardinal	<i>Cardinalis cardinalis</i>	NN
Rock pigeon	<i>Columbia livia</i>	NN
Spotted dove	<i>Streptopelia chinensis</i>	NN
Zebra dove	<i>Geopelia striata</i>	NN
Total species		9

Notes: NN = non-native permanent resident.

4.3.2. Mammals

A dog (*Canis familiaris*) was observed during the survey, and cats (*Felis catus*) are also likely to enter the area due to the nearby residences. Other mammals that can be expected on-site include mouse (*Mus musculus*), rat (*Rattus* spp.), and mongoose (*Herpestes javanicus*).

4.3.3. Terrestrial Reptiles and Amphibians

No reptiles or amphibians were seen during the survey. None of the terrestrial reptiles or amphibians in Hawai'i are native to the islands.

4.3.4. Terrestrial Invertebrates

Four species of terrestrial invertebrates were noted during the survey. These include two non-native snails: the giant African snail (*Achatina fulica*) and the miniature awl snail (*Subulina octona*). Also observed were the large orange sulphur butterfly (*Phoebis agarithe*) and the native indigenous globe skimmer (*Pantala flavescens*).

4.3.5. Fish and Aquatic Invertebrates

Table 2 lists the fishes observed by SWCA and recorded for this location from the Hawai'i Division of Aquatic Resources (DAR) Watershed Atlas (Parham et al. 2008). None of the four endemic 'o'opu (or gobies) are reported from the estuarine region of the river, but because these fish are amphidromous, they will pass through this area during two portions of their life cycle.

Table 2. Fishes Observed by SWCA and Reported by Parham et al. (2008) in Hanapēpē River

Common Name	Scientific Name	Status
Āholehole, Hawaiian flagtail*	<i>Kuhlia</i> sp.	I
'Ama'ama, striped mullet*	<i>Mugil cephalus</i>	I
Guppy	<i>Poecilia reticulata</i>	NN
Kaku, great barracuda*	<i>Sphyræna barracuda</i>	I
Mozambique tilapia	<i>Oreochromis mossambicus</i>	NN
'O'opu alamo'o	<i>Lentipes concolor</i>	E
'O'opu nākea	<i>Awaous stamineus</i>	E
'O'opu nōpili	<i>Sicyopterus stimpsoni</i>	E
'O'opu naniha	<i>Stenogobius hawaiiensis</i>	E
Swordtail	<i>Xiphophorus helleri</i>	NN
Tilapia	<i>Tilapia</i> sp.	NN
Total species		11

Notes: E = Endemic, I = Indigenous, NN = non-native.

* = Observed by SWCA during the survey; all others were recorded by Parham et al. (2008)

No aquatic invertebrates were detected in the survey area due to the poor water conditions. Table 3 lists the freshwater invertebrate species recorded in the DAR Watershed Atlas for Hanapēpē River (Parham et al. 2008). The Atlas lists two native crustaceans—'ōpae kala'ole (*Atyoida bisulcata*) and 'ōpae 'oeha'a (*Macrobrachium grandimanus*)—as occurring in the estuary.

Table 3. Aquatic Invertebrates Reported by Parham et al. (2008) in Hanapēpē River

Common Name	Scientific Name	Status
Crustaceans		
‘Ōpae kala’ole	<i>Atyoida bisulcata</i>	E
‘Ōpae ‘oeha’a	<i>Macrobrachium grandimanus</i>	E
Tahitian prawn	<i>Macrobrachium lar</i>	NN
Insects		
Damselfly species	<i>Megalagrion</i> sp.	E
Dragonfly species	<i>Anax</i> sp.	E/I
Midge species	Chironomidae	NN
Midge species	<i>Telmatogeton</i> sp.	E/I
Mollusks		
Freshwater snail	<i>Lymnaeid</i> sp.	NN
Total taxa		8

Notes: E = Endemic, I = Indigenous, E/I = Endemic or indigenous, NN = non-native

5. SPECIES AND CRITICAL HABITAT CONSIDERED

The species evaluated in this report consist of all federally protected (i.e., endangered and threatened) and proposed or candidate species with potential to occur around Hanapēpē, Kaua‘i (USFWS 2014a).

5.1. Species

The USFWS and NOAA list 12 species that may occur in the Hanapēpē bridge action area: nine endangered species, two threatened species and one proposed endangered species (Table 4). Based on current distribution and habitat requirements, seven of these species—the Hawaiian coot (*Fulica alai*), Hawaiian gallinule (*Gallinula chloropus sandvicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian duck (*Anas wyvilliana*), nēnē, Hawaiian hoary bat, and green sea turtle (*Chelonia mydas*)—may occur in the action area. The Hawaiian petrel (*Pterodroma sandwichensis*), Newell’s shearwater (*Puffinus auricularis newelli*) and band-rumped storm petrel (*Oceanodroma castro*) are unlikely to occur in the action area because suitable habitat does not exist; however, these seabirds may be attracted to construction lights as they fly over the action area. The Hawaiian monk seal and hawksbill sea turtle (*Eretmochelys imbricata*) are also unlikely to occur in the action area. These species are discussed in further detail in section 6.

Table 4. Species Federally Listed as Endangered or Threatened or Proposed with potential to occur near the action area.

Common Name (scientific name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Action Area	Determination of Effect
Birds				
Hawaiian coot (<i>Fulica alai</i>)	Endangered	Found in freshwater and brackish-water marshes and ponds. This species is associated with emergent marsh habitat in lowland valleys, reservoirs, and occasionally in high-elevation plunge pools. Nests are built on floating vegetation.	May occur; suitable emergent marsh habitat is not present in the Hanapēpē Bridge action area, but the Hawaiian coot could forage in the waters of the Hanapēpē River.	May affect, but is not likely to adversely affect.
Hawaiian gallinule (<i>Gallinula chloropus sandvicensis</i>)	Endangered	Found in freshwater marshes, taro patches, irrigation ditches, reservoirs, and wet pastures. This species favors dense emergent vegetation near open water, floating or barely emergent mats of vegetation, and water depths of less than 3 feet. It prefers freshwater over saline or brackish water. Nesting occurs throughout the year.	May occur; standing water is present in the action area, although their preferred dense emergent vegetation is not present in the Hanapēpē Bridge action area.	May affect, but is not likely to adversely affect.
Hawaiian stilt (<i>Himantopus mexicanus knudseni</i>)	Endangered	Prefers a variety of aquatic habitats but is limited by water depth and vegetation cover. This species likes to loaf in open mudflats, sparsely vegetated pickleweed mats, and open pasturelands. Specific water depths of 5 inches are required for optimal foraging. Nest sites are frequently separated from feeding sites, and stilts move between these areas daily. Nesting sites are adjacent to or on low islands within bodies of fresh, brackish, or salt water.	May occur; suitable nesting habitat is not present in the Hanapēpē Bridge action area; however they may forage in the shallow waters of the Hanapēpē River.	May affect, but is not likely to adversely affect.
Hawaiian duck (<i>Anas wyvilliana</i>)	Endangered	Found in lowland wetlands, river valleys, and mountain streams. Nesting occurs on the ground near water.	May occur; foraging sites occur in the Hanapēpē Bridge action area. Although unlikely, it could nest in vegetation adjacent to the Hanapēpē River.	May affect, but is not likely to adversely affect.
Nēnē (<i>Branta sandvicensis</i>)	Endangered	Frequents scrubland, grassland, golf courses, sparsely vegetated slopes, and open lowland country. They do not require standing or flowing water for successful breeding but will use it when available. Their current distribution has been highly influenced by captive-bred releases into the wild.	May occur; suitable foraging habitat occurs in the ruderal vegetation type in the action area.	May affect, but is not likely to adversely affect.

Table 4. Species Federally Listed as Endangered or Threatened or Proposed with potential to occur near the action area.

Common Name (scientific name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Action Area	Determination of Effect
Hawaiian petrel (<i>Pterodroma sandwichensis</i>)	Endangered	Breeding season is from March to October, during which time this species nests in some of the main Hawaiian Islands, notably on Maui, Lāna'i, and Kaua'i. They nest in burrows, primarily in remote montane locations, along large rock outcrops, under cinder cones, under old lichen-covered lava, or in soil beneath dense vegetation. This species was once abundant on all main Hawaiian islands except Ni'ihau. Today, the largest known breeding colonies are found at Haleakala Crater on Maui and on the summit of Lāna'i. Other colonies are on Kaua'i, the island of Hawai'i, and possibly Moloka'i.	Unlikely to occur in the action area. The Hawaiian petrel may fly over the action area at night while transiting between nest sites and the ocean, but they are not likely to land or use habitat because nesting habitat does not occur in the action area.	May affect, but is not likely to adversely affect.
Newell's shearwater (<i>Puffinus auricularis newelli</i>)	Threatened	During their 9-month breeding season from April through November, this species nests in burrows under ferns on forested mountain slopes and needs an open downhill flight path through which it can become airborne. These burrows are used year after year and usually by the same pair of birds. The Newell's shearwater was once abundant on all main Hawaiian islands. Today, Newell's shearwater breed on Kaua'i, the island of Hawai'i, Moloka'i, and Lehua. Breeding on Maui and Oah'u has not been confirmed (Mitchell et al. 2005).	Unlikely to occur in the action area. Newell's shearwater may fly over the action area at night while transiting between nest sites and the ocean, but are not likely to land or use habitat because nesting habitat does not exist in the action area.	May affect, but is not likely to adversely affect.
Band-rumped Storm Petrel (<i>Oceanodroma castro</i>)	Proposed endangered	This species is found in several areas of the subtropical Pacific and Atlantic Oceans. In Hawai'i, it is known to nest on Kaua'i, Lehua Islet, and the Island of Hawai'i. It likely nests in remote cliff locations. Only three inactive nests have ever been found in the Hawaiian Islands; all were located in small caves or crevices. Adults visit the nest site after dark. When not at nest locations, it forages on the open ocean.	Unlikely to occur in the action area. Band-rumped storm petrel may fly over the action area at night while transiting between nest sites and the ocean, but are not likely to land or use habitat because nesting habitat does not exist in the action area.	Not likely to jeopardize the continued existence.
Mammals				
Hawaiian monk seal (<i>Neomonachus schauinslandi</i>)	Endangered	Endemic to the Hawaiian archipelago and found mostly in the Northwestern Hawaiian Islands. Increasing sightings reported from main Hawaiian Islands. Hawaiian monk seals spend most of their time in the ocean but rest on sandy beaches, and sometimes use beach vegetation as shelter from wind and rain. There are accounts of seals traveling up some rivers and streams.	Unlikely to occur in the action area. The action area does not contain habitat that could support Hawaiian monk seal pupping, nursing, and haul-out. Monk seals could foraging in the Hanapēpē River, but have not been recorded there.	May affect, but is not likely to adversely affect.

Table 4. Species Federally Listed as Endangered or Threatened or Proposed with potential to occur near the action area.

Common Name (scientific name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Action Area	Determination of Effect
Hawaiian hoary bat (<i>Lasiurus cinereus semotus</i>)	Endangered	This species is found primarily from sea level to 7,500 feet, although it has also been observed above 13,000 feet. Most of the available documentation suggests that this elusive bat roosts among trees in forested areas. It has been observed on the islands of Hawai'i, Maui, Moloka'i, O'ahu, and Kaua'i.	May occur in the action area. Bat roosting could occur in the ornamental landscaping and mixed riparian forest habitats of the action area, and foraging could occur on the Hanapēpē River.	May affect, but is not likely to adversely affect.
Reptiles				
Green sea turtle (<i>Chelonia mydas</i>)	Threatened	The green sea turtle is found worldwide in warm seas. They occupy three habitat types: open beaches, open sea, and feeding grounds in shallow, protected waters. Nesting occurs throughout the Hawaiian archipelago. They have been documented transiting some Hawai'i rivers up to 2 miles (3 km) inland.	May occur in the shallow, protected waters of the Hanapēpē River. The action area contains habitats that could support green turtle foraging.	May affect, but is not likely to adversely affect.
Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	Endangered	The hawksbill sea turtle is found in warm tropical waters worldwide. The hawksbill turtle is a shy tropical reef dwelling species that feeds on jellyfish, sea urchins, and sea sponges. It may also eat algae that grows on the reef. In Hawai'i, nesting occurs on the islands of Hawai'i, Maui, Moloka'i, and O'ahu.	Unlikely to occur in the shallow, protected waters of the Hanapēpē River. The action area contains habitats that could support hawksbill sea turtle foraging.	May affect, but is not likely to adversely affect.

*** Federal (USFWS) status definitions:**

Endangered: Any species considered by the USFWS as being in danger of extinction throughout all or a significant portion of its range. The ESA specifically prohibits the take of a species listed as endangered. *Take* is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

Threatened: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The ESA specifically prohibits the take (see definition above) of a species listed as threatened.

Proposed: Any species of fish, wildlife, or plant that is proposed in the *Federal Register* to be listed under Section 4 of the ESA.

† Unless otherwise noted, data are from USFWS (2014b).

5.2. Critical Habitat

No designated or proposed critical habitat for threatened or endangered species occurs in the action area.

6. EFFECTS ANALYSIS

Federally protected species that may be affected by the proposed action are discussed in detail in this section.¹ These species are Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, and Hawaiian duck (collectively referred to as waterbirds); nēnē; Hawaiian petrel, Newell's shearwater, and band-rumped

¹ Species that become federally listed as endangered or threatened also become listed under the same classification (endangered or threatened) in the State of Hawai'i (Hawaii Revised Statutes 195D-4).

storm petrel (collectively referred to as seabirds); Hawaiian hoary bat; Hawaiian monk seal; and green sea turtle and hawksbill sea turtle (collectively referred to as sea turtles).

6.1. Waterbirds

The Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, and Hawaiian duck constitute the waterbird group. Because these species share similar habitat needs and biological characteristics, they can be discussed as a single group. These waterbirds were listed as endangered species in 1967 under the Federal ESA and are also listed as State of Hawai'i endangered species. The Hawaiian coot, Hawaiian gallinule and Hawaiian duck nest throughout the year. The breeding season for the Hawaiian stilt is between February and August (Robinson et al. 1999).

Hawaiian waterbirds are most likely to be found in areas associated with wetlands and waterways such as the Hanapēpē River. These waterbirds are found in a variety of wetland habitats such as freshwater marshes and ponds, coastal estuaries and ponds, artificial reservoirs, kalo or taro (*Colocasia esculenta*) lo'i or patches, irrigation ditches, sewage treatment ponds, and in the case of the Hawaiian duck, montane streams and marshlands (USFWS 2011a).

The Hawaiian coot occurs on all the main Hawaiian Islands except Kahoolawe with an estimated population of 1,000 to 2,000 individuals. On Kaua'i, the Hawaiian coot is usually found in lowland valleys (USFWS 2014b). The population trend has been increasing over the past 30 years (USFWS 2011a, Reed et al. 2011). This species is associated with emergent marsh habitat in lowland valleys, reservoirs, and occasionally in high-elevation plunge pools. Nests are typically built on either semi-floating mats of vegetation or emergent marsh vegetation, but the coot is adaptive and opportunistic when choosing a nest location (USFWS 2011a). It is a generalist feeder, obtaining food near the water surface, diving, foraging in sand or mud, and grazing on upland grassy sites (USFWS 2011a). It typically feeds close to nesting areas. Although there is no nesting habitat in the action area for this species, it could forage and loaf in the waters of the Hanapēpē River.

The Hawaiian gallinule is only found on O'ahu and Kaua'i. The population trend is thought to be increasing or stable (USFWS 2011a, Reed et al. 2011). The Kaua'i population is found in lowland wetlands and valleys taro ponds, irrigation canals, and some artificially created ponds. A sizable population is found at the Hanalei National Wildlife Refuge (USFWS 2014b). This species favors dense emergent vegetation near open water, floating or barely emergent mats of vegetation, and water depths of less than 3 feet (0.91 m). It prefers freshwater over saline or brackish water. Nest are typically constructed in areas with standing freshwater less than 2 feet (0.60 m) deep by folding emergent vegetation over into a platform. In areas where emergent vegetation is lacking, nests can be made on the ground if tall vegetative cover is nearby (USFWS 2011a). A preferred gallinule habitat—dense emergent marsh—is not present in the action area.

Hawaiian stilt abundance varied between 1,100 and 1,783 individuals between 1997 and 2007, with fewer than 500 occurring on Kaua'i (USFWS 2014b, 2011a). The statewide population has been increasing over the past 30 years (Reed et al. 2011; USFWS 2011a). Hawaiian stilts use a variety of aquatic habitats, but they prefer to loaf in open mudflats, sparsely vegetated pickleweed mats, and open pasture lands. Specific water depths of 5 inches (12.7 centimeters [cm]) are required for optimal foraging. Nest sites are frequently separated from feeding sites, and they are adjacent to or on low islands within bodies of fresh, brackish, or salt water. Although there is no nesting habitat for this species in the action area, it could forage in the shallow waters of Hanapēpē River.

The Hawaiian duck population was estimated at 2,525 individuals in 2002, with approximately 2,000 occurring on Kaua'i and Ni'ihau (USFWS 2014b). The Hawaiian duck may use a variety of wetland habitats for nesting and foraging, including freshwater marshes, flooded grasslands, coastal ponds, streams, montane pools, and forest swamplands at elevations ranging from sea level to 9,900 feet (3,000 m) (USFWS 2011a). Nests occur on the ground near water, but little else is known of specific nesting habits (USFWS 2011a). This species could forage and loaf in the waters of the Hanapēpē River. Low-quality nesting habitat occurs in the mixed riparian forest vegetation along the banks of the Hanapēpē River. It is unlikely Hawaiian ducks would nest there due to increased chances of nest predation by dogs, cats, and rats.

The most significant causes of decline for all four waterbird species are loss and degradation of wetland habitat and predation by introduced animals (e.g., rat, dog, cat, American bullfrog [*Rana catesbeiana*], fish, and mongoose [*Herpestes javanicus*]). Other factors that have contributed to waterbird population declines include modification of hydrology, alteration of habitat structure and vegetation composition by invasive non-native plants, loss of riparian vegetation and water quality degradation due to grazing, disease, and environmental contaminants (USFWS 2011a).

6.1.1. Effects Analysis and Determination

Waterbirds were not observed during the site visit; however, waterbirds are known to occur approximately 1,200 feet (365 m) north east of the action area in the Hanapēpē Taro Fields. Because of their close proximity to the project, the Hawaiian coot, Hawaiian stilt, and Hawaiian duck may use the foraging and loafing habitat in and around the Hanapēpē River in the action area (Appendix A, Figure A2). Although the habitat is low-quality, the Hawaiian duck may nest in and around the mixed riparian forest vegetation type within the project area.

Permanent removal of foraging and nesting habitat would constitute a long-term *direct* impact. Approximately 1.9 acres would be permanently removed under the proposed action. Only a portion of this constitutes foraging habitat for waterbirds, given that much of the project area is roadway. Temporary vegetation removal would be reclaimed following construction. This impact would be discountable due to the small area of impact and availability of adjacent foraging and nesting habitat (e.g., nearby taro fields as well as on other portions of Hanapēpē River) for displaced waterbirds to use.

Short-term direct impacts to waterbirds could occur if human activity, noise, and removal of vegetation disrupt nesting adults, causing temporary or permanent abandonment of nest, ducklings, and/or chicks, which could in turn increase the likelihood of nest failure, predation, exposure, or trauma. Disturbance to duckling- and/or chick-rearing areas can result in separation of young from adults, which often results in duckling/chick mortality due to predation, exposure, and/or trauma. However, short-term direct impacts are unlikely to occur because of the conservation measures listed for waterbirds in section 2.5.

Human noise and disturbance associated with construction activities could cause a short-term indirect impact by the temporarily displacement of waterbirds and could reduce the amount of nest, roost, and/or forage habitats available. This displacement could alter an individual's typical nesting, foraging, and roosting patterns. This impact would be insignificant because the displacement would only occur while construction activities last.

Because all impacts on the Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, and Hawaiian duck would be discountable or insignificant, the proposed action *may affect, but is not likely to adversely affect*, individuals or populations of these species.

6.2. Hawaiian Goose (nēnē)

The nēnē is adapted to a terrestrial and largely non-migratory lifestyle in the Hawaiian Islands, with little dependence on freshwater habitat. The nēnē is capable of both inter-island and high-altitude flight (Banko et al. 1999; Miller 1937). After nearly becoming extinct in the 1940s and 1950s, the nēnē population has slowly been rebuilt through captive-breeding programs. Wild populations of nēnē occur on Hawai'i, Maui, and Kaua'i. The nēnē was listed as endangered species in 1967 under the ESA and is included on the State of Hawai'i's Endangered Species List. The population of nēnē was estimated in 2010 at 1,888–1,978 individuals, with the largest population on Kaua'i (USFWS 2011c). Approximately 400 birds were slated to be moved from Kaua'i to Maui, Moloka'i, and Hawai'i under an emergency declaration by then-governor Abercrombie. To date, most of these birds has been moved to Hawai'i Island.

The nēnē has an extended breeding season, with eggs observed in all months except May, June, and July, although most nest during the rainy (winter) season between October and March (Banko et al. 1999; Kear and Berger 1980). Nēnē nest on the ground in a shallow scrape in the dense shade of a shrub or other vegetation. During molt, adults are flightless for a period of 4–6 weeks. Molt occurs after egg hatching, such that the adults generally attain their flight feathers at about the same time as their offspring. When flightless, goslings and adults are extremely vulnerable to predators such as dogs, cats, and mongoose. From June to September, family groups join others in post-breeding flocks, often far from nesting areas.

Nēnē occupy various habitat types including beach strand, shrubland, grassland, and lava rock at elevations ranging from coastal lowlands to alpine areas (Banko 1988; Banko et al. 1999). The geese eat plant material, and the composition of their diet depends largely on the vegetative composition of their surrounding habitats. Most nēnē food items are leaves and seeds of grasses and sedges, leaves and flowers of various herbaceous composites, and fruits of several species of shrubs (Black et al. 1994; Banko et al. 1999). They appear to be opportunistic in their choice of food plants as long as the plants meet their nutritional demands (Banko et al. 1999; Woog and Black 2001).

The main factor limiting the recovery of nēnē populations, is predation by introduced mammals, most notably cats, rats, and mongoose (USFWS 2004). Additional threats include limited access or availability to nutritional resources during breeding, and anthropomorphic disturbances, including car strikes, disturbance of nesting and feeding, and fatalities at golf courses. Breeding habitat, particularly at low elevations, may be limited (USFWS 2004).

6.2.1. Effects Analysis and Determination

Although nēnē were not observed during the field surveys, suitable foraging habitat is present in the ruderal vegetation type along the river banks and highway as well as the ornamental vegetation type (mowed lawn) (Appendix A, Figure A1).

The proposed action would remove suitable foraging habitat for nēnē for the staging area north of the bridge. Removal of foraging habitat would remove a potential food source, negatively impact the nēnē that typically forage near the bridge. This impact would be short-term and would only occur for the duration of construction. Reducing the amount of available forage could impact the health of individuals; however, because a small amount of foraging habitat would be removed, it would not be likely to affect nest success or population growth. Furthermore, abundant foraging habitat is available adjacent to the project area along the Hanapēpē River, into which the nēnē could move.

In the short term, the human noise and disturbance associated with construction activities could temporarily displace nēnē from foraging habitat. Displacement from available forage could impact the health of these individuals; however, because a small amount of foraging habitat would be removed, it

would not likely affect nest success or population growth. Furthermore, abundant foraging habitat is available adjacent to the project area along the Hanapēpē River, into which the nēnē could move.

Implementation of the proposed action would not increase the potential for vehicle strike. This is because the replacement bridge will have two 12-foot-wide (4-m-wide) travel lanes like the existing bridge and the posted speed will remain at 35 mph (56 kph).

Because all impacts on the nēnē would be discountable, the proposed action *may affect, but is not likely to adversely affect*, individuals or populations of the species.

6.3. Seabirds

The endangered Hawaiian petrel, threatened Newell's shearwater, and proposed band-rumped storm-petrel constitute the seabirds group. Because these species share similar habitat needs and biological characteristics, they can be discussed as a single group.

The Hawaiian petrel was listed as an endangered species on March 11, 1967 and is listed on the State of Hawai'i's Endangered Species List. The Hawaiian petrel was once abundant on all main Hawaiian Islands except Ni'ihau (Mitchell et al. 2005). The population was most recently estimated to consist of approximately 20,000 individuals, with 4,000–5,000 breeding pairs (Spear et al. 1995).

The Newell's shearwater was listed as a threatened species by the USFWS in 1975 and is listed as threatened by the State of Hawai'i. The largest breeding population of Newell's shearwater occurs on Kaua'i (Telfer et al. 1987; Ainley et al. 1995, 1997; Day et al. 2003) and has also been documented on Hawai'i (Reynolds et al. 1997), Moloka'i (Day and Cooper 2002), and O'ahu (Day and Cooper 2008).

The band-rumped storm petrel is proposed endangered for listing and is on the State of Hawai'i's Endangered Species List. Listing of the band-rumped storm petrel under the ESA is anticipated to occur in 2016. Band-rumped storm petrels are considered the rarest breeding seabird in Hawai'i (Banko et al. 1991; Slotterback 2002). In the Pacific Ocean, breeding colonies have been documented in the Galapagos Islands, Japan, and the Hawaiian Islands (Pyle and Pyle 2009; USFWS 2015).

The habitat used for seabird nesting is diverse and ranges from xeric environments with little or no vegetation, such as at Haleakalā National Park on Maui, to wet forests dominated by 'ōhi'a (*Metrosideros polymorpha*) with uluhe (*Dicranopteris linearis*) understory, such as those found on Kaua'i (Mitchell et al. 2005). Nests are located in various naturally occurring features such as lava tubes, cracks in tumuli (fractured hills on the surface of pāhoehoe flows), spaces created by uplift of pāhoehoe slabs, and other miscellaneous natural features (Hu et al. 2001; Mitchell et al. 2005; Pyle and Pyle 2009).

The main factors contributing to population declines of ground-nesting seabirds such as Hawaiian petrels are habitat degradation; the loss of nesting habitat; predation of eggs, hatchlings, and adults at nesting sites by introduced mammals (e.g., dogs, mongooses [*Herpestes javanicus*], cats, rats, and pigs [*Sus scrofa*]); and urban lighting associated with disorientation and fall-out of juvenile birds (Banko et al. 1991; Ainley et al. 1997; Mitchell et al. 2005; Hays and Conant 2007).

6.3.1. Effects Analysis and Determination

The action area does not provide suitable nesting or foraging habitat for these seabirds. However, breeding individuals may fly over the action area at night while travelling between upland nesting and ocean foraging sites. Disorientation and fall-out as a result of light attraction could occur to individuals attracted to nighttime construction lighting. To minimize impacts to the surrounding residential areas,

night work is not anticipated. In addition, the conservation measures regarding nighttime lighting, as listed in section 2.5, would avoid and minimize the potential for light-attraction impacts to these species. Implementation of these measures would reduce the potential for adverse impacts to unlikely and discountable. Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

Because all impacts on the Hawaiian petrel and Newell's shearwater would be discountable, the proposed action *may affect, but is not likely to adversely affect*, individuals or populations of these species.

Because all impacts on the band-rumped storm petrel would be discountable, the proposed action is *not likely to jeopardize the continued existence* of individuals or populations of the species.

6.4. Hawaiian Hoary Bat

The Hawaiian hoary bat was listed as an endangered species on October 13, 1970, under the ESA and the State of Hawai'i's Endangered Species List. Hawaiian hoary bat is found on Hawai'i, Maui, Moloka'i, O'ahu, and Kaua'i and has been observed from sea level to approximately 13,000 feet (3,963 m) (USFWS 2014b).

The Hawaiian hoary bat is the only native terrestrial mammal that is still extant within the Hawaiian Islands (USFWS 1998). Hawaiian hoary bats use both closed habitats near vegetation such as tunneled roadways, and open habitats adjacent to forests, above tree canopies, and over open oceans (Jacobs 1996). Hawaiian hoary bats are insectivores and are regularly observed foraging over streams, reservoirs, and wetlands up to 300 feet (100 m) offshore (U.S. Department of Agriculture 2009). Hawaiian hoary bats forage in open, wooded, and linear habitats within a wide range of vegetation types (USFWS 2014b). The bat typically roosts in dense canopy foliage or in the subcanopy when canopy is sparse, with open access for launching into flight (U.S. Department of Agriculture 2009).

Hawaiian hoary bats are believed to be threatened by habitat loss, pesticides, predation, and roost disturbance. Reduction of tree cover and indirect impacts from the use of pesticides may be the primary causes of recent declines (USFWS 2014b).

6.4.1. Effects Analysis and Determination

Acoustic surveys for Hawaiian hoary bats were not conducted, but areas of suitable habitat for roosting and foraging were noted during the biological survey. The Hanapēpē river corridor is suitable for bat foraging. The Hawaiian hoary bat has been observed roosting in mango and coconut trees and could roost in the ornamental trees and mixed riparian forest vegetation type in the action area (Appendix A, Figure A2).

Direct impacts on bats could occur during vegetation removal if a juvenile bat that is too small to fly, but too large to be carried by a parent, is present in a tree or branch that is cut down. However, because of the conservation measure that trees will not be cut during the breeding season (June 1 through September 15), direct impacts are unlikely to occur. The potential for direct impacts would also be reduced by ensuring the top wire strand of surrounding fences (if present) is barbless, as listed in the conservation measures.

In the short term, the human noise and disturbance associated with construction activities could temporarily displace bats from roosting and/or foraging habitats. This displacement could alter an individual's typical foraging and roosting patterns, forcing it to expend energy to search for new foraging and roosting locations. Displacement from roosting habitat could lead to increased predation on individual bats, especially if a bat is forced to leave its roost during daylight hours, making it more visible to

potential predators. The potential for these impacts is low considering the project will occur on and immediately adjacent a heavily traveled roadway, and therefore the bats present would already be accustomed to high levels of background noise. Furthermore, high-quality roosting and foraging areas occur within the action area, into which bats could be displaced.

Because all impacts on the Hawaiian hoary bat would be discountable or insignificant, the proposed action *may affect, but is not likely to adversely affect*, individuals or populations of the species.

6.5. Hawaiian Monk Seal

The Hawaiian monk seal is one of the rarest marine mammals on earth. The Hawaiian monk seal is listed as endangered under the ESA and is listed on the State of Hawaiʻi's Endangered Species List. It is also protected by the Marine Mammal Protection Act of 1972 (USFWS 2011b).

Hawaiian monk seals spend most of their life at sea, but also rely on land habitat for resting, molting, pupping, nursing, and avoiding marine predators. Monk seals can often be seen hauling-out on sand, corals, and volcanic rock to rest during the day and to give birth, preferring protected beaches surrounded by shallow waters when pupping (NOAA NMFS 2015b). Pupping has been observed in a variety of terrestrial coastal habitats mostly consisting of sandy, protected beaches adjacent to shallow sheltered aquatic areas (NOAA 2015).

Hawaiian monk seals are considered foraging generalists, and the characteristics of their foraging habitat are variable. They generally hunt outside of the immediate shoreline in waters 60–300 feet (18–90 m) deep, but have been known to forage at depths of up to 1,000 feet (330 m) (NOAA NMFS 2015b). There are also accounts of seals traveling up rivers and streams, particularly on Hawaiʻi Island and Kauaʻi, to feed and rest (personal communication, C. Littnan, NMFS, September 3, 2015).

The best current population estimate provided for the Hawaiian monk seal is 1,209 individuals (Carretta et al. 2013). The population is often discussed and managed as two subpopulations, even though they are not genetically distinct. One subpopulation occurs in the NWHI and one occurs in the MHI. Seals from the MHI subpopulation are unlikely in the action area.

Approximately 85% of the Hawaiian monk seal population occurs in the NWHI. The MHI subpopulation was estimated at 150–200 individuals in 2011 (personal communication, C. Littnan, NMFS, August 18, 2015). Seal abundance in the NWHI subpopulation remains in decline. The MHI subpopulation is experiencing increasing abundance and reproductive success, which is thought to be a result of a lower overall seal density and the lack of large predators that compete for food and kill pups (NOAA NMFS 2007). Trends in abundance may also be linked to changes in ocean productivity that are determined by various climate patterns (NOAA 2015).

Threats to Hawaiian monk seals differ in each subpopulation. In the MHI subpopulation, human threats in the form of interactions with fishing gear, boat strikes, disturbances of mothers and their pups on beaches, and exposure to disease are threats. Other threats include loss of haul-out and pupping beaches due to erosion, male aggression toward females, and low genetic diversity (Antonelis et al. 2006; Johanos et al. 2010; NOAA NMFS 2015b). Shark predation, food limitation, competition, and entanglement in marine debris are threats to the NWHI subpopulation. The subpopulation in the low-lying NWHI is particularly susceptible to the habitat loss as a result of climate change.

6.5.1. Effects Analysis and Determination

The action area is upstream from the ocean along the Hanapēpē River in an area not ideal for Hawaiian monk seal basking or pupping (personal communication, T. Mercer, NMFS, August 26, 2015); however, Hanapēpē River within the action area could provide habitat for feeding and resting.

Downstream of the action area, monk seals could occur in Hanapēpē Bay. Between 2005 and 2014, there were 12 reported sightings of monk seals at Hanapēpē Bay. Of these sightings, 5 reports consisted of 4 uniquely identifiable seals (Mercer 2015). During aerial surveys in 2000, 2001, and 2008, no Hawaiian monk seals were sighted in the action area. No monk seal pups have been born at Hanapēpē Bay (Mercer 2015).

Monk seals could also be temporarily displaced from riverine habitat during construction. Displacement from riverine habitat would not have a significant impact on monk seals, because foraging individuals could find similar resources upstream or downstream from the construction site or return to marine habitats. Evidence suggests that Hawaiian monk seals have less sensitive hearing in water than other pinnipeds (Muñoz et al. 2011); therefore, the magnitude of noise impacts may be less for seals foraging in the water.

Disturbance from harassment by construction workers would not occur because workers would be informed not to feed, touch, ride, or otherwise intentionally interact with any listed species, including the monk seal. Construction activities would not occur if a monk seal is in the construction area or within 150 feet (46 m) of the construction area, as listed in the conservation measures. Because of the monk seal conservation measures (buffers from individuals and pups, preventing human interaction), direct impacts would be insignificant.

Indirect harm from the accidental introduction of sediments, contaminants, or construction-related debris into Hanapēpē River has the potential to reduce water quality. However, these impacts would be unlikely and discountable because conservation measures and BMPs, such as those described in section 2.5, would be in place to minimize the potential for siltation, contaminants, or construction-related debris. These measures include fueling equipment away from the water, inspecting and cleaning all equipment before daily operations, training personnel for emergency spill prevention, appropriate use of erosion control practices, and not stockpiling materials in the water.

The primary threats to monk seals in the MHI (entanglement in fishing gear, impact from boats, and predation by fishermen) are not expected to increase as a result of the proposed action.

Because all impacts on the Hawaiian monk seal would be discountable or insignificant, the proposed action *may affect, but is not likely to adversely affect*, individuals or populations of the species.

6.6. Sea Turtles

The threatened green sea turtle and endangered hawksbill sea turtle constitute the sea turtle group. Because these species share similar habitat requirements and biological characteristics, as well as potential project impacts and conservation measures, they can be discussed as a single group. No sea turtle critical habitat has been designated in the waters of Hawai'i.

The green sea turtle is widely distributed throughout the world and found primarily in tropical and subtropical waters. They are the most common sea turtle found in the Hawaiian archipelago. Green turtles in Hawai'i are genetically distinct from other green sea turtle populations (Bowen et al. 1992). In 1978, the species was listed as threatened throughout most of its range, except for the breeding populations in

Florida and Mexican Pacific Coasts, which were listed as endangered (USFWS and NOAA 2015). The green turtle is also listed as threatened by the State of Hawaiʻi. Despite a declining trend globally, green turtle populations in Hawaiʻi are estimated to have increased by 53% over the last 25 years (NOAA NMFS 2015d). Green sea turtles are generally common along all coastlines of the MHI from the shore out to at least the 100-foot (30.48-m) bathymetry contour. Green sea turtles have been observed transiting Hawaiʻi rivers up to 2 miles (3 km) inland (Clarke et al. 2012).

The hawksbill sea turtle was listed as an endangered species in 1970 and is listed on the State of Hawaiʻi's Endangered Species List. The hawksbill sea turtle is found circumtropically in waters of the Atlantic, Pacific, and Indian Oceans. Current global estimates are between 60,000 and 78,000 nesting adult female hawksbills. One hundred adult females were tagged on the Island of Hawaiʻi between 1991 and 2009 (Sietz et al. 2012). Hawksbill sea turtle hatchlings are believed to inhabit the pelagic environment, taking shelter in floating algal mats and drift lines of flotsam and jetsam. After a few years, small juveniles recruit to coastal foraging grounds (NOAA NMFS 2014). Coral reef ledges and caves provide shelter for resting hawksbill sea turtle both during the day and at night. Hawksbill sea turtles are known to exhibit high site fidelity, returning to the same resting spot night after night. They can also be found near rocky outcrops and high energy shoals, which are optimum sites for sponge growth, a preferred species of forage (NOAA NMFS 2014). Hawksbill turtles are not regularly reported from Kauaʻi.

In Hawaiʻi, disease and habitat loss (i.e., coral reef communities) are the primary threats to the green and hawksbill sea turtle, respectively. Other threats include marine debris (e.g., ingestion and entanglement), boat strikes, water contamination (e.g., runoff, dredging and noise), harvesting (e.g., eggs, consumption, and commercial product), loss or degradation of nesting habitat (e.g., artificial lighting and encroaching non-native vegetation), and nest and hatchling predation (NOAA NMFS 2015d).

6.6.1. Effects analysis and determination

No sea turtles were incidentally observed during SWCA's field survey, however, green sea turtles have been observed transiting Hawaiʻi rivers up to 2 miles (3 km) inland (Clarke et al. 2012), and could use Hanapēpē River habitat for foraging and as protection from predators (Clarke et al. 2012). Sea turtles may also be found foraging in marine waters nearby outside the action area.

In the short term, construction activities (specifically, noise and light) could temporarily impact sea turtles by displacing individuals from the riverine habitats in the action area. This displacement could alter an individual's typical foraging patterns, forcing it to expend energy to search for new foraging locations. However, displacement from Hanapēpē River would not have a significant impact on sea turtles because foraging individuals could find similar resources upstream or downstream from the construction site or return to marine habitats.

Human-related disturbance (e.g., harassment) and mortality (e.g., impact from boat propellers, gill net entanglement, and fishing activities) are not likely to increase as a result of the proposed action. The implementation of the conservation measures in section 2.5 (e.g., not working within 150 feet [46 m] of sea turtles, removing construction-related entanglement threats and potential for human interaction, water quality BMPs) would reduce construction activities to an unlikely and discountable impact.

Indirect harm from the accidental introduction of sediments, contaminants, or construction-related debris into Hanapēpē River has the potential to reduce water quality in the river. However, the potential for impacts due to siltation, contaminants, or construction-related debris would also be unlikely and discountable by ensuring appropriate measures and BMPs are in place, as described in Section 2.5. These include fueling equipment away from the water, inspecting and cleaning all equipment before daily operations, training personnel for emergency spill prevention, appropriate use of erosion control practices,

and cleaning up. To avoid exacerbating the incidences of disease such as fibropapillomatosis in green sea turtles as a result of the proposed action, conservation measures and BMPs would be implemented to ensure that the proposed action does not increase nitrogen or other nutrient loads to nearshore waters. These contaminants are known to promote algae growth into the surrounding waters (Smith et al. 2010).

Because all impacts on sea turtles would be discountable or insignificant, the proposed action *may affect, but is not likely to adversely affect*, individuals or populations of the species.

7. CONCLUSION

Twelve federally listed species have the potential to use the habitat of the action area. Potential impacts from the proposed action to these species are expected to be temporary, discountable, and insignificant due to implementation of the project conservation measures.

In conclusion, the proposed project *may affect, but is not likely to adversely affect*, the federally listed Hawaiian petrel, Newell's shearwater, Hawaiian stilt, Hawaiian coot, Hawaiian gallinule, Hawaiian duck, nēnē, green sea turtle, hawksbill sea turtle, Hawaiian hoary bat, and Hawaiian monk seal. The proposed project is *not likely to jeopardize the continued existence* of the band-rumped storm petrel, which is proposed for listing.

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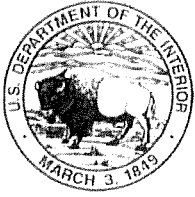
Appendix A
Photographs of the Survey Area



Figure A1. Ruderal vegetation along the east side of Hanapēpē River between Kaumuali'i Highway and Hanapēpē Road.



Figure A2. Dense riparian vegetation along the stream bank.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
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In Reply Refer To:
01EPIF00-2016-1-0228

Mr. Michael Will
U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 380
Lakewood, Colorado 80228

AUG 04 2016

Subject: Informal ESA Section 7 Consultation and FWCA Recommendations for
Hanapepe Bridge Replacement Project, Kauai

Dear Mr. Will:

The U.S. Fish and Wildlife Service (Service) received your letter, dated February 23, 2016, requesting our concurrence that the proposed project may affect, but is not likely to adversely affect (NLAA) the following federally listed species: the endangered Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*) (collectively referred to as Hawaiian waterbirds); Hawaiian goose (*Branta sandvicensis*); Hawaiian hoary bat (*Lasiurus cinereus semotus*); and the Hawaiian petrel (*Pterodroma sandwichensis*), the threatened Newell's shearwater (*Puffinus auricularis newelli*); and a candidate proposed for listing the band-rumped storm-petrel (*Oceanodroma castro*) (hereafter collectively referred to as seabirds). The Fish and Wildlife Coordination Act of 1934 (FWCA), as amended (16 U.S.C. 661 *et seq.*; 48 Stat. 401), provides a procedural framework for the consideration of fish and wildlife conservation measures to assist planning and implementation of Federal water resource development projects. The Service met with the Federal Highways Administration (FHWA), Central Federal Lands Highway Division (CFLHD), CH2M HILL (consultant for FHWA), SWCA (consultant for FHWA), the National Oceanic and Atmospheric Administration Fisheries, the State of Hawaii Division of Aquatic Resources (HDAR), the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers (USACE) on December 8 and December 15, 2015 to discuss project descriptions and biological resource assessments for the Hawaii Bridges Program. In our December meetings, the Service expressed concerns regarding mobilization of bedded sediments due to construction activities. In a letter, dated April 26, 2016, we summarized these concerns and provided recommendations to incorporate into project planning. FHWA provided us a summary of measures, in a letter dated June 21, 2016, which will be implemented during construction to protect water quality and aquatic resources. In addition to those measures, FHWA staff confirmed in a meeting on June 28, 2016 with us that aquatic fish passage will be maintained through the duration of the proposed project.

The findings and recommendations in this consultation are based on the following: (1) your consultation request; (2) FHWA's Biological Assessment; and (3) other information available to us. Copies of pertinent materials and documentation are maintained in an administrative record in the Service's Pacific Islands Fish and Wildlife Office in Honolulu, Hawaii. This response is in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), FWCA, and the Clean Water Act (CWA), as amended (33 U.S.C. 1251 *et seq.*; 62 Stat. 1155).

Project Description

The FHWA proposes to replace Hanapepe River Bridge located at milepost 16.6 along Kaunualii Highway (Route 50), in the town of Hanapepe on the island of Kauai. The replacement of Hanapepe River Bridge will improve the safety and reliability of the bridge by addressing existing structural and functional deficiencies.

The proposed bridge replacement project includes the construction of a two-way temporary bypass bridge on the north side of the existing bridge. The new bridge will be 308 feet (94 m) long and 52 feet (16 m) wide, including shallow girders, cast-in-place deck slab, sidewalks, and concrete railing. Existing piers and pier caps will be cut at the river mud-line and removed. Two new piers will be installed and the foundation type will consist of driven piles or drilled shafts. Existing abutments will be removed. New abutments will be constructed behind existing abutments and set back from main channel. Utilities attached to the existing bridge and an overhead line will be temporarily relocated to the bypass bridge during construction. Two existing light poles on either side of the bridge will be replaced.

An equipment staging area will be located above the levee along the east bank. In general, construction equipment will include drill rig, crane, excavator, backhoe, front-end loader, grader, forklift, semi-trucks, dump trucks, concrete trucks, compactors, paving equipment, and compressors. Best Management Practices (BMPs) will be implemented to protect water quality, as recommended by NMFS and the Service.

ESA Conservation Measures

To avoid and minimize impacts to federally listed species, the following conservation measures are part of the project description:

- If an endangered Hawaiian waterbird is present or flies into the area during ongoing activities, all activities within 100 feet (30 m) of the bird will cease, and the bird will not be approached. Work may continue only after the bird leaves the area of its own accord. If a waterbird nest with eggs or chicks/ducklings is discovered in the project area during construction, work will cease within 100 feet (30 m) of the nest until the chicks/ducklings have fledged. Waterbird nests, chicks, or broods found in the project area before or during construction will be reported to the Service within 48 hours.
- All regular on-site staff will be trained to identify Hawaiian goose, and they will know the appropriate steps to take if Hawaiian goose (geese) is present. If a Hawaiian goose (geese) is found in the area during ongoing activities, all activities within 100 feet (30 m) of the bird will cease, and the bird will not be approached. If a nest is discovered, the Service will be contacted. If a nest is not discovered, work may continue after the bird leaves the area of its own accord.

- To avoid and minimize impacts to seabirds, construction activity will be restricted to daylight hours during the seabird peak fallout period (September 15-December 15). All outdoor lights will be shielded to prevent upward radiation. Outside lights not needed for security and safety will be turned off from dusk through dawn during the seabird peak fallout
- To avoid impacts to the Hawaiian hoary bat, any fences that are erected as part of the project will have barbless top-strand wire. No fences in the survey area were observed with barbed wire during the survey; however if fences are present, the top strand of barbed wire will be removed or replaced with barbless wire. No trees taller than 15 feet (4.6 m) will be trimmed or removed as a result of this project between June 1 and September 15 to avoid impacts to Hawaiian hoary bats.
- Construction activities will not occur if a Hawaiian monk seal (*Neomonachus schauinslandi*), Green sea turtle (*Chelonia mydas*), and/or Hawksbill sea turtle (*Eretmochelys imbricata*) is in the construction area or within 150 feet (46 m) of the construction area. Construction will only begin after the animal voluntarily leaves the area. If a monk seal/pup pair is present, a 300-foot (91-m) buffer will be observed.
- Any construction-related debris that may pose an entanglement threat to monk seals and turtles will be removed from the construction area at the end of each day and at the conclusion of the construction project.

Fish and Wildlife Coordination Act Comments

Important fish and wildlife resources occur throughout the proposed project area, including freshwater and brackish environments of Hanapepe River and the nearshore marine areas of Hanapepe Bay. The resources include endangered and threatened species, coral reefs, fisheries, non-coral invertebrates, and rare, native species. Federally listed species that occur or transit through the project area include Hawaiian waterbirds, Hawaiian goose, Hawaiian hoary bat, and seabirds. The endangered Hawksbill sea turtle and threatened green sea turtle are known to occur in nearshore waters around Hanapepe Bay.

We appreciate your coordination with us to incorporate fish and wildlife conservation measures into your project description, including measures to avoid and minimize impacts to listed species. Our primary concern regarding the proposed project is the potential for project-related impacts to sensitive marine biological resources that may occur in the vicinity of the project site. Construction activities to remove piers and construct foundations could result in the release of contaminants potentially occurring in river sediments. We are concerned that vertebrate and invertebrate larvae within estuarine and nearshore marine environments may be at risk of exposure to contaminants during construction activities as a consequence of mobilized sediments. We are concerned that larvae exposure to contaminants could result in a loss of coral colonies and affect, indirectly, other marine animals and plants that rely upon coral habitat for shelter, forage, and reproduction.

The Service acknowledges that primary isolation and confinement BMPs are incorporated into the project description to avoid or minimize project-related degradation of water quality conditions that may impact fish and wildlife resources. We acknowledge that FHWA will install secondary BMPs (i.e., turbidity curtains) prior to the installation and removal of the primary

isolation and confinement BMPs to capture sediment that could be suspended during project activities. The Service also acknowledges that turbidity and pH monitors will be installed upstream and downstream of the project area to provide live time data for these variables. We acknowledge that if during construction a visible plume is observed or monitoring data indicates that primary and secondary BMPs are not performing adequately, FHWA will cease work and the BMP will be updated or replaced to ensure proper function. Based on stop work triggers provided to our office on August 2, 2016 which include FHWA-CFLHD will ensure that the permitted activity will not result in non-compliance or violations to the applicable State water quality standards specified in Hawaii Administrative Rules (HAR), Section 11-54-4.

We recommend that removal of piers and construction of foundations be scheduled to avoid the spawning period for most corals, which in Hawaii is April through August. Additionally, we recommend the following best management practices for the effective use of silt curtains where silt curtains are appropriate for use:

- 1) Full depth silt curtains should be used in all practical situations for this project.
- 2) The placement of silt curtains should remain as close as possible to the project boundary to minimize the secondary effects from increased sedimentation.
- 3) The curtains should be left in place (not moved or shifted) until the water turbidity has returned to ambient conditions.
- 4) Silt curtains should be secured properly to minimize them from breaking free and causing additional impact.

At the project location, visual monitoring of sediment control devices should be conducted prior to daily construction and hourly while construction activities are in progress. During construction periods, we recommend having a dedicated turbidity monitoring person that will take periodic turbidity measurements immediately surrounding the turbidity containment devices and along the nearby shoreline (considering the path in which water may flow). If the turbidity exceeds 1 NTU of the backgrounds levels (as determined daily prior to work as well as areas significantly outside the influence of the construction), then work should be suspended until the turbidity returns to baseline.

Endangered Species Act Comments

Your letter indicates that FHWA has determined that the proposed project may affect, but is not likely to adversely affect the Hawaiian coot, the Hawaiian duck, the Hawaiian moorhen, the Hawaiian stilt, the Hawaiian goose, the Hawaiian hoary bat, the Newell's shearwater, the Hawaiian petrel, and the band-rumped storm petrel. The Service acknowledges that the above conservation measures to avoid and minimize impacts to federally listed species are considered part of the project description. The conservation measures will be implemented at the project site. Any changes to, modifications of, or failure to implement these conservation measures may result in the need to reinitiate this consultation.

Summary

The Service encourages FHWA to incorporate our FWCA recommendations into project planning and design. Based on the above information and that measures will be implemented to avoid and minimize impacts to listed species and candidate species, we concur with your determination that the proposed project may affect, but is not likely to adversely affect the Hawaiian coot, the Hawaiian duck, the Hawaiian moorhen, the Hawaiian stilt, the Hawaiian goose, the Hawaiian hoary bat, the Newell's shearwater, the Hawaiian petrel, and the band-

rumped storm petrel. Unless the project description changes or new information reveals that the action may affect listed species in a manner or to an extent not considered, no further action pursuant to section 7 of the ESA is necessary.

We appreciate your efforts to conserve protected resources. If you have questions regarding this letter, please contact Adam Griesemer, Endangered Species Biologist (phone: 808-285-8261).

Sincerely,

A handwritten signature in black ink, appearing to read 'Aaron Nadig', written in a cursive style.

Aaron Nadig
Island Team Manager
Oahu, Kauai, Northwestern Hawaiian
Islands, and American Samoa

Cc: Mr. Paul Luersen, CH2M HILL
Mr. Michael Tosatto, NMFS
Mr. David Smith, State of Hawaii Division of Forestry and Wildlife
Dr. Bruce Anderson, State of Hawaii Division of Aquatic Resources

Appendix D
Archaeological Inventory Survey

DAVID Y. IGE
GOVERNOR OF HAWAII



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LAND
STATE PARKS

August 10, 2016

J. Michael Will
Federal Highways Administration
Central Federal Lands Highway Division
michael.will@dot.gov

IN REPLY REFER TO:
LOG NO: 2016.01214
DOC NO: 1607MN17
Archaeology
Architecture

Aloha Mr. Will:

SUBJECT: Chapter 6E-8 Review and National Historic Preservation Act (NHPA) Section 106 Review – Archaeological Inventory Survey Report for the Hanapēpē River Bridge Replacement Project Federal Highway Administration/Central Federal Lands Highway Division Contract No. DTFH68-13-R-00027 Hanapēpē Ahupua‘a, Kona District, Island of Kaua‘i TMK: (4) 1-9-007: 001, 013, 020, 034 por.; (4) 1-9-010: 014, 015, 046, 050 por.

Thank you for the opportunity to review the draft report entitled *Archaeological Inventory Survey Report for the Hanapēpē Bridge Replacement Project, Hanapēpē Ahupua‘a, Waimea District, Kaua‘i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) Contract DTFH68-13-R-00027 TMKs: [4] 1-9-007 portions of 001, 013, 020, 034; 1-9-010: portions of 014, 015, 046, 050* (Belluomini et al., March 2016). SHPD received the draft report in our Kapolei office on May 18, 2016.

The project is an undertaking according to 36CFR§800.4.16, due to the provision of federal funding from the Federal Highways Administration and the Federal Lands Highway Division. In consultation with the State Historic Preservation Division (SHPD), and at the request of CH2MHill, Cultural Surveys Hawai‘i, Inc. (CSH) conducted an archaeological inventory survey (AIS) to assist in identifying historic properties within the area of potential effect (APE) for the Hanapēpē River Bridge Replacement Project. Section 106 consultation is concurrent and ongoing. The AIS fulfills the requirements of Hawaii Administrative Rule (HAR) §13-275 and the *Secretary of the Interior’s Standards for Archaeology and Historic Preservation*.

The 2.9-acre APE is located along Kaunuali‘i Highway, near mile marker 16, where the highway crosses over the Hanapēpē River, and encompasses a portion of Iona Road as well as Kaunuali‘i Highway, which is owned by the State of Hawaii. The project includes the demolition and replacement of the bridge. A companion architectural study is being conducted by Mason Architects, Inc.

CSH conducted a 100% pedestrian survey of the APE and subsurface testing. Four historic properties were identified: the Hanapēpē River Bridge, State Inventory of Historic Places (SIHP) Site 50-30-09-2280; two retaining walls (Site 2281 and Site 2282); and an earthen/basalt berm (Site 2283). Mason Architects evaluated and determined Site 2280 to be eligible for inclusion in the National Register of Historic Places (NRHP) and the Hawaii Register of Historic Places (HRHP) under Criterion A (associated with events that have made a significant contribution to the broad patterns of our history) and Criterion C (embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction). Mason Architects assessed the retaining walls (Sites 2281 and 2282) as not eligible for either the NRHP or the HRHP pursuant to 36CFR60.4 and HAR§13-198-8. Mason Architects determined that the earthen ditch (Site 2283) is significant under Criterion A for the HRHP per HAR§13-198-8 and is also eligible for the NRHP under Criterion D.

Mr. Will
August 10, 2016
Page 2

The AIS report proposes that while the project adversely affects historic properties, thorough architectural documentation by Mason Architects serves as mitigation and recommends no additional archaeological work for the current project. The SHPD concurs with these recommendations.

The AIS meets the requirements of the *Secretary of the Interior's Standards for Archaeological Documentation* and HAR§13-276. **It is accepted with the understanding that the following minor revisions will be made:**

1. The management summary states that the cultural resources were assessed for significance in accordance with HAR§13-275-6, but does not provide the significance assessments. Please provide assessments.
2. The management summary states that the Hanapēpē River Bridge is eligible for the National and State Registers under criteria A [should be Criterion A], but the summary states it is eligible under A and C. Please correct.
3. Ensure throughout that the proper term is historic properties, not cultural resources.

Please send one hard copy of the report, clearly marked FINAL, along with a link to a pdf version to the Kapolei office. Please send one hard copy of the final report to the Kaua'i section.

SHPD looks forward to receiving an effect determination letter from the lead agency, which includes a summary of the findings from the Section 106 consultation.

You may reach the Kaua'i Lead Archaeologist Mary Jane Naone at Maryjane.naone@hawaii.gov or at (808) 271-4940 if you have questions regarding archaeological concerns. Please contact Architectural Historian Jessica Puff at (808) 692-8023 or Jessica.L.Puff@hawaii.gov for questions related to architecture.

Aloha,



Alan Downer, Ph.D.
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Final
Archaeological Inventory Survey Report for the
Hanapēpē River Bridge Replacement Project,
Hanapēpē Ahupua‘a, Waimea District, Kaua‘i,
Federal Highway Administration/
Central Federal Lands Highway Division
(FHWA/CFLHD) contract DTFH68-13-R-00027
TMKs: [4] 1-9-007:001 por. Hanapēpē River, 013 por., 020
por., and 034 por., and 1-9-010:014 por., 015 por., 046 por.
and 050 por., Kaumuali‘i Highway
and Iona Road Rights-of-Way

Prepared for
CH2M HILL
and on behalf of the
Federal Highway Administration (FHWA)
Central Federal Lands Highway Division (CFLHD)

Prepared by
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Management Summary

Reference	Archaeological Inventory Survey Report for the Hanapēpē River Bridge Replacement Project, Hanapēpē Ahupua‘a, Waimea District, Kaua‘i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) contract DTFH68-13-R-00027, TMKs: [4] 1-9-007:001 por. Hanapēpē River, 013 por., 020 por., and 034 por., and 1-9-010:014 por., 015 por., 046 por. and 050 por., Kaumuali‘i Highway and Iona Road Rights-of-Way (Belluomini et al. 2016)
Date	September 2016
Project Number(s)	<ul style="list-style-type: none"> • FHWA/CFLHD contract code: DTFH68-13-R-00027 • CH2MHILL Project Task ID: 499067.09.SU.CS • Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: HANAPEPE 7
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological permit number 15-03, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	FHWA/CFLHD, SHPD
Land Jurisdiction	State Department of Transportation (HDOT)
Project Proponent	FHWA/CFLHD, HDOT
Project Funding	FHWA/CFLHD, HDOT
Project Location	The project area is located along Kaumuali‘i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The project area encompasses the Hanapēpē River Bridge over Hanapēpē River, a portion of Iona Road and Kaumuali‘i Highway, areas on either side of Kaumuali‘i Highway, and Hanapēpē River. The project area is depicted on a portion of the 1996 Hanapepe U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Description	The proposed project would replace the Hanapēpē River Bridge and its approaches to maintain the Hanapēpē River crossing on HI-56 as a safe and functional component of the regional transportation system for highway users. The Hanapēpē Bridge is eligible for listing on the National Register of Historic Places (National Register). The existing Hanapēpē Bridge would be demolished and replaced with a new bridge.
Project Acreage	The project area includes approximately 2.9 acres (1.2 hectares).
Area of Potential Effect (APE)	The APE for the current project is defined as the entire 2.9-acre (1.2-hectare) project area.
Historic Preservation Regulatory Context	This AIS investigation was designed to comply with both Federal and Hawai‘i State environmental and historic preservation review legislation. Due to federal funding, this project is a federal undertaking, requiring compliance with Section 106 of the National Historic Preservation Act, the

	<p>National Environmental Policy Act, and Section 4(f) of the Department of Transportation Act. The proposed project is also subject to Hawai‘i State environmental and historic preservation review legislation (Hawai‘i Revised Statutes [HRS] §343 and HRS §6E-8/HAR §13-275, respectively).</p> <p>In consultation with the SHPD, this AIS investigation fulfills the requirements of HAR §13-13-276 and the <i>Secretary of the Interior’s Standards for Archaeology and Historic Preservation</i>. It was conducted to identify, document, and make National Register and Hawai‘i Register of Historic Places (Hawai‘i Register) eligibility recommendations¹ for any historic properties. This report is also intended to support any project-related historic preservation consultation with stakeholders, such as State and County agencies and interested Native Hawaiian Organizations (NHOs) and community groups, if applicable.</p> <p>A companion architectural study (Ruzicka 2015) is being conducted by Mason Architects, Inc. in conjunction with this AIS. When applicable, the information from the architectural study has been incorporated into the present AIS document.</p> <p>No previous archaeological studies have been conducted and no previously documented historic properties have been reported within the project area.</p>
Fieldwork Effort	<p>The fieldwork component of this AIS consists of a 100% pedestrian survey and subsurface testing. Fieldwork was conducted on 13 June and 14 June 2015 by CSH archaeologists Missy Kamai, B.A., Tom Martel, B.A., and Richard Stark, Ph.D. under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. This work required approximately 4 person-days to complete.</p>
Consultation	<p>The Hanapēpē River Bridge Replacement project is a HDOT and FHWA/CFLHD partnership project, which includes numerous proposed bridge improvement and replacement projects in the State of Hawai‘i. Presently, National Historic Preservation Act Section 106 consultation with community, agency, and Native Hawaiian Organizations has been initiated and is on-going. Cultural consultation is also being conducted by CSH for a cultural impact assessment (CIA) for Hanapēpē River Bridge (Ishihara and Hammatt 2015).</p>
Historic Properties Identified	<p>The AIS identified four historic properties within the project area:</p> <p>SIHP # 50-30-09-2280 is the Hanapēpē River Bridge. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai‘i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). SIHP # -2280 is evaluated as significant pursuant to HAR §13-275-6 under Criterion “a”</p>

	<p>(be associated with events that have made an important contribution to the broad patterns of our history) for its associations with the development of Kaua'i's Belt Road system and the significant role the bridge played in the history of Hanapēpē town, and 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) as an excellent example of later developments in concrete bridge construction on Kauai and represents the "work of a master". Ruzicka (2015) evaluated SIHP # -2280 as eligible to the National and Hawai'i Register under Criterion "A" (associated with events that have made a significant contribution to the broad patterns of our history), for its associations with the development of Kaua'i's Belt Road system and the significant role the bridge played in the history of Hanapēpē town, and Criterion "C" (embodies the distinctive characteristics of a type, period, or method of construction, or that represent that work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction) as an excellent example of later developments in concrete bridge construction on Kauai and represents the "work of a master" (William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department in Ruzicka 2015).</p> <p>SIHP # 50-30-09-2281 is a concrete-capped basalt and mortar retaining wall. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). This report assesses SIHP # -2281 as not significant pursuant to HAR §13-13-275-6 based on the evaluation of eligibility by Ruzicka (2015). Ruzicka (2015) evaluated SIHP # -2281 as not eligible to National and Hawai'i Register pursuant to 36 CFR 60.4 and HAR §13-198-8.</p> <p>SIHP # 50-30-09-2282 is a concrete-capped, dry-stacked basalt stone retaining wall. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). This report assesses SIHP # -2282 as not significant pursuant to HAR §13-13-275-6 based on the evaluation of eligibility by Ruzicka (2015). Ruzicka (2015) evaluated SIHP # -2282 as not eligible to National and Hawai'i Register pursuant to 36 CFR 60.4 and HAR §13-198-8.</p> <p>SIHP # 50-30-09-2283 is a large earthen and piled basalt stone berm. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the</p>
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	<p>National and Hawai‘i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). SIHP # -2283 is evaluated as significant pursuant to HAR §13-275-6 under Criterion “a” (be associated with events that have made an important contribution to the broad patterns of our history) “for its association with community planning and the development of Hanapepe as well as with federal flood control projects” (Ruzicka 2015). Ruzicka (2015) evaluated SIHP # -2283 as eligible to the National and Hawai‘i Register under Criterion “A” (associated with events that have made a significant contribution to the broad patterns of our history) “for its association with community planning and the development of Hanapepe as well as with federal flood control projects” (Ruzicka 2015).</p>
<p>Effect Recommendation</p>	<p>Four historic properties (SIHP #s -2280 through -2283) were identified during the AIS within the APE. Of these four, two (SIHP #s -2280 and -2283) are recommended eligible to the National Register. It has been determined that the proposed undertaking will have an adverse effect on the Hanapēpē River Bridge (SIHP # -2280). Only a small portion of the berm (SIHP # -2283) will be removed and will not compromise the overall integrity of the historic property.</p> <p>In accordance with Federal regulations (36 CFR 800.5), CSH’s project-specific effect recommendation is “adverse effect.” Under Hawai‘i State historic preservation review legislation, the project’s effect recommendation is “effect, with agreed upon mitigation commitments” (in accordance with HAR §13-13-275-7).</p>
<p>Mitigation Recommendations</p>	<p>Agreed upon mitigation commitments are detailed in the projects Memorandum of Agreement. These mitigation commitments include:</p> <p>Architectural recordation in the form of HAER documentation is recommended for the two historic properties evaluated as eligible to the National Register, SIHP # -2280 (Hanapēpē River Bridge) and -2283 (berm). This will be done in consultation with the National Park Service HABS/HAER/HALS Coordinator in the Pacific West Regional Office, and will be completed by architects, historians, photographers and/or other professionals meeting the Secretary of the Interior’s Professional Qualifications Standards (36 CFR Part 61).</p> <p>Interpretive materials are to be installed in consultation with the SHPD for the two historic properties (SIHP # -2280 and -2283). Character defining features of SIHP # -2280 will be salvaged for use in the interpretive signage/kiosk area.</p> <p>During the removal of the small portion of the berm (SIHP # -2283), a construction method will be used that does not compromise the overall integrity of the historic property by ensuring the area where material is removed is left structurally stable and repaired with in kind materials.</p>

	<p>Any historic properties directly adjacent to the APE shall be avoided and appropriately protected in place with construction fencing for the duration of the replacement project.</p> <p>No further archaeological historic preservation work is recommended.</p>
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Section 1 Introduction

1.1 Project Background

At the request of CH2M HILL and on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological inventory survey (AIS) report for the Hanapēpē River Bridge Replacement project, Hanapēpē Ahupua‘a, Waimea District, Kaua‘i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) contract DTFH68-13-R-00027, TMKs: [4] 1-9-007:001 por. Hanapēpē River, 013 por., and 034 por., and 1-9-010:014 por., 015 por., 046 por. and 050 por., Kaumuali‘i Highway and Iona Road Rights-of-Way. The proposed project is located along Kaumuali‘i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The project area encompasses the Hanapēpē River Bridge over Hanapēpē River, a portion of Kaumuali‘i Highway, areas on either side of Kaumuali‘i Highway, and Hanapēpē River. The project area is depicted on a portion of the 1996 Hanapepe U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax map plats (Figure 2 and Figure 3), and a 2013 aerial photograph (Figure 4).

The proposed project would replace the Hanapēpē River Bridge and its approaches to maintain the Hanapēpē River crossing on HI-56 as a safe and functional component of the regional transportation system for highway users. The Hanapēpē Bridge is eligible for listing on the National Register of Historic Places (National Register). The existing Hanapēpē Bridge would be demolished and replaced with a new bridge. The project area includes approximately 2.9 acres (1.2 hectares). The area of potential effect (APE) for the current project is defined as the entire 2.9-acre (1.2 hectare) project area

1.2 Historic Preservation Regulatory Context

This AIS investigation was designed to be compliant with both Federal and Hawai‘i State environmental and historic preservation review legislation. Due to federal funding, this project is a federal undertaking, requiring compliance with Section 106 of the National Historic Preservation Act, the National Environmental Policy Act, and Section 4(f) of the Department of Transportation Act. The proposed project is also subject to Hawai‘i State environmental and historic preservation review legislation (Hawai‘i Revised Statutes [HRS] §343 and HRS §6E-8/Hawai‘i Administrative Rules [HAR] §13-275, respectively).

In consultation with the SHPD, this AIS investigation fulfills the requirements of HAR §13-13-276 and the *Secretary of the Interior’s Standards for Archaeology and Historic Preservation*. It was conducted to identify, document, and make National Register and Hawai‘i Register of Historic Places (Hawai‘i Register) eligibility recommendations for any historic properties. This report is also intended to support any project-related historic preservation consultation with stakeholders such as State and County agencies and interested Native Hawaiian Organizations (NHOs) and community groups, if applicable.

A companion architectural study (Ruzicka 2015) is being conducted by Mason Architects, Inc. in conjunction with this AIS. When applicable, the information from the architectural study has been incorporated into the present AIS document.

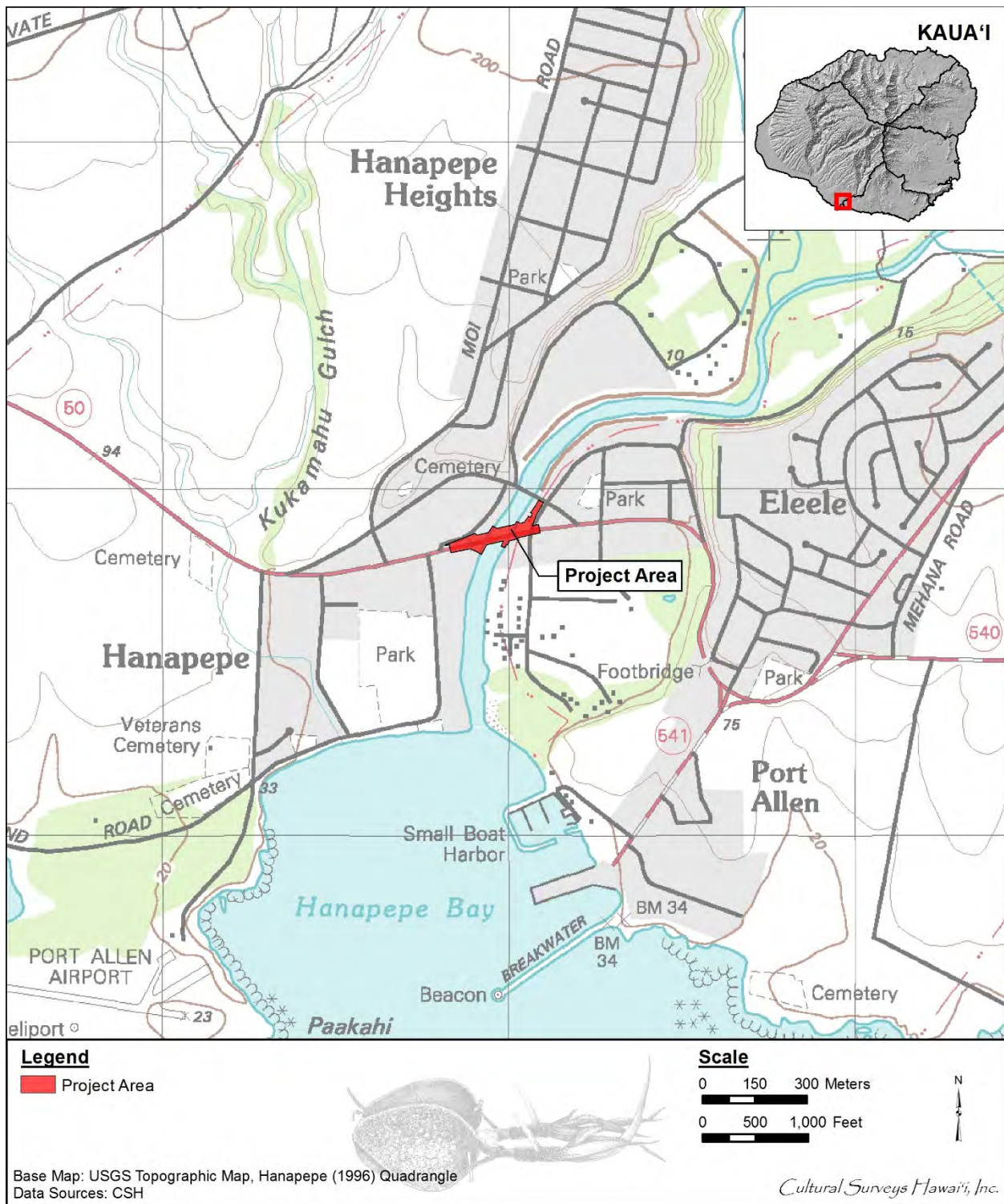


Figure 1. Portion of the 1996 Hanapepe USGS 7.5-minute topographic quadrangle showing the location of the project area

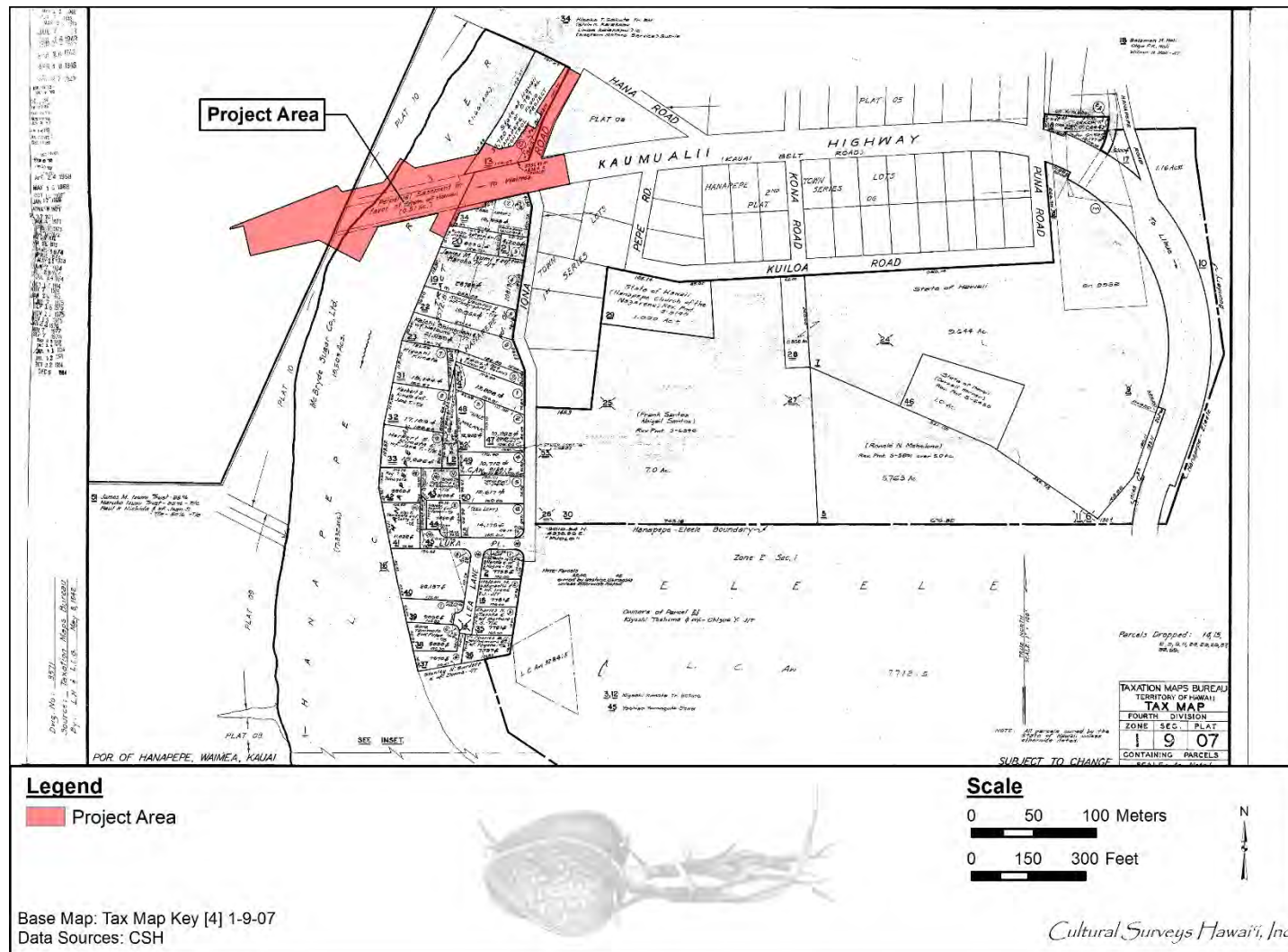


Figure 2. Tax Map Key (TMK): [4] 1-9-07, showing project area (Hawai'i TMK Service 2009)

AISR for the Hanapēpē River Bridge Project, Hanapēpē, Waimea, Kaua'i

TMKs: [4] 1-9-007 (various parcels), Hanapēpē River and 1-9-010 (various parcels), Kaumuali'i Hwy and Iona Rd ROWs

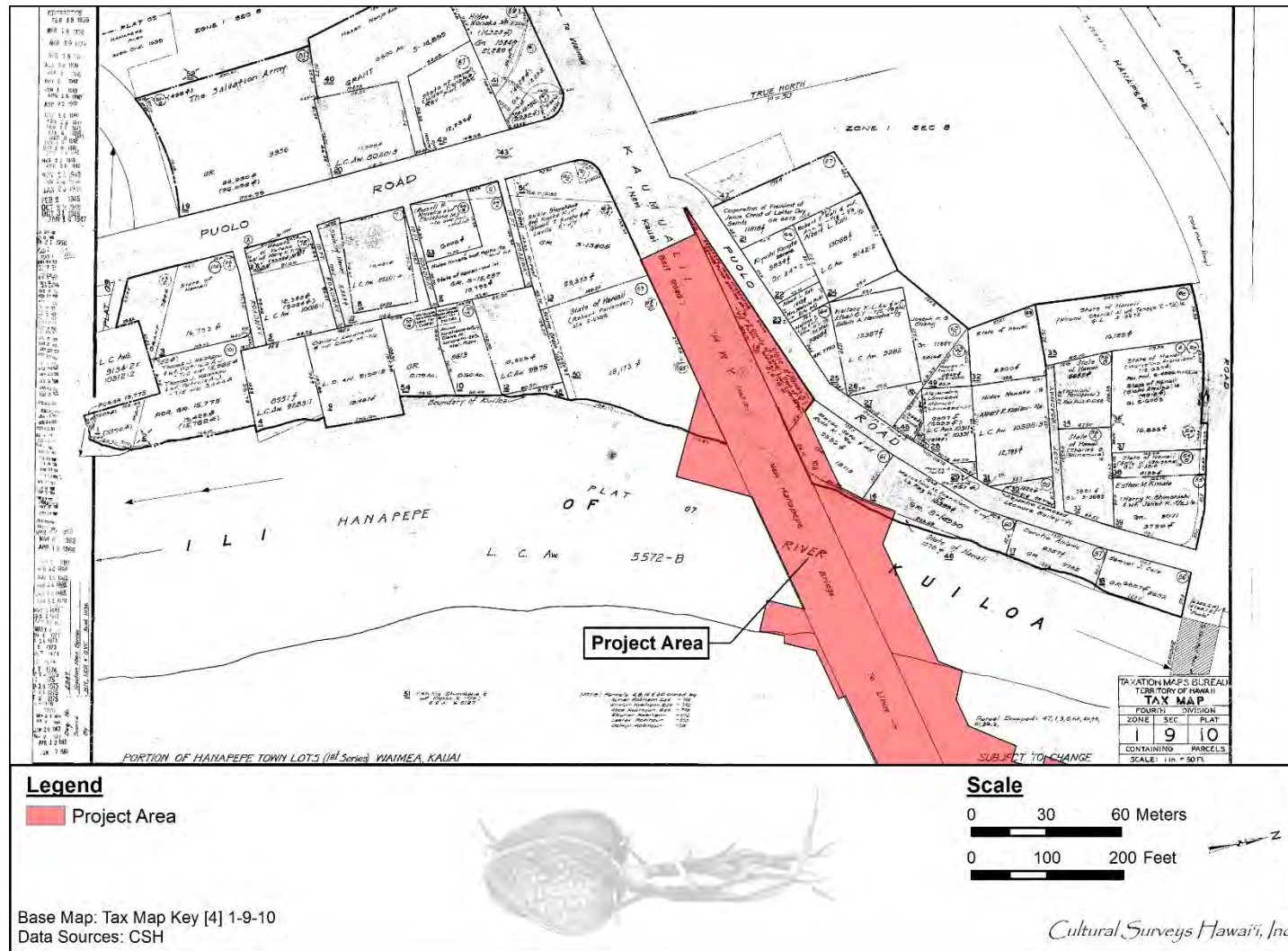


Figure 3. TMK: [4] 1-9-10, showing project area (Hawai'i TMK Service 2009)

AISR for the Hanapēpē River Bridge Project, Hanapēpē, Waimea, Kauai

TMKs: [4] 1-9-007 (various parcels), Hanapēpē River and 1-9-010 (various parcels), Kaumuali'i Hwy and Iona Rd ROWs

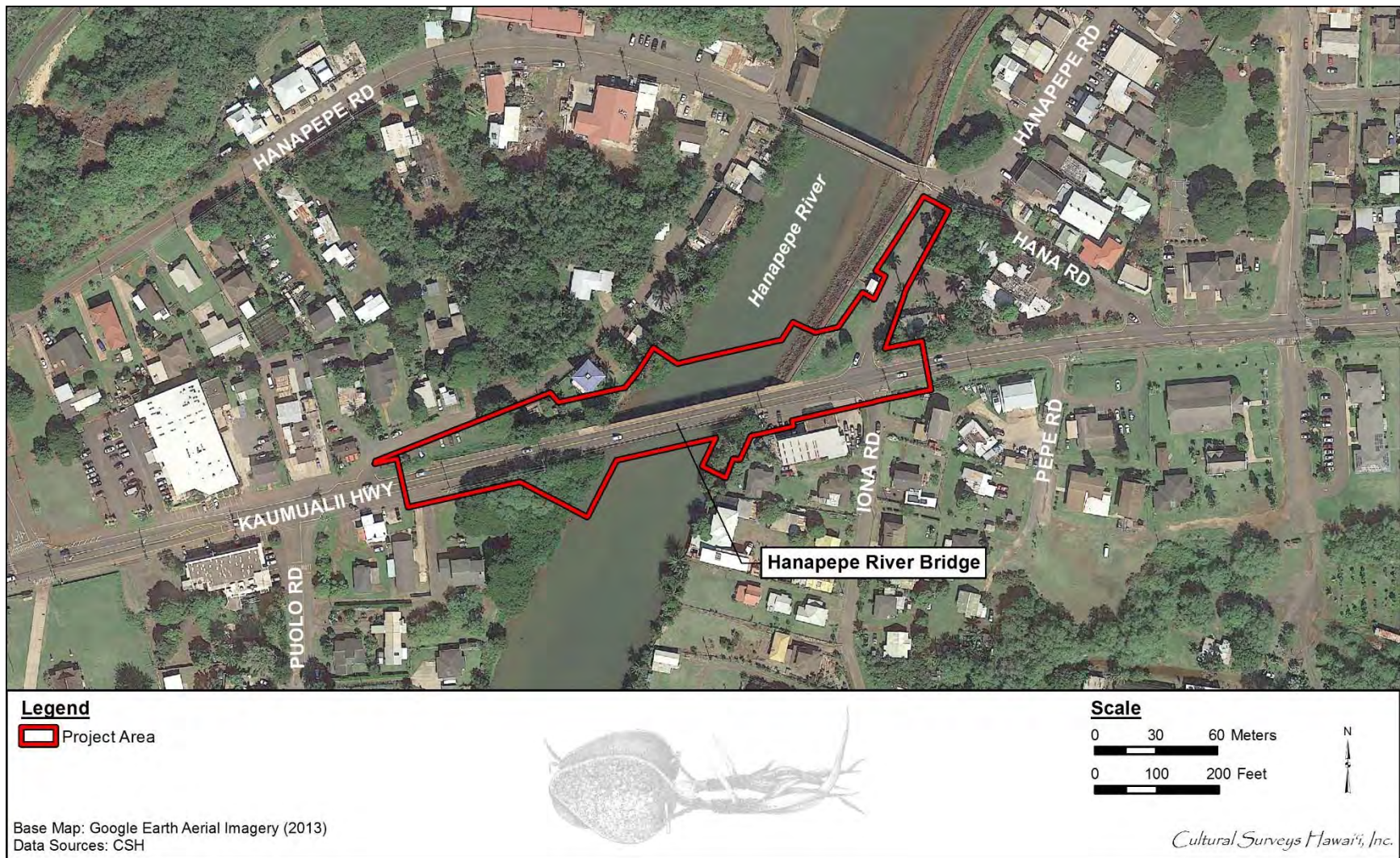


Figure 4. Aerial photograph (Google Earth 2013), showing project area

No previous archaeological studies have been conducted and no previously documented historic properties have been reported within the project area.

1.3 Environmental Setting

1.3.1 Natural Environment

Hanapēpē Ahupua‘a is bounded by the *ahupua‘a* (traditional land division) of Ho‘ānuanu and Makaweli in the north and Wahiawa in the south. The project area stretches across the Hanapēpē River at elevations of approximately 20 m (65.6 ft) to 40 m (131.2 ft) above mean sea level (AMSL).

Geologically, Kaua‘i consists essentially of a single great shield volcano, deeply eroded, and partly veneered with much later volcanics that rises 17,000 ft above the surrounding sea floor. At the top of the shield was a caldera 10 to 12 miles across—the largest in the Hawaiian Islands. The southern flank of the shield collapsed to form a fault-bounded trough, the Makaweli graben, or depression, some 4 miles wide. Lavas erupted in the caldera gradually filling it, except on the higher northwestern side, and eventually spilled over its low southern rim into the graben, down which they flowed into the sea (Macdonald and Abbott 1970:381).

Hanapēpē is to one side of the collapsed shield, and probably was in part formed by the action of the collapse. It is probably because of this overflow that Hanapēpē Bay and the salt flats at Ukula are at the extreme edge of the infilling. Ethel Damon refers to it as “the long earth crack believed to have been rent asunder by volcanic action rather than worn down by erosion” (Damon 1931:220). The mean yearly rainfall for the shoreline area is 500-750 cm (Giambelluca et al. 1986:86) with the annual temperature range between 60° and 80° (Armstrong 1983) while the upper part of the *ahupua‘a* has an annual rainfall of 8,000 cm or between 4,000-5,000 inches a year with an average temperature of 65°.

The proposed project is located on the leeward side of the island of Kaua‘i where the climate is warmer and less moist than the windward side of the island (Armstrong 1983). Compared to the interior of the island, which hosts the world’s wettest spot with annual rainfall of approximately 450 inches per year, the average precipitation in Hanapēpē is about 27.1 inches per year or 2.3 inches per month (Clean Islands Council 2011). As with Waimea, Hanapēpē is a canyon land with many valleys and streams that carry water from the mountains in the interior to the sea, near the project area.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area’s soils consist of Jaucas loamy fine sand, dark variant, 0 to 8% slopes (JkB), Hanalei silty clay loam, 0 to 2% slopes (HmA), and Pakala clay loam, 0 to 2% slopes (PdA) (Figure 5).

Jaucus sands are described as follows:

This soil occurs near the ocean in areas where the water table is near the surface and salts have accumulated. It is somewhat poorly drained in depressions but excessively drained on knolls. In the depression there is normally a layer of silty alluvial material flocculated by the high concentration of soluble salts. The water table is normally within a depth of 30 inches. [Foote et al. 1972:79]

Soils of the Hanalei Series are described as follows:

. . . somewhat poorly drained to poorly drained soils on bottom lands on the islands of Kauai and Oahu. These soils developed in alluvium derived from basic igneous rock. They are level to gently sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 20 to 120 inches. The mean annual soil temperature is 74° F. Hanalei soils are geographically associated with Haleiwa, Hihimanu, Mokuleia, and Pearl Harbor soils.

These soils are used for taro, pasture, sugarcane, and vegetables. The natural vegetation consists of paragrass, sensitiveplant, honohono, Java plum, and guava. [Foote et al. 1972:38]

Pakala soils are described as follows:

. . . well-drained soils on alluvial fans and bottom lands on the island of Kauai. These soils developed in alluvium. They are nearly level to moderately sloping. Elevations range from nearly sea level to 400 feet. The annual rainfall amounts to 25 to 40 inches. The mean annual soil temperature is 73° to 75° F. Pakala soils are geographically associated with Makaweli soils.

These soils are used for irrigated sugarcane, pasture, truck crops, and homesites. The natural vegetation consists of koa haole, kiawe, bermudagrass, mango, and associated plants. [Foote et al. 1972:107]

1.3.2 Built Environment

The project area is located in the center of Hanapēpē Town, where Kaumuali'i Highway crosses the Hanapēpē River and extends north along the side of the Hanapēpē River, including a portion of Iona Road. The surrounding area consists of residential houses, restaurants, commercial buildings, a church, the fire station, and a gas station (Figure 6 through Figure 9).



Figure 5. Aerial photograph (Google Earth 2013), showing project area along Kaumuali'i Highway crossing Hanapēpē River, with overlay of soil series (soil boundaries from Foote et al. 1972)



Figure 6. General view of the project area on the east side of Hanapēpē River Bridge showing Kaumuali'i Highway, view to west



Figure 7. General view of the project area on the west side of Hanapēpē River Bridge showing Kaumuali'i Highway, view to east



Figure 8. General view of the eastern end of project area (west of the Kona Road and Kaumuali'i Highway intersection), fire station in the background, view to north



Figure 9. General view of Hanapēpē Road between Hana Road and Kaumuali'i Highway, view to south

Section 2 Methods

2.1 Field Methods

CSH completed the fieldwork component of this AIS under archaeological permit number 15-03, issued by the SHPD pursuant to HAR §13-13-282. The fieldwork component of this AIS consisted of a 100% pedestrian survey and subsurface testing. Fieldwork was conducted on 13 June and 14 June 2015 by CSH archaeologists Missy Kamai, B.A., Tom Martel, B.A., and Richard Stark, Ph.D. under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. This work required approximately 4 person-days to complete.

In general, fieldwork included 100% pedestrian inspection of the project area, GPS data collection and subsurface testing.

2.1.1 Pedestrian Survey

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was accomplished through systematic sweeps spaced 5 m apart.

2.1.1 GPS Data Collection

Historic properties were located using a Trimble Pro XH mapping grade GPS unit with a real-time differential correction. This unit provided sub-meter horizontal accuracy in the field. GPS field data was post-processed, yielding horizontal accuracy between 0.5 and 0.3 m. GPS location information was converted into GIS shape files using Trimble's Pathfinder Office software, version 2.80, and graphically displayed using ESRI's ArcGIS 9.1.

2.1.2 Subsurface Testing

The subsurface testing program was backhoe assisted and involved two test excavations. In general, linear trenches measuring approximately 6.5 to 5.7 m (21.3 to 18.7 ft) long and 0.6 m (2 ft) wide were excavated within the project area. The test excavations were distributed on the east side of the bridge along the shoulder of the highway. The sampling strategy was detailed in map and text to the SHPD in advance of the fieldwork (Yucha to Naone email of 4 June 2015).

A stratigraphic profile of each test excavation was drawn and photographed. The observed sediments were described using standard USDA soil description observations/terminology. Sediment descriptions included Munsell color; texture; consistence; structure; plasticity; cementation; origin of sediments; descriptions of any inclusions such as cultural material and/or roots; lower boundary distinctiveness and topography; and other general observations. Where stratigraphic anomalies or potential cultural deposits were exposed, these were carefully represented on test excavation profile maps.

2.2 Laboratory Methods

Materials collected during AIS fieldwork were identified and catalogued at CSH's laboratory facilities on O'ahu. Analysis of collected materials was undertaken using standard archaeological laboratory techniques. Materials were washed, sorted, measured, weighed, described, and/or photographed.

2.2.1 Artifact Analysis

In general, artifact analysis focused on establishing, to the greatest extent possible, material type, function, cultural affiliation, and age of manufacture. As applicable, artifacts were washed, sorted, measured, weighed, described, photographed, and catalogued. Diagnostic (dateable or identifiable) attributes of artifacts were researched.

Historic artifacts were identified using standard reference materials (e.g., Elliott and Gould 1988; Fike 1987; Godden 1964; Kovel and Kovel 1986; Lehner 1988; Lindsey 2014; Millar 1988; Munsey 1970; Toulouse 1971; Whitten 2009; and Zumwalt 1980) as well as resources available on the internet. Analyzed materials were tabulated and are presented in Section 5: Results of Laboratory Analysis.

2.2.2 Disposition of Materials

Materials collected during the current archaeological inventory survey will remain temporarily curated at the CSH storage facility in O'ahu, Hawai'i. CSH will make arrangements with the landowner regarding the disposition of this material. Should the landowner request archiving of material, an archive location will be determined in consultation with SHPD. All data generated during the course of the AIS are stored at the CSH offices.

2.3 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina database (Waihona 'Aina 2000).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

2.4 Consultation Methods

The Hanapēpē River Bridge Replacement project is a HDOT and FHWA/CFLHD partnership project, which includes numerous proposed bridge improvement and replacement projects in the State of Hawai'i. Presently, National Historic Preservation Act Section 106 consultation with community, agency, and Native Hawaiian Organizations has been initiated and is on-going. Cultural consultation is also being conducted by CSH for a cultural impact assessment (CIA) for Kapa'a Stream Bridge (Ishihara and Hammatt 2015).

Section 3 Background Research

3.1 Traditional and Historical Background

Traditionally the island of Kaua‘i was divided into five *moku* (districts): Halele‘a, Kona, Ko‘olau, Nāpali, and Puna. However, after the battle of Wahiawa in 1824, the land of Kaua‘i was redistributed and district boundaries changed. The new district names were Hanalei, Kawaihau, Līhu‘e, Kōloa, and Waimea. Under the old district classification, the *ahupua‘a* of Hanapēpē came under the *moku* of Kona and later, under the *moku* of Waimea. Traditionally, the *‘ili* (land division smaller than an *ahupua‘a*) of ‘Ele‘ele was part of Hanapēpē Ahupua‘a but became part of Wahiawa Ahupua‘a following land redistributions in Kaua‘i (Figure 10). Thus, the district classification of Hanapēpē Ahupua‘a varies depending on the time referenced. Hanapēpē Ahupua‘a is located on the southwest side of the island of Kaua‘i within the district of Waimea. It is bounded by the *ahupua‘a* of Ho‘ānuanu and Makaweli in the north and Wahiawa in the south.

The name Hanapēpē literally translates as “crushed bay,” referring to the frequent landslides of the area (Pukui et al. 1974). According to Wichman, the name “crushed bay” is thought by some to have derived from the appearance of the cliffs of the area from the sea (Wichman 1998:30). Finney and Houston cite Hanapēpē as an ancient surfing place (Finney and Houston 1966). Wichman also states that the correct name of Hanapēpē is believed to be Hana-pēpēhi or “killing bay.” Hanapēpē is also the name of a lowland honeycreeper known as the *nuku pu‘u* (possibly *Hemignathus lucidus lucidus*, *Hemignathus lucidus hanapepe*, and/or *Hemignathus lucidus affinis*) on the other islands of Hawai‘i. The bird no longer exists but it was known for having one mandible longer than the other. Its disappearance is thought to have been due to loss of forested areas and to imported bird malaria (Wichman 1998:30).

Three stories tell of commoners uprising against *ali‘i* (chief) in which chiefs were thrown over the cliffs of Hanapēpē. Wichman tells the following accounts:

First, a chief of Hanapēpē lived on top of this cliff [Holo-iwi]. Each night, he demanded that an infant child be delivered to him that he would use as a pillow. Naturally, the child would cry and would awaken the chief. In his anger, he would throw the infant over the cliff. Finally, his own attendants threw him over the cliff, too.

A second story tells of a corpulent and crabby chief who had himself carried everywhere in a *maneie* (palanquin) borne on the shoulders of four strong men. The chief would decide that he wanted to spend the night at a spot far up in the valley and his attendants would hurry to that place, build a house for the chief to sleep in, and prepare his food. On the way, the chief would change his mind and insist on sleeping and eating somewhere else and was very irritated because things were not ready. Sometimes he would insist on being carried up the Kō‘ula, where his carriers struggled over the moss-covered rocks, then decide to sleep at the top of the ridge above. One evening, as the carriers struggled up the cliff carrying their burden, the chief scolded them unmercifully. Finally, having had enough, the carriers threw their chief—*maneie* and all—over the cliff.

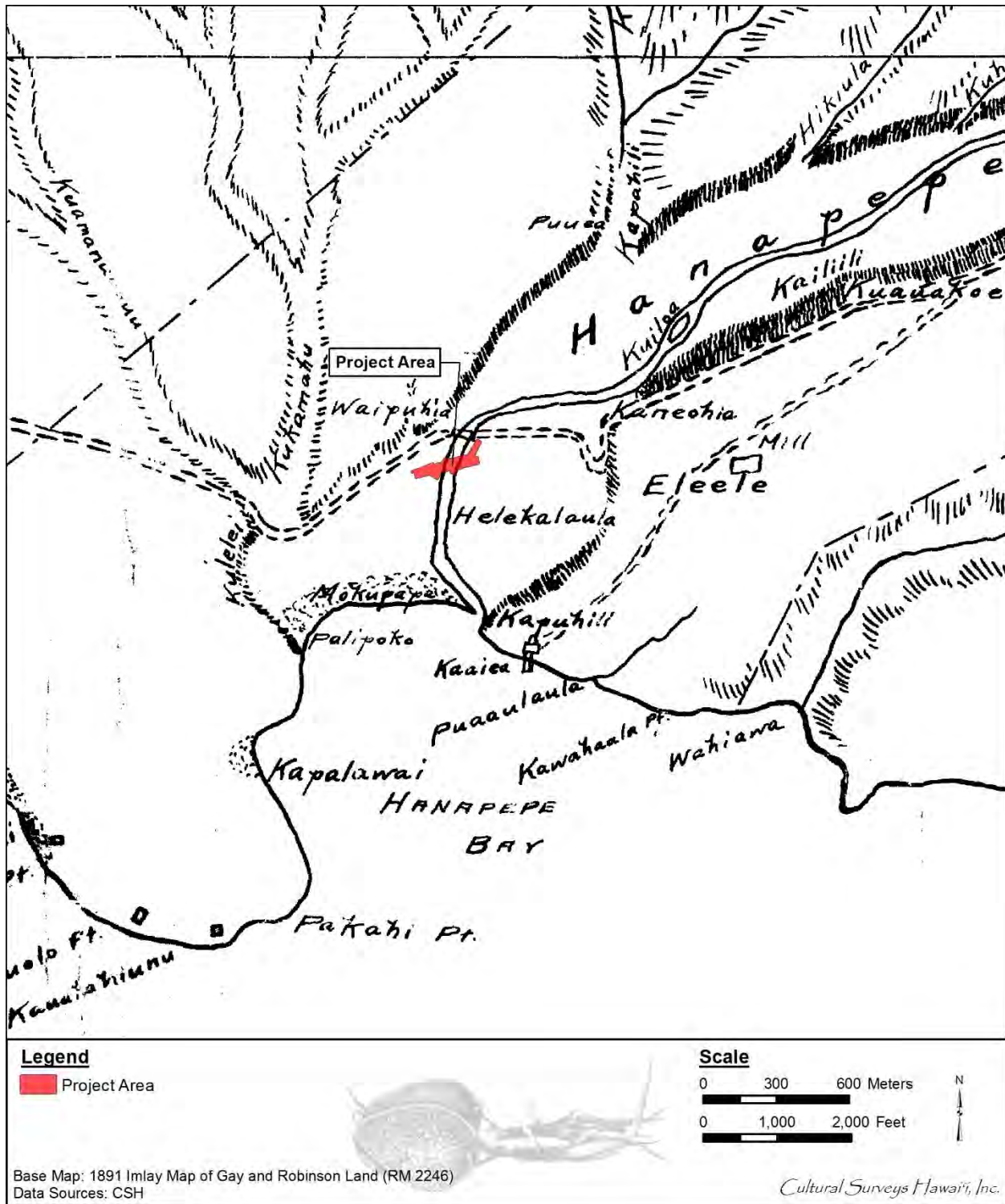


Figure 10. 1891 Imlay map of Gay and Robinson Land depicting the location of ‘Ele‘ele and other place names in relation to the current project area

[The third story is] when Kaweloleimakua—after he had killed his cousin ‘Aikanaka and had been forced to kill his foster son who had betrayed him—became obsessed with finding and exterminating the children of ‘Aikanaka and scoured the valleys looking for them. Alarmed at such unreasonable anger and obsession, his attendants threw him over the cliff. This event took place about 1700 A.D. [Wichman 1998:29]

Each island has *leina ‘o ka ‘uhane* sites where the souls of the dead would leap into the afterlife. On the Island of Kaua‘i, Hanapēpē is listed by Fornander as one of them (Fornander 1999:5:575). According to Kamakau, when a spirit encounters the tree, Ulu-o-Leiwalo, if an ‘*aumakua* (deified ancestors who might assume the shape of sharks, owls, hawks) is present, the soul may be revived in the body or led into the ‘*aumakua* world. However, if there is no ‘*aumakua*, the soul will get caught on a dead branch and fall into endless night (Beckwith 1970:156). *Ka leina ‘o ka ‘uhane* is described by Wichman to be located directly opposite Holoīwi, on the eastern cliffs (Wichman 1998:29).

According to Dean (1991:138), early Hawaiians set up their own “lighthouse” on the high land north of Hanapēpē Bay, which was centrally located to serve the entire south coast and its vast fishery. This beacon fire, which was burned at a *heiau* dedicated to Lono—the god of agriculture, wind, cloud, and sea—was called Kukui-o-Lono, meaning “light of Lono.” Bennett’s (1931) archaeological survey shows Kukuiolono at Kalaheo, just east of Wahiawa, but well inland of the seashore. Dean does not list her source for this information, but it is not unlikely that such a fishing beacon would have existed. There are several places where such beacon fires may have been regularly burned as a signal to night fishermen; one of them is at Kuku‘i Point, just west of Anakua Point (on the Makaweli-Hanapēpē border).

Another light, Hanapēpē Light, is located at Puolo Point near the Ukula salt flats, which was also the site of Kuahanui, described by Francis Gay as a canoe landing. Dean (1991:139) explains that after the sugar industry developed (by 1884) there were “lanterns showing red lights to distinguish them from plantations at [among other places] Hanapēpē.” She also describes a lamp raised 36 ft to the top of a tower at ‘Ele‘ele Landing to guide inter-island traffic. By 1908, the Light House Board had established these “lighted aids” such as at ‘Ele‘ele Landing and Puolo Point, which are probably remnants of Sites 51 and 52.

3.1.1 Early Historic Period

Archibald Menzies, doctor and botanist under Captain Vancouver on one of the earliest English ships visiting the Hawaiian Islands, visited Waimea in 1792 and described a grass fire burning over the plains several miles to the east (which would be in the area of Hanapēpē). Captain Vancouver first supposed it to be a signal of hostilities but was told it was the annual burning to rid the plains of the old shriveled grass (*pili* grass) and stumps so the new grass crop would come up clear and free and such practice would provide the best grass for thatching houses (Menzies 1920:32).

Figure 11 shows the work of John Weber, an artist on Captain Cook’s third voyage to the Pacific; he’s depicted the thatched houses and natural landscape that characterized villages of the time (Handy and Handy 1972).

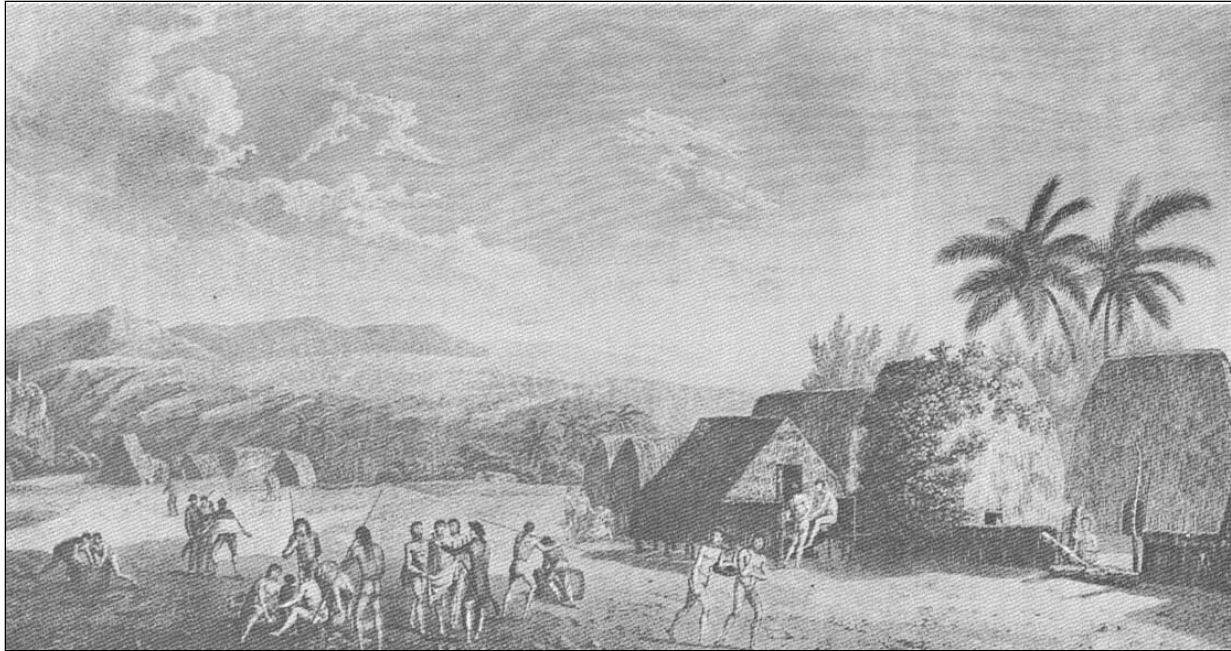


Figure 11. Village at Waimea near Hanapēpē, Kaua'i, depicting thatched houses that characterized villages of the time (Handy and Handy 1972:298)

Though Hanapēpē is bordered by the ocean and has a large coastline, Handy and Handy stated, “Hanapēpē was relatively unapproachable from the sea” (Handy and Handy 1972:268). They speculated that Hanapēpē and other areas of canyons nearby had a *kua ‘āina* or inland population that did not frequent the sea. Handy and Handy (1972) believe these *kua ‘āina* utilized the plentiful freshwater resources of the region to develop an abundance of *lo ‘i* (irrigated terrace, especially for taro) terraces, portraying a natural landscape that was lush and distinguished by taro cultivation:

Kauai’s areas of canyons (including Makaweli, Olokele, and Hanapepe-Koula, to the eastward of Waimea) possessed in the olden days something not known elsewhere in the Hawaiian Islands except in a very few localities: the anomaly of an inland (literally backland) population which had at best but infrequent contacts with the sea. In Waimea Canyon there was an estimated terrain of about 25 linear miles of varying width along watercourses on which irrigated cultivation was practicable . . . It is characteristic of this, as of other less wild and inaccessible inland areas, that every foot of land that could be leveled by terracing above the floodwater stage, and to which a ditch could bring stream water, was utilized for taro *lo ‘i*. It is said today by *kama ‘aina* (native ‘old-timers’) that in these upland *lo ‘i* the green-stemmed ha‘o-kea, a fast-maturing taro variety adapted to cold stream water and shallow soil, was grown. There is also a wild taro that grows in high inaccessible places in this region, and it is called *na-kalo-a-‘Ola*, ‘the taro of ‘Ola,’ who was an *ali ‘i* anciently ruling all the island, and whose name appears in many of the chants of old Kaua‘i. [Handy and Handy 1972:397]

The traditional practice of *pa ‘akai* (salt gathering)—for which Hanapēpē is still famous today—benefitted British fur traders. Figure 12 shows the large salt pan flats near the project area. Ethel Damon (1931:228) describes the bounty at Waimea for the early British fur traders saying, “At Waimea these hardy voyagers ‘wooded and watered’, and found plenty of pork and salt to cure it.” Salt taken aboard ship at Waimea may well have come from the ‘*ili* of Ukula in Hanapēpē, as these salt lands were quite large. Damon describes the use of salt by Hawaiians:

Owing to the presence of several salt lakes in the Sandwich Island, and to the advantage of the longer dry season, the natives here had formed the habit of drying out salt in its crystal form, and storing it carefully and of using it freely in the preservation of fish, as well as directly with their meals. [Damon 1931:228]

Sandalwood also appears in the early historic literature of Hanapēpē in the diary of Georg Scheffer of the Russian American Company, described in *Russia’s Hawaiian Adventure 1815-1817* (Pierce 1965). Scheffer was a Russian trader who scouted out sandalwood and other trading goods for his company. He tried to convince Russia to annex Hawai‘i and wanted to help Kaumuali‘i recapture all the other islands, for which Scheffer would be entitled to all the sandalwood. For several years he was on good terms with the ruling chief Kaumuali‘i and his high chiefs. Among the lands he was given by Hawaiian *ali ‘i* were the *ahupua ‘a* of Hanalei (renamed Schäfferthal or Scheffer’s valley), land in Waimea for plantations and factories, the ‘*ili* of Mahinuali in Makaweli, followed shortly thereafter by a gift of the ‘*ili* of Kuiloa in Hanapēpē. In 1816, Scheffer wrote the following:

I spent two days in Hanapepe, where I received for the Company from the chief Obana Platov [Obana Tupigea—Opana Kupikea renamed Platov by Scheffer] a

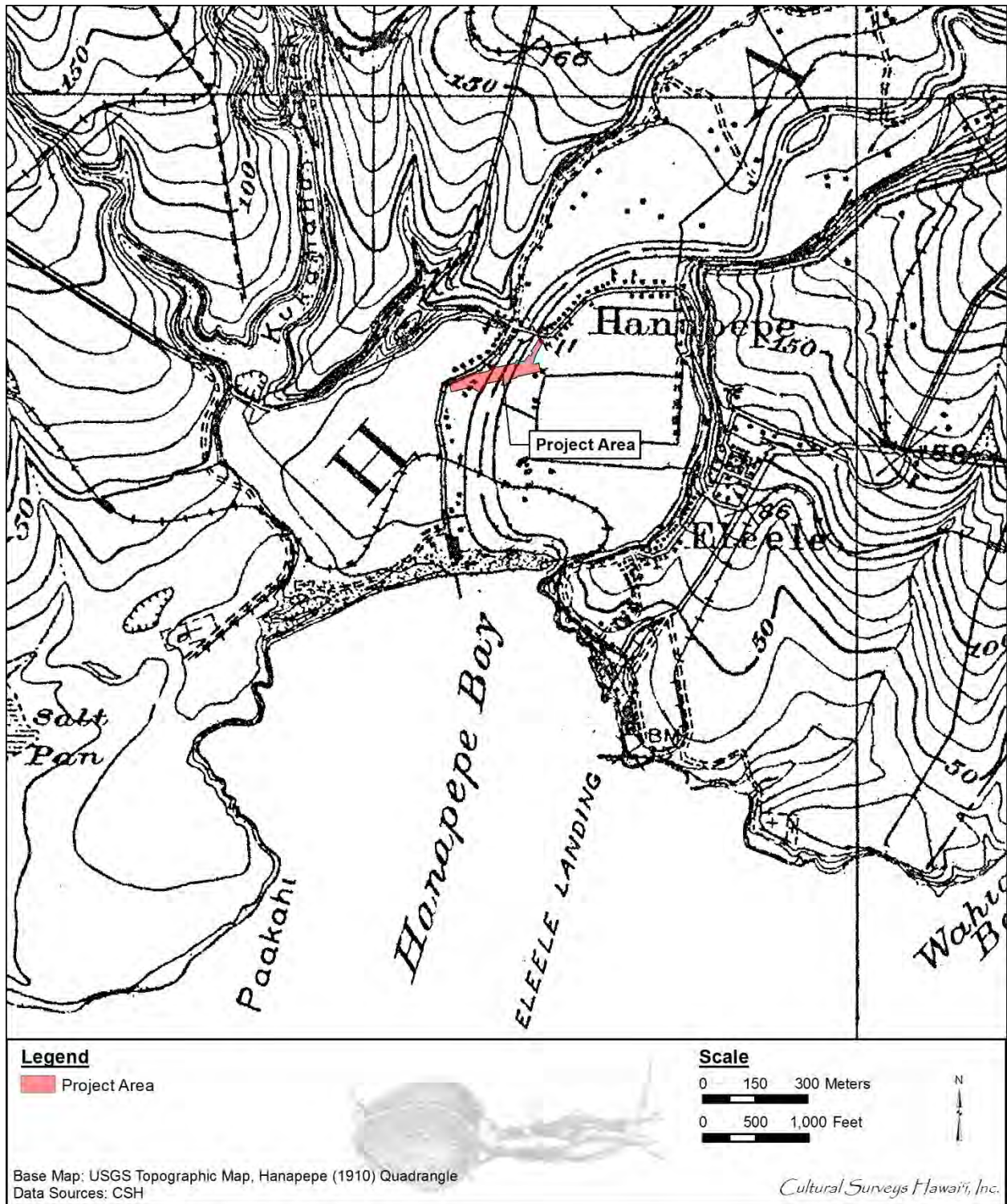


Figure 12. Portion of the 1910 Hanapepe USGS 7.5-minute topographic quadrangle depicting the Salt Pond (Salt Pan) southwest of the project area

village with eleven families. It lies in the province of Hanapepe on the right bank of the river Don [Hanapepe] and is called Tuiloa Platov [Kuiloa]. [Pierce 1965:185]

Scheffer renamed the chiefs, the rivers, and valleys of Kaua'i for ones in his homeland. His diary mentions that he had scouted out the entire island and had been given much sandalwood. Pierce claims Scheffer evidently relished the enmities between Kamehameha I and Kaumuali'i and hoped to profit handsomely if the Russians would come to the aid of Kaumuali'i. Scheffer stated in his diary that he did not care what the islanders did because this "island belongs to the Russian American Company." Scheffer planned, while cutting sandalwood, to plant new trees and create a permanent supply of sandalwood. He wrote about his ideas of agriculture and noted that, "Cotton should be Russia's main objective in the Sandwich Islands" as it "yields in a short time more return for a small expenditure and effort than all the fur trade on the Northwest coasts." He wanted to import people from Hindustan, Africa, or China for their knowledge of how to grow and process it, "so as to teach the Russians, Aleuts, and the natives" (Pierce 1965:191). Scheffer put these ideas to practice as stated a month later in his diary records:

[November] 30 I set out for Hanapepe, inspected the estate of Platov on the river Don, and found it extremely rich in taro fields. I ordered the dry land planted into cotton, tobacco, maize, and also transplanted here sufficient orange, lemon, and olive trees. I delivered there a number of brood sows and assigned two old Aleuts as watchmen. [Pierce 1965:187]

And later:

[December] 23. Taboo, The wives of all the chiefs visited me today. The queen's sister Taininoa, who previously gave the company land, today transferred also the valley of Mainauri, while Queen Monolau, whom I cured of illness, presented me with land in the Georg (Kainakhil') Valley in the Hanapepe province. I gave her a piece of silk material. [Pierce 1965:192]

The grant from Chief Obana Platov (Opana Kupikea) for "Tuiloa on the River Don" and "Mainauri" and "Georg" are both dated 1 October 1816 (Pierce 1965:80). "Georg" is described as "a large piece of land nine versts long and fifteen wide between the port of Waimea and Hanapēpē, along the seashore where one could gather a great deal of salt" (note: 1 verst = 0.66 miles). This description seems to indicate the area included the *'ili* of Ukula, which is southwest of Hanapēpē Bay. Pierce believes Mainauri and the salt land may be in Makaweli, *'ili* of Mahinauli, but these salt lands may have included the *'ili* of Ukula. The section of salt lands which remains today has been preserved as the Salt Land State Park in Hanapēpē.

In a 1 January 1817 entry, Scheffer talks enthusiastically about the high quality of the cotton he has grown. He notes that taro and maize are two important Sandwich Islands crops that "are unrivaled as foodstuffs, and extremely suitable for transport and for prolonged storage" and he expects a high return of a new crop, little grown in the islands before his time—tobacco—which is of far better quality than Russian snuff tobacco. Another fortune-making venture he foresees is for salt, which is plentiful in the Islands. Sugar in the Islands, he says, "is of a height and quality which I have never seen anywhere else." Scheffer writes of the promise of the fruit of the land:

The oil nut (*kukui*) brings no small return. Grapes grow twice in a year; I have planted enough of one kind which if carefully prepared ought to make wine which

should surpass Madeira. I need not mention the fruits of the bread plants, pineapples, coconuts, oranges, lemons, bananas, melons, etc. These items will bring no small price and if correctly handled can upset in one blow the trade of the English and Americans in China, etc.; of this I am convinced. [Pierce 1965:196]

The American traders felt threatened by Scheffer and plotted to put an end to his empire. Edward Joesting's version of the rivalry in 1822 among Scheffer, the Americans, and King Kamehameha, notes the Americans spread word that America and Russia were at war. Scheffer rushed from where he was staying in Hanapēpē to Waimea to protect his ship. The Hawaiians and Americans made him leave Hawai'i immediately without allowing him to take any of his possessions (Joesting 1984:84).

Shortly after Scheffer departed, the Ruggles, a missionary family, moved eastward from Waimea in 1822 to establish a mission station at Hanapēpē (Kauai Bicentennial Committee 1978:33). Damon describes the building of housing for these missionaries as "small houses of rough stone laid up in mud mortar were built for the white families, a cellar being a requirement for each dwelling" (Damon 1931:252).

During the early historic period, the Hanapēpē-Wahiawa area was the setting of a battle over control of Kaua'i. This battle was part of a wider civil conflict known as the "Kaua'i Rebellion," a last ditch effort by supporters of the Kaua'i Island chiefs to resist takeover by Hawai'i Island chiefs. In 1824, Kaumuali'i, the ruling chief of Kaua'i and Ni'ihau, became gravely ill. Nearing death, Kaumuali'i declared "Our 'son'" to be his successor and said: "Let the lands be as they are; those chiefs who have lands to hold them, those who have not to have none" (Kamakau 1961:265). Following his death, Kahalai'a, nephew of Kaumuali'i and chief from Hawai'i Island, was announced as the new ruler over Kaua'i and Ni'ihau. However, the people of Kaua'i, both chiefs and commoners, expected one of Kaumuali'i's sons, Keali'iahonui or Humehume, to be named as successor.

Kahalai'a traveled to Kaua'i and settled at the former Russian Fort at Waimea. Soon after, a hostile sentiment spread among the people of Kaua'i over being ruled by an *ali'i* from Hawai'i. During this uneasy period, the missionary Hiram Bingham traveled to Wahiawa, leaving the following account:

I visited the disaffected George [Humehume] at his estate—the little secluded Wahiawa. It was a small valley, running back from the sea to the mountains, containing some twenty small habitations, about a hundred souls, and some hundred acres, very little cultivated, yielding a scanty amount of the common productions of arum, bananas, cocoanuts, potatoes, sugar-cane, squashes, melons, and wild apples. At the foot of this valley, I found George living much in the original native style, in a dingy, dirty, thatched house at the sea-side, just where the surf washes a small beach between two rocky cliffs. [Bingham 1847:229]

The Kaua'i warriors, led by Humehume, subsequently rebelled and attacked the fort at Waimea, where the Hawai'i chiefs had gathered. Armed with guns, the men of Hawai'i were able to hold off the rebels until the arrival of reinforcements from O'ahu. More than ten ships later arrived (Kamakau 1961):

On August 8 [1824] the battle of Wahiawa was fought close to Hanapepe. The Hawai'i men were at Hanapepe, the Kaua'i forces at Wahiawa, where a fort had been hastily erected and a single cannon (named Humehume) mounted as a feeble attempt to hold back the enemy. In the evening there was an advance made, but the forces of Hawai'i retired to Hanapepe for the night . . . Large numbers of Kauai soldiers had gathered on the battleground, but they were unarmed save with wooden spears, digging sticks, and javelins. Many women were there to see the fight. The men acted as if death were but a plaything. It would have been well if the gods had stepped in and stopped the battle. No one was killed on the field, but as they took to flight they were pursued and slain . . . For ten days the soldiers harried the land killing men, women, and children. [Kamakau 1961:268]

The battle of Wahiawa was later known as the “‘Pig eating’ (‘*Aipua* ‘*a*) because the dead were left lying for the wild hogs to devour” (Kamakau 1961:233). The men, women, and children that were left for wild animals to feast upon were not allowed a burial. Following the battle it was also noted,

A great deal of property was taken, among other things horses and cattle, which had become numerous on Kauai because the foreigners had given many such to Kaumuali'i . . . After the battle the chiefs all came together and Kalanimoku redistributed the lands of Kaua'i . . . The last will of Kaumuali'i, who had the real title to the lands, was not respected . . . It was decided that Kahalai'a should not remain as ruler, but the islands be turned over to the young king [Kauikeaouli, Kamehameha III], and Kaikio'ewa was appointed governor and Kahalai'a recalled . . . The lands were again divided. Soldiers who had been given lands but had returned to Oahu had their lands taken away, chiefs who had large lands were deprived of them, and the loafers and hangers-on (*palaualelo*) of Oahu and Maui obtained the rich lands of Kauai. [Kamakau 1961:268–269]

This defeat of the Kaua'i chiefs marked the end of armed uprisings on Kaua'i against the unification efforts of the Big Island and Maui chiefs. Following the rebellion, queen regent Ka'ahumanu, as she did elsewhere, ordered the old gods, idols and sacred *pōhaku* of Kaua'i to be destroyed. [Wichman 1998:28]

3.1.2 The Māhele and the Kuleana Act

Prior to 1848, all land belonged to the *akua* (gods), held in trust for them by the paramount chief and managed by subordinate chiefs. In the mid-1800s (1845 and 1846), Kamehameha III decreed a division of lands called the Māhele, which divided land for private land ownership (Chinen 1958). In 1848, lands were divided into three portions: crown lands, government lands, and lands set aside for the chiefs (*Konohiki* lands). Individual plots, called *kuleana* (Native Hawaiian land rights) awards, were granted within these divided lands to native inhabitants who lived on and farmed these plots and who came forward to claim them. The chiefs and *konohiki* (headman of an *ahupua'a* land division under the chief) were required to pay a commutation fee for their lands, usually about one-third the value of any unimproved lands. Awardees usually “returned” a portion of the lands awarded to pay the commutation fee for the lands they “retained.” The returned lands usually became government lands (Chinen 1958:13).

The Kuleana Act was legislated in 1850, allowing *maka'āinana* (commoners) to own land parcels (fee simple) which they were currently and actively cultivating and/or residing on. In theory, this set aside hundreds of thousands of acres as potential *kuleana* parcels; in reality about 10,000 claimants obtained approximately 30,000 acres. The *konohiki*, 252 chiefs, divided up about a million acres. Many Hawaiians were disenfranchised by these acts (Cordy et al. 1991). All Kaua'i claimants for land on Kaua'i presented their claims in the year 1848. Supporting evidence for the claims is found in the Native and Foreign Testimony during the years 1850-1852.

In Hanapēpē Ahupua'a, 92 claims are listed, 66 of which were awarded (Soehren 2010). Land use information provided in the LCA documentation indicated settlement within the Hanapēpē Valley focused on wetland taro cultivation, with ample irrigation from the Hanapēpē River. Approximately 80 *kuleana* claimants listed 131 'āpana (sections, lots, or pieces) in use. A total of 56 of the 131 'āpana or 'ili are located along the lower Hanapēpē River bank. These claims mention 528 lo'i or taro plots (including 200 claimed by Opae alone, LCA 10458), 29 *kula* (where dryland crops like sweet potatoes were raised), 46 *pāhale* or house lots (many noted as being in villages), ten *mo'o* (land section smaller than an 'ili) with crops unspecified, ten pastures or *mo'o* specified as pastures, and 16 "other," described as including gardens, pastures, *loko* (fishponds), a pigpen, and salt lands at Ukula. The majority of *kuleana* lands were located along the lower Hanapēpē River banks and floodplain within the 'ili of Kaauwaekahi (which includes those of Kalapawai).

Because of the 1827 Kaua'i rebellion, Hawaiians from other islands were awarded lands in Waimea District and in Hanapēpē. Hanapēpē Ahupua'a was part of Kamehameha III's private lands. Eight claimants mention receiving their land at the time of the rebellion. *Ali'i* of the Kamehameha line received Hanapēpē lands at the time of the Māhele Awards in 1848. Queen Kapiolani received the 'ili of Kuiloa; LCA 7712 awards to Mataio Kekuanao'a, Governor of O'ahu and Kaua'i, the 'ili of 'Ele'ele (1,071+/- acres). Kekuanao'a was of the Kamehameha line, a descendant of Lono i Kamakahiki, he married Pauahi and had a daughter, Ruth Keelikolani (McKinzie and Stagner 1983:40). Later he married Kina'u, daughter of Kamehameha I and at this time became Governor of O'ahu. He was also the father of Kamehameha IV and V and Victoria Kamamalu (McKinzie and Stagner 1983:95). He had large land holdings on Hawai'i, O'ahu, and Kaua'i. LCA 8559B is titled to William Lunalilo (King Lunalilo) for the 'ili of Manuahi (867 acres).

Māhele Award (M.A. 55) to Paniani (from the Big Island) is for half of the 'ili of Koula. Two other such awards are listed: M.A. 19B to Kanehiwa for the 'ili of Kukuilolo and M.A. 29 to Kanunu, which is subsequently given in Grant 1151 for half of the 'ili of Punalau. The majority of claimants profess to have occupied their places of residence or cultivation from 1839 or before (1839 = time of Kaikioewa). Fifteen claimants date their claims to the time when Kaumuali'i was still alive (pre-1824).

Joesting (1983) dates Eliza Sinclair's purchase of Makaweli to 1824 and notes that the purchase of Hanapēpē came soon after. The LCAs present testimony of cattle enclosures and sugar cane cultivation by 1848.

Francis Gay's manuscript (1873) has a section where he describes the *kama'āina* living in Hanapēpē and he notes some who originally came from the Big Island. This section also provides additional confirmation that by 1873 cattle were being raised in various places in the valley:

J. Kauai and Kamaku, his wife, and Waialoe her mother, they came from Kona, Hawaii. That is, Waialoe was born in Kona of Awahua (k) and Nukee (w) and came to Honolulu as a child and was raised by the chiefs and married Paaniani (k) [Mahele Award 55] and came to Koula with their daughter, then married to J. Kauai of Hana, Maui. (This was copied from old note book) . . . Paanianiani was given the ili of Koula which brought them to Kauai . . . a tall good looking man called Pamaiaulu . . . His wife, Walia, was with him, a tall good looking woman from Laaloa, Hawaii. She died not long after their return to Laaloa and he married again the widow of Makahiaa, Umi (w). [Gay 1873:53–54]

In March 1818, about 150 natives were garrisoned at the fort at Waimea (Corney 1896:88–89). For their subsistence, these government soldiers were allowed use of cultivatable lands nearby—these were the fort lands. One of these soldiers, Commander Paele, claims land in Waimea, Makaweli, and Hanapēpē. “Though there were only sixteen soldiers at the fort, including Paele, at the time of the Mahele [1848–1852], the previous taking of lands at Kaho‘omano may have been the impetus for establishing fort lands elsewhere” (Ida and Hammatt 1993).

Paele describes one claim in Waimea, three in Makaweli, and one in Hanapēpē (which shows on maps in three pieces).

The missionary Reverend George B. Rowell appears to be the only westerner to receive an LCA in Hanapēpē. He is also listed as the scribe for many of the *kuleana* claims in Hanapēpē. Frazier (1979:10) noted Mr. Rowell’s “solicitude for the Hawaiian claimants of land, in order that their claims might be approved by the land commission,” in contrast with several cases where Governor Kanoa destroyed claims that were on dirty paper or not properly written. The Boundary Commission (1873) reports and survey maps note Rowell’s lands were located in an area called Hanapēpēluna, north of ‘Ele‘ele and near the border of Wahiawa Ahupua‘a.

Another missionary named in the historical literature as living in Hanapēpē in 1822 was Samuel Ruggles, who had a stone house built for him with a cellar. This house was completely ransacked during the rebellion. However, Ruggles had been transferred to Hilo before the 1824 rebellion (Joesting 1984:109).

In addition to a Protestant missionary, Hanapēpē LCAs list a Catholic teacher (presumably a Hawaiian) named Hii claiming land. The Native Testimony recounts that Hii came by his lands through marriage and through his mother (Native Testimony 10332 70-71vll; OHA 2011). Nearly a half century later, historic maps depict a Catholic church within the ‘ili of ‘Ele‘ele.

A total of five *kuleana* claims are situated in the immediate vicinity of the current project area. Figure 13 shows the LCA parcels near the current project area and Table 1 describes the *kuleana* claims in the immediate vicinity of the project area including the Land Commission Award numbers, the name of the claimant, the name of the land division or ‘ili in which the claim was being made, the claim and land use of the claim, and what was awarded to the claimant.

In the 1870s, the Boundary Commission (1873) was called upon to survey the four largest ‘ili within the *ahupua‘a* of Hanapēpē. The Estate of Queen Kapi‘olani requested the survey of the ‘ili of Kuiloa (1870); Eliza Sinclair the ‘ili of Koula (Ko‘ula) (in 1873 after she bought it from the estate of Victoria Kamamalu); C.R. Bishop the ‘ili of Manuahi for King Lunalihō (1873) and John

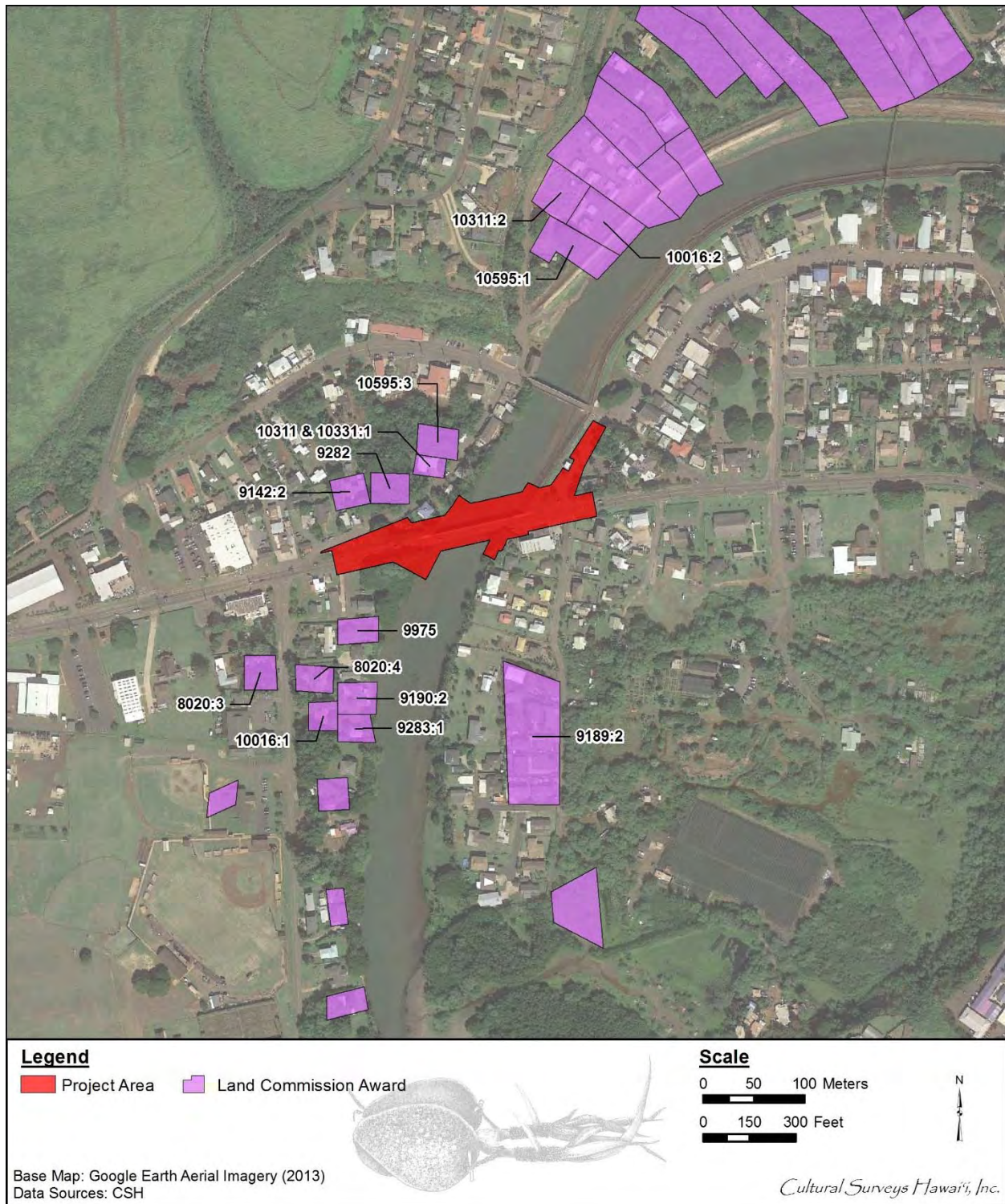


Figure 13. Aerial photograph showing Land Commission Awards in the Hanapēpē Ahupua‘a in the vicinity of the project area (Google Earth 2013)

Table 1. Māhele Land Claims in Hanapēpē Ahupua'a in the Vicinity of the Project Area

LCA #	Claimant	'Ii	Claim/Land Use	Award
9242	Kapekue	Kaauaekahi	Three <i>lo 'i</i> , <i>kula</i> , and house lot,	Two ' <i>āpana</i>
9282	Kapoanu	Kaauwakahi	<i>Kihapai</i> , <i>muliwai</i> , and house lot	One ' <i>āpana</i>
9975	Lihue/Poopuu	Kaauwaekahi	Three <i>lo 'i</i> and house lot	Two ' <i>āpana</i>
10311 and 10331	Namoku	Kaauwaekahi	<i>Lo 'i</i> , ditch, <i>kula</i> , and house lot	Two ' <i>āpana</i>
10595	Puakala	Kaauaekahi	<i>Mo 'o</i> , four <i>lo 'i</i> , <i>kula</i> , and house lot	Three ' <i>āpana</i>

Dominis the *'ili* of *'Ele'ele* on behalf of his late Majesty Kamehameha V (1873). Finally, John Dominis also requested surveys for the entire *ahupua'a* of Waimea, Hanapēpē, Anahola, and Hanalei as they were Crown Lands (1873). James Gay conducted the survey, but gives no overall acreage for Hanapēpē as the other aforementioned *'ili* are within this larger area. Within Hanapēpē there are 21 smaller *'ili* in the *ahupua'a* (Boundary Commission 1873).

3.1.3 Mid- to Late 1800s

3.1.3.1.1 Population

A map by Coulter (1931:14) indicates the population of Hanapēpē and Wahiawā ca. 1853 “was concentrated chiefly on the lower flood plains and delta plains of rivers where wet land taro was raised on the rich alluvial soil.” The map also indicates an estimated population of approximately 1,000 people in the Hanapēpē area (Figure 14). As presented below in Section 3.7.1.2, Bingham’s (1847) accounts of Hanapēpē estimated that Hanapēpē Valley had about 700 inhabitants in 1847.

3.1.3.1.2 Early Voyager Descriptions of Hanapēpē Valley

The missionary Hiram Bingham described Hanapēpē in 1847:

[Hanapēpē] lies six or seven miles east of Waimea. It is a pleasant, fertile, well watered valley, about 175 rods in width, along a mile or two from the sea-shore, diminishing in breadth and increasing in depth, as it recedes toward the mountains, till it becomes a very deep and narrow ravine, curving between precipitous and lofty cliffs, and grass-covered hills. A beautiful stream from the mountainous interior leaps down from high basaltic rocks, and forming a high cascade at the head of the valley, flows through it to the sea. Like the Waimea River and others at the islands, it is, at its mouth, obstructed by sand, by which the surf seems incessantly endeavoring to prevent its entrance into the ocean. Where it is thus retarded in its flow, it is from ten to twenty rods in width and three or four feet in depth, where we cross it in a canoe, or on horseback. It escapes by a narrow channel, where it cuts through a sand-bank.

For the first half mile from the sea, the valley seems sterile, and is little cultivated, but has a pleasant grove of cocoanut trees. The rest of the valley, more fertile and more cultivated, is sprinkled with trees and shrubs, embracing a few orange trees, and being walled up on the east and west by bold, precipitous bluffs, rising higher and higher toward the mountains, from fifty feet to fifteen hundred, appears from one of the palis, like an extensive, well-watered plantation, interspersed with kalo beds and one hundred and forty cottages, and furnishes employment and sustenance to some seven hundred inhabitants. The immense and irregular precipices shut in by each other toward the interior, obstruct the vision of the spectator looking up the valley, but beyond the pleasant opening towards the sea, the eye reaches the distant line where the ocean seems to meet the sky.

Near one of these palis, about a mile from the ocean, Mr. Ruggles chose his station and built a temporary cottage, had a house of worship erected, and opened a school, with the expectation of having a preacher from America stationed there permanently . . . Here, for a time, under Kupihea and Kiaimoku, the two chieftains

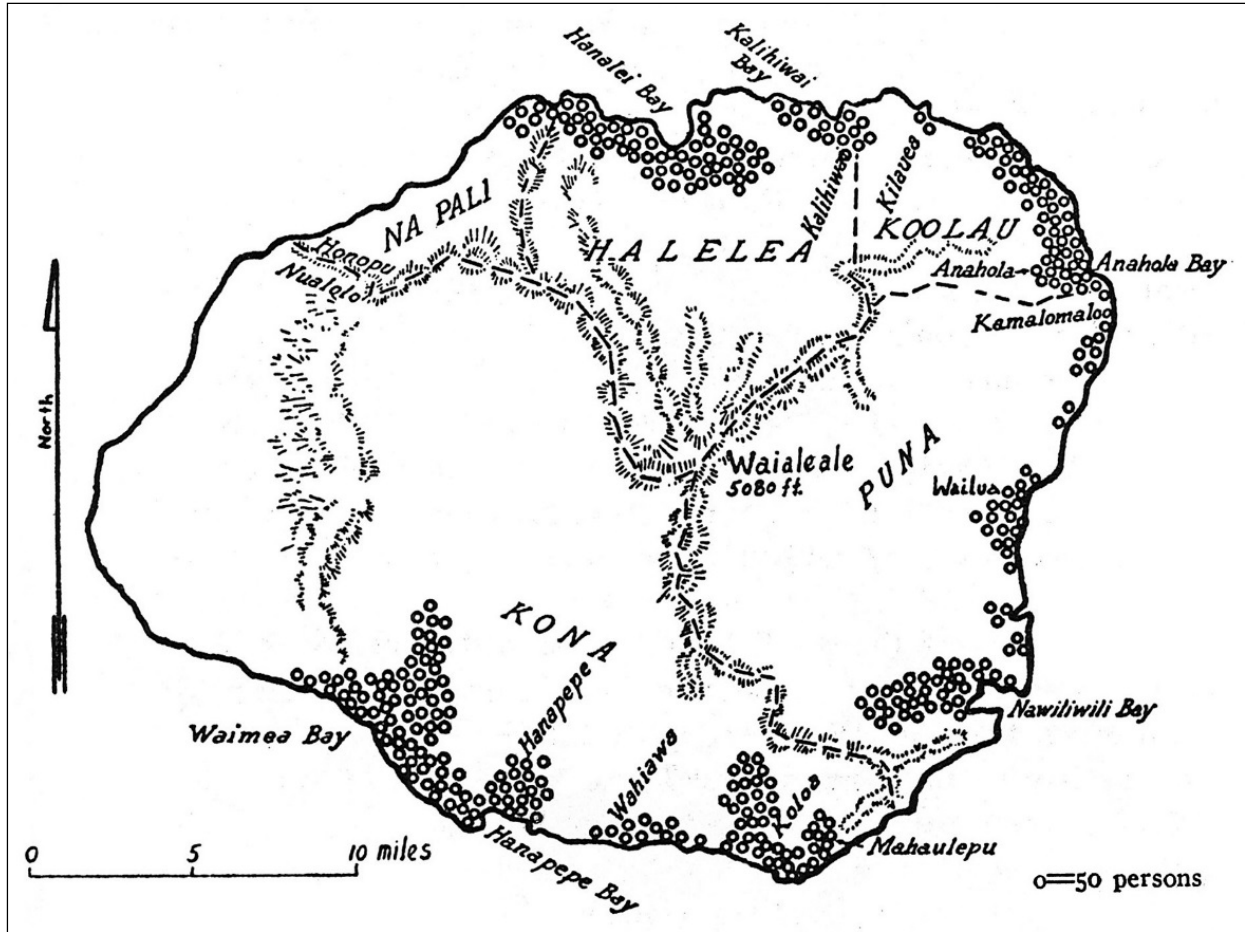


Figure 14. Map showing population estimate for Kaua'i in 1853 (Coulter 1971:16)

of Hanapepe, Mr. Ruggles, with his wife and two children, resided as the shepherd of the valley, esteemed by many of its seven hundred inhabitants and of the ten thousand of the island. [Bingham 1847:218–219]

In 1849, William D. Alexander, head of the Hawaiian government survey between 1850 and 1869, toured Kaua'i and in his journal he describes his journey to see Hanapēpē Falls. The Kauai Bicentennial Committee's entry for May 23 states the following:

This morning about ten o'clock we started in company with Dr. Smith's family for Hanapepe. We arrived at noon at the Mission house on this side of the valley. After getting a hasty dinner we set off with Dr. Smith to see the well-known Hanapepe falls. We rode about a mile along the edge of the valley, & then descending a high & steep pali we rode as far up the valley as was practicable for horses. We then hitched our horses, & went on foot. We had to cross the stream 8 times on our way to the falls. The scenery was grand, & beautiful. The sides of the valley were from 300 to 1000 feet high, now rising into abrupt precipices, & now clothed with the richest green. In crossing the stream in one place, I slipped off a rock into deep water, & got a complete ducking. As however I kept warm by exercise, it did me no injury. The scenery in the upper part of the valley is enlivened by many beautiful little cascades, dashing & foaming down its sides. The principal waterfall is at the head of the valley, 4 or 5 miles from the sea. It was concealed by the turn of the valley till we were very near, when it suddenly burst on our view. The stream pours in a jet for 20 feet, when it strikes the rocks, & spreads out like a fan the rest of its descent. The whole fall is about 200 feet in height. We got back to the house about 50-clock, & determined to pass the night there. I passed a comfortable night except that I was terribly stung by fleas [Kauai Bicentennial Committee 1978:133]

Hanapēpē Falls also attracted a William T. Brigham, Bishop Museum's founding director and a botanist visiting Kaua'i in 1864 and 1865. He wrote in his journal:

Tuesday morning I set out for Hanapepe Falls. The path led down the side of the valley over ridges of deep red earth with blocks of imbedded basalt. The walls of the valley were nearly perpendicular, and from four to five hundred feet high, exhibiting in many places an irregular prismatic structure. In one place this was very beautiful where a projecting point had been naturally terraced, the portions between each flow being covered with grass and convolvulus vines which formed a drapery over the cold dark lava. In some places a prismatic vein had been broken through by an irregular mass of clayey lava running across the direction of the valley. The stream was very rocky and as the valley was very narrow and the wall almost perpendicular, the path went from one side to the other and thus crossed the stream eighteen times. Ohias and bananas were abundant; several dykes crossed the walls at various angles, little canyons on either side opened into the gorge showing beautiful cascades at their upper end in almost every variety of form. The Falls as I measured them, were 326 feet high, and I should judge the walls on either side were at least five hundred. The water was not a large stream but fell against the rocks in such a way as to have a very beautiful effect. A branch joined the river just below the Falls, and near by were some fine orange trees. A mist came down in the

afternoon. Lobelias were abundant on the hillside; ducks and herons were plentiful, and the latter had carried many seashells onto the rocks to eat; small fish were in the stream which no doubt were food for these birds. [Lydgate 1991:149]

In early correspondence Abner Paki, father of Queen Liliu'okalani, states in a letter to the Minister of Interior that Hanapēpē belongs to the King and that the *akule* (Big-eyed scad fish; *Trachuroops crumenophthalmus*) is the taboo fish (letter of 20 April 1852). According to Titcomb this fish is eaten raw, broiled, or cooked in a *ti* leaf bundle placed over the taro in the *imu* (earth oven), is good for *palu* which she says is used in a relish; and is also a favorite fish for drying (Titcomb and Pukui 1972:62). In discussing fishing taboos, Mary Kawena Pukui noted that “Summer was the time when fish were most abundant and therefore the permitted time for inshore fishing. Salt was gathered at this time, also, and large quantities of fish were dried” (Titcomb and Pukui 1972:14). She elaborates, saying that when the *kahuna* had decided conditions were favorable for fishing “For several days it remained the right of the chief to have all the sea foods that were gathered, according to his orders, reserved for his use, and that of his household and retinue. After this, a lesser number of days were the privilege of the *konohiki*. Following this period the area was declared open (*noa*) to the use of all” (Titcomb and Pukui 1972).

Another item of traditional Hawaiian practice found in archived correspondence is fishing rights. A Mr. Isaac Hart applied in 1866 for coastal land and rights to include the fishing boundaries for which he offered to pay \$300. He was apparently granted this right; in 1870 J. and F. Sinclair, having leased or bought most of the District of Kona District (Kaua'i) by this time, wrote to Prime Minister J.O. Dominis seeking redress since they believed their original lease included these fishing rights.

Fishing rights belonged to the *konohiki* and could be used by him and often by his tenants. Chapter III of the Laws of 1840 described free and prohibited fishing grounds:

His Majesty the King hereby takes the fishing grounds from those who now possess them from Hawaii to Kauai, and gives one portion of them to the common people, another portion to landlords, and a portion he reserves to himself.

These are the fishing grounds which His Majesty the King takes and gives to the people: the fishing grounds without the coral reef, viz: the Kilohee grounds, the Luhee ground, the Malolo ground, together with the ocean beyond.

But the fishing grounds from the coral reef to the sea beach are for the landlords and for the tenants of their several lands, but not for others. But if that species of fish which the landlord selects as his own personal portion, should go on to the grounds which are given to the common people, then that species of fish and that only is taboo. [Kosaki 1954:31]

An early traveler to Hawai'i, George Bates, spent the year of 1853 visiting various islands and wrote his book, *Sandwich Island Notes. By a Haole*, which “purports to give an account of what the author saw and heard” (Kuykendall 1968:1:419). Bates describes that, “Hanapepe Valley was dotted with numerous plantations of taro, small cocoa-nut groves and native dwellings” (Coulter 1931:15).

By 1864, in a letter from Valdemer Knudsen, an early Norwegian settler in Waimea, Kaua'i, to J.O. Dominis, Prime Minister for King Kamehameha III, Knudsen requested the right to raise the

rents on Hanapēpē leased lands “since the King owns little *kalo* or rice land in Waimea, but a lot in Hanapēpē, and there is not one idle patch in Waimea, but only a few are planted at Hanapēpē” and he mentioned that “the people there hula from morning to night” (Archive Correspondence Hanapēpē 1 November 1864 in Creed et al. 1995). In 1865, Knudsen was appointed *konohiki* of Hanapēpē Ahupua‘a and a year later he leased Hanapēpē from the King for \$500 a year for 25 years (Archive Letter 9 July 1866 in Creed et al. 1995). Knudsen’s complaint not only emphasizes that a substantial amount of *kalo* and rice land existed in Hanapēpē, but also indicates the practice of *hula* was being seriously pursued, and by some sizeable number of persons, despite missionary efforts to discourage it. Carol Ramelb, in her small pamphlet on the hula, records that for Hawaiian people “[b]efore a written language, the hulas and the chants accompanying them were their history and poetry” (Ramelb 1976:3). She also notes that after the coming of Christianity “In distant villages, some continued to dance behind closed doors” (Ramelb 1976:5). Hula was not officially revived until the 1870s during King Kalākaua’s reign. Another impetus for its practice, besides the traditional religious commitment, was for the entertainment of sailors of the whaling and trading ships. The roadstead of Waimea, as a nearby center of shipping interests, may have helped keep the traditions alive at Hanapēpē; the presence of strong Hawaiian traditionalists within the region, may have also contributed to the perpetuation of the hula. After the cultural influence of King Kalākaua, hula became “seen as the lone surviving art of an ancient people” (Ramelb 1976:6). The people of Hanapēpē helped to keep the art alive.

Eric Knudsen, son of Valdemer Knudsen, mentions passing by Hanapēpē on his first trip around the Island of Kaua‘i in 1895. “We rode through the Makaweli Plantation and soon entered the beautiful valley of Hanapepe and the town of the same name—in those days it was only a small village” (Knudsen 1991:150).

3.1.3.1.3 Sinclair-Robinson-Gay-Knudsen Clan Records

Because the Sinclair-Robinson-Gay-Knudsen clan in early historic times owned most of the district of Waimea and began ranching and sugar cane plantations throughout the area, a brief family history here describes their ties.

Settlers in New Zealand, the Sinclair family was comprised of Captain Francis Sinclair, his wife Eliza, oldest daughter Jean, Jean’s husband Captain Thomas Gay (previously a widower with a 5-year-old son) and their four children, a second daughter Helen (married but separated from Charles B. Robinson) and her son Aubrey, their youngest daughter Annie, and two other sons, Francis and James Sinclair. The family originally came from Scotland. Captain Sinclair and the eldest son were lost at sea sometime while the family was living in New Zealand. Mrs. Eliza Sinclair and all the rest of the family decided to immigrate to British Columbia but then moved on to Hawai‘i in 1863. They bought the island of Ni‘ihau for \$10,000. The youngest daughter, Annie, married Valdemer Knudsen, living across the channel at Waiawa and Eliza Sinclair, “wanting to provide an inheritance for her two elder daughters and their children,” bought the *ahupua‘a* of Makaweli in 1865 from Victoria Kamamalu for \$10,000. Makaweli had become the property of Kamehameha at the time of the 1824 Kaua‘i revolt. At the time of the Māhele it was the property of Kamehameha’s granddaughter Victoria Kamamalu. After they bought Makaweli, the Sinclair clan bought the adjoining district of Hanapēpē (Joesting 1983:190–199) and by 1873 had the entire Kona district in their possession; they still own much of the same land today. By 1873, the young men of the family were beginning to raise cattle. This remarkable clan was known for its love of

literature, botany, art, music, exploring, and recording information about the Hawaiian Islands so it comes as no surprise that the early preservation of place names, stories about places, and *kama'āina* was done by one family member, Francis (Francois) Gay.

Gay describes the uplands of Hanapēpē and Makaweli (in 1873):

The road to Pulilehua came up to Kuapoo through Kaluaalaea Valleys, to Halulu and Keolomea and up to Olonawehi Ridge. Other road was on the other side of Manuahi Valley, up Kawaipuna to Kuahua (junction of Kepani and Manuahi Ridges) to Makaopihi and to Puulehua, to the three bird lands of Makaweli, Manuahi and Koula. Kamakaopihi or Kealaokaopihi was on the west side of Makalalua. At mauka end of ridge notches were cut in the soil of the cliff, making steps down to the saddle of said ridge. Mauka of this was a water filled hollow where people camped in going to Puulehua by way of Nakalalua. [Gay 1873:28]

3.1.3.1.4 Other Information about Early Hanapēpē

Wendell Clark Bennett's survey of Kaua'i in 1928-1929 found evidence of habitation in the upper canyon area and its side valleys including house sites, caves, terraces, burials, an *'ulu maika* (Hawaiian bowling) court, and *'auwai* (ditch) (Bennett 1931:108-110).

Francis Gay mentions Kapuhili Cave. In James Gay's survey of 'Ele'ele, he mentions there is a cave at the southeast boundary between Hanapēpē and Wahiawa. Robert L. Spear located a cave in his archaeological study (Spear 1992) up in the valley but the map shown in his work does not seem far enough into the *ahupua'a* to be in the *'ili* of Kō'ula where Francis Gay's Papoahaku caves are, nor as far as Poakua cave, which Gay describes as on a ridge looking into Manuahi Valley.

James Gay, the boundary surveyor, also mentions a cave named Nihowana, near the boundary of Keawe's *kuleana* and a cave called Heana near the north corner of Kuiloa.

Francis Gay mentions several trails going *mauka* into the mountains and a government road is mentioned in several LCAs and shown on early maps. This government road is seen on early maps in its customary location near the shore. Before the twentieth century, the Hanapēpē River had to be forded when traveling between Waimea and the east. But by 1919 several Hanapēpē River bridges are apparent on maps including the railway bridge. Trails into the mountains, to Halulu and Hanapēpē Falls, are also present on the early maps.

Handy and Handy explain that inhabitants of the far inland areas were called *kua'āina* or "backlanders." They theorize they had little or infrequent contact with the coastal area and its resources (Handy and Handy 1972:397-398). It appears from the Gay map (1873) that the inhabitants were familiar with the uppermost reaches of the valley as each nook and cranny has a name.

During Cook's Third Voyage visit to Waimea, Kaua'i (January 1778), besides inspecting a large *heiau* in Waimea, he describes a feather cape and helmet he received and took to England; today they are in the British Museum in "as good a state of preservation as the day they were obtained" (Cook 1993:350). Feathers were collected in the uplands of Waimea, Makaweli, and Hanapēpē:

Amongst the articles which they brought to barter this day, we could not help taking notice of a particular sort of cloak and cap. The first are nearly of the size and shape

of the short cloaks worn by the women in England. The ground of them is a network, upon which the most beautiful red and yellow feathers are so closely fixed, that the surface might be compared to the thickest and richest velvet, which they resemble, both as to the feel and the glossy appearance.

The cap is made almost exactly like a helmet, with the middle part or crest sometimes of a hand's breadth, and it sits very close upon the head, having notches to admit the ears. It is a frame of twigs and osiers covered with a network, into which are wrought feathers in the same manner as upon the cloaks, though rather closer and less diversified. These probably complete the dress with the cloaks, for the natives sometimes appeared in both together. [Gay 1873]

While the origin of the feathers of this cape and cap is not known, it is not inconceivable that some may have come from Hanapēpē. This upland region of the bird catchers is described by Francis Gay:

Puu-lehua [Lehua hill—A peak at head of this ridge is the highest part of Waialeale, 4775 feet. Junction of all ridges from Olokele to Kahili range Koloa, Puukui is peak makai of Puulehua. This peak, Puulehua divides the land where birds are found at Olokele, Manuahi, Puulehua. Puulehua is the upper end of Manuahi. It is on the upper end of the ili of Manuahi. Above this, Olokele and Koula join to the top of Kawaikini which is the face of cliff of Kawaikini, facing Koula. [Gay 1873:end of first section]

Two other entries by Gay for Hanapēpē also describe bird-related activities:

1. Kapohakukilomanu [(Ka-pohaku-kilo-manu) Stone from which to watch the birds—Valley and stone at Puhi, a branch of Manuahi Valley.
2. Kilo-manu [Watch for birds]—A stone look out for birds. Top of ascent on Manawai ridge. Puhi is the mauka part of Manawai ridge to Puuonanahu [Koula].

Finally, the most touchingly lyric mention of birds can be found in a Land Commission Award for upper Hanapēpē valley (LCA 10349):

The description of the house lot is: the land is Kapewa, with the breadfruit before your eyes, and the bunches of bananas hanging in the dooryard of the house, and the milo tree; on the east is the hill of Holeinui, on the west is a noni grove, a rocky section is to the north; a heaped up row of palis is on the west of me. The /trees/ bearing the ripened fruit eaten by the O'u bird, the lo'is where lives the landshell, chirping in the dawn, the split /fruits of/ the whiteflowered 'ohia, food for the O'o bird, are on the south (Nakapa). [Waihona 'Aina 2000]

3.1.3.1.5 School

The Protestant missionary Ruggles introduced schooling to Hanapēpē shortly before the Kaua'i Rebellion. Twenty-five years later in the LCA claims, the school *pā* (enclosure) is mentioned, but only once (LCA 8020). However, the Hanapēpē Public School Lot of half an acre was not granted until 1 June 1888, and again half a century later Executive Order (# 82) established the Teachers Cottage Lot and Ag Garden for 2.7 acres (7 June 1919).

3.1.3.1.6 Early Diseases

During the time of the Māhele and Kuleana Act, the first influenza epidemic took island lives in May 1848 and generally weakened the population (Thrum 1918:33). People of Hanapēpē also died from leprosy, the measles, and smallpox epidemics during 1898 and 1852, and one man went crazy and died (Gay 1873).

3.1.3.1.7 Rice Cultivation

Rice cultivation began in Waimea Valley in the 1860s and peaked in the 1890s. Most of the crop was grown by Chinese farmers who continued production on the valley floor well into the 1930s (Handy and Handy 1972:405; Joesting 1984:206–207). Many of the first Hanapēpē Town Lots were in the form of grants to inhabitants of Japanese or Chinese ancestry around 1921. “Much taro land was converted to rice during this period, not only at Waimea but in other areas of the island causing a taro shortage for a time” (Ida and Hammatt 1993). In 1918, official correspondence notes 78 applications for homesteading in Hanapēpē (Archive correspondence of 24 May 1918 in Creed et al. 1995).

3.1.3.1.8 The Plantation Era

Major foreign interests began to invest in ‘Ele‘ele, Wahiawa, and surrounding areas of Hanapēpē in the mid- to late nineteenth century, following acts allowing foreigners to own lands in Hawai‘i. The development of large-scale agricultural ventures was also stimulated by the Reciprocity Treaty of 1875 governing trade between the Kingdom of Hawai‘i and the United States. The Reciprocity Treaty allowed for certain goods, including sugar, to be exported duty free to the U.S.

Duncan McBryde relocated to Wahiawa from his estate in Wailua around 1860 (Damon 1931). McBryde developed the extensive Wahiawa Ranch and ventured into sugar cane cultivation in Wahiawa and surrounding lands by 1870 (Damon 1931) (Figure 15). McBryde died in 1878 and his wife, Mrs. Elizabeth McBryde and August Drier (the manager), entered into a partnership forming the Eleele Sugar Plantation when they bought land from Bernice Pauahi Bishop.

Eleele Plantation was a nearby sugar plantation east of the Hanapēpē River and northeast of Hanapēpē Bay (Figure 16). The plantation had its own mill and its own landing at what later to become Port Allen. Eleele Plantation was considered to have “the most fertile lands in the district and an ample supply of water” (Condé and Best 1973:197). The predominance of sugar cane in the area was evidenced by cane fields and railroad tracks that traversed the landscape. The *Honolulu Advertiser* in a 1949 column labelled “50 Years Ago” noted that the first electric locomotive in the Hawaiian Islands was built and operated at the Eleele Plantation, Kaua‘i, in 1899 (Condé and Best 1973).

The expansion of the sugar industry necessitated the importation of Japanese, Chinese, Filipino, and Portuguese laborers beginning in the mid-1800s (Armstrong 1983). With a declining Native Hawaiian population, labor importation permanently created a multi-ethnic population.

The McBryde Sugar Company resulted from annexation of Hawai‘i to the United States (1898) rather than the Reciprocity Treaty (1876) that exchanged favorable Hawai‘i sugar prices for use of Pearl Harbor as a U.S. naval base. The McBryde Sugar Company was the consolidation of three estates: Koloa Agricultural Company, Eleele Plantation, and the Wahiawa Ranch. It was promoted

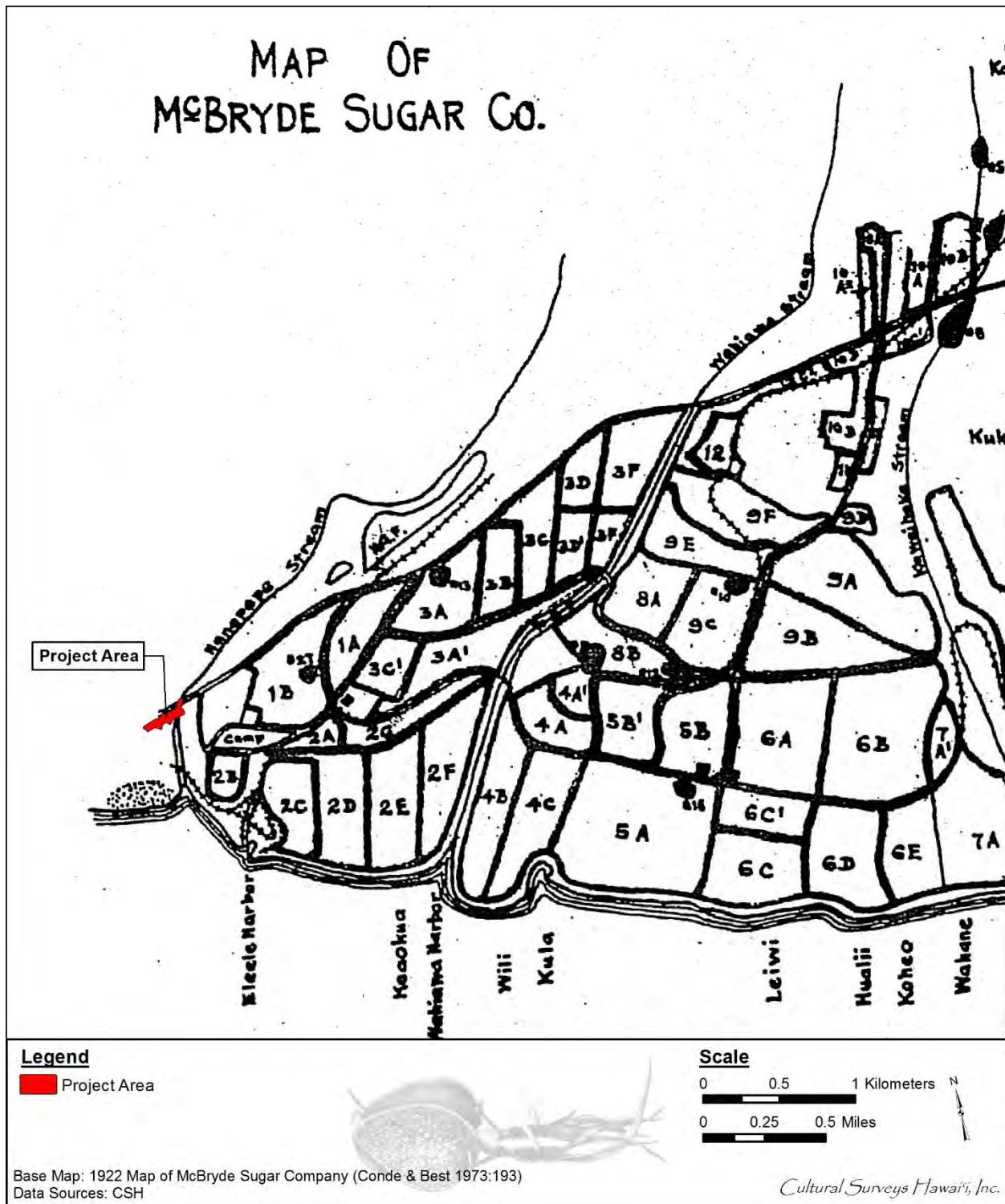


Figure 15. Portion of a 1922 Field map of McBryde Sugar Company (Condé and Best 1973:191)



Figure 16. Photo of sugar mill in 'Ele'ele, ca. 1885 (Post Office in Paradise 2014)

by Benjamin F. Dillingham with Theo. H. Davies & Company as agents. The company's 1899 prospectus described it thus:

The plantation extends continuously eight miles along the sea coast, and this space is being connected up with a 30 lb. 30 inch gauge railway running parallel to the sea and about ½ mile distant from it. This road keeps to an elevation of about 200 feet, except at either end and crossing the Lawai Valley, where it drops down close to sea level. The mill is located on the line of the road in open level land about one third of the way across the plantation from its west end. A spur from the main track runs along the edge of the Hanapepe Valley to drop coal to the pumping stations in the valley below. [Condé and Best 1973:191]

The Hawaiian Sugar Company of Makaweli was right next door (west) to the McBryde Plantation as shown on the field maps of these two plantations (see Figure 15 and Figure 17). The Hawaiian Sugar Company plantation preceded the later Olokele Plantation and extended from the sea 7 miles to the 1,000 ft elevation. Hawaiian Sugar Company was founded in 1891; Alexander & Baldwin (A&B) took over the plantation in 1889. The company worked out a shipping agreement in 1908 with Kauai Railroad, extending the rail line to 'Ele'ele Landing and building a substantial bridge across the Hanapēpē River.

Historic coffee commercial ventures on the island of Kaua'i started in 1836 and by 1845 they ended in failure. Only 248 pounds were grown on both Kaua'i and Hawai'i Island according to the first records of production in 1845 (Wikipedia 2014).

3.1.4 1900s

3.1.4.1.1 Sugar Plantation Continues

In 1906, the plantation-sponsored Kauai Railway company was incorporated. It started business in 1907 with the McBryde Plantation handling the entire operation. In 1909, Alexander & Baldwin took over the railroad. In 1909, Hawaiian Sugar Company contracted to also use it and the company extended its tracks to the 'Ele'ele Landing. By 1910 it had 8 miles of track and by 1920, 19.22 miles of track. Substantial repairs were made to the railway bridge in 1911, 1912, and 1913 (Condé and Best 1973:135).

In 1941, when the Kauai Railway liquidated, they had six steam locomotives and 704 cane cars plus others (Condé and Best 1973:135). There is a monument to Baldwin near the place where Kuwiliwili Heiau is thought to have stood. The sugar mill in 'Ele'ele is shown in Figure 16. The McBryde Mill is shown in Figure 18.

Sugar cane cultivation continued to dominate land use in the Hanapēpē and 'Ele'ele areas through the mid-1900s. A 1977 USGS orthophotograph (Figure 19) shows the continued widespread cultivation of sugar cane within and in the vicinity of the project area.

In 1985, the McBryde Sugar Company ranked as Hawai'i's eighth largest sugar plantation. However, sugar plantations soon became unprofitable, bringing an end to McBryde's sugar production in 1996. Much of the former McBryde sugar lands were converted into coffee production, with the Kaua'i Coffee Company replacing the McBryde Sugar Company. Today, remnants of the plantation era can be seen through the architecture and layout of the town, and these combined with its unique cultural features have turned Hanapēpē into one of Kaua'i Island's most popular tourist attractions.

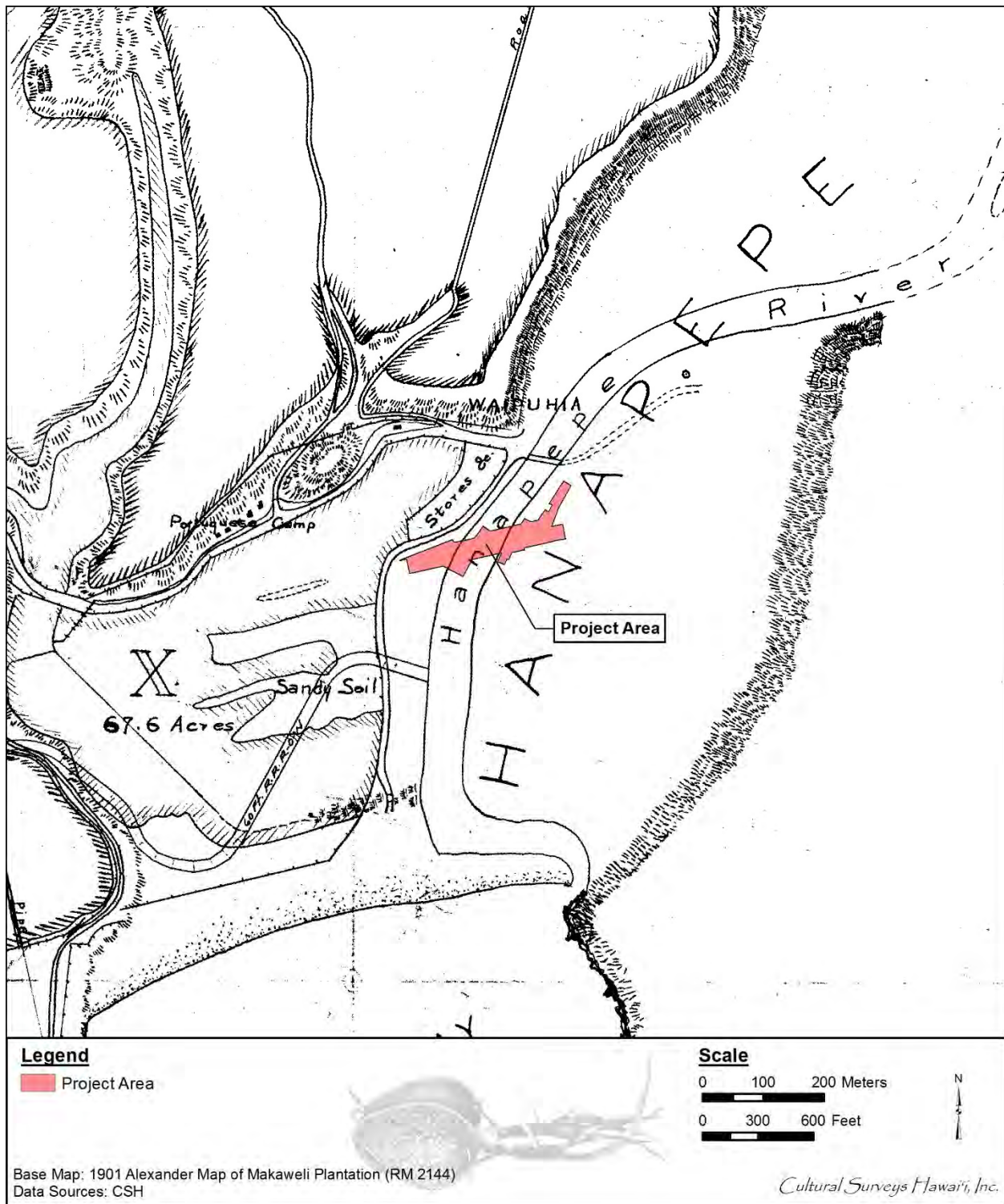


Figure 17. A portion of a 1901 Alexander map showing Makaweli Plantation

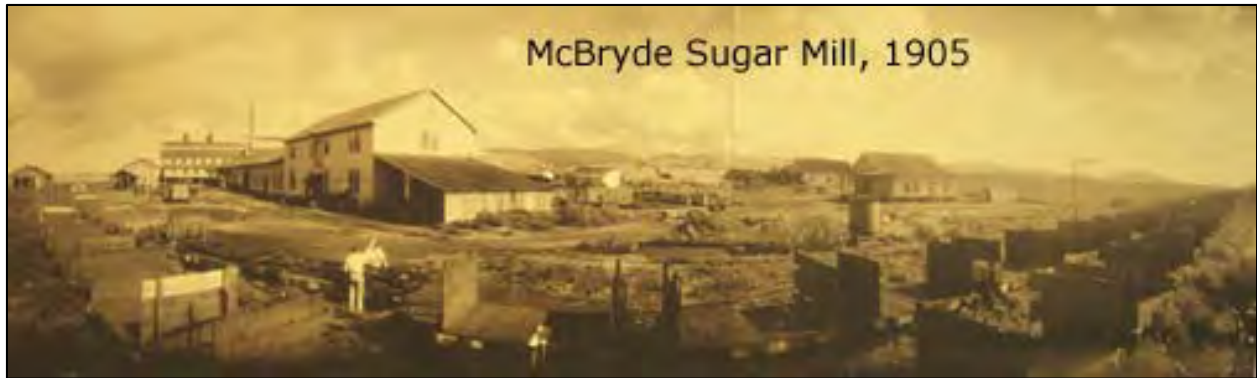


Figure 18. Photo of McBryde Sugar Mill in 1905 (Post Office in Paradise 2014)

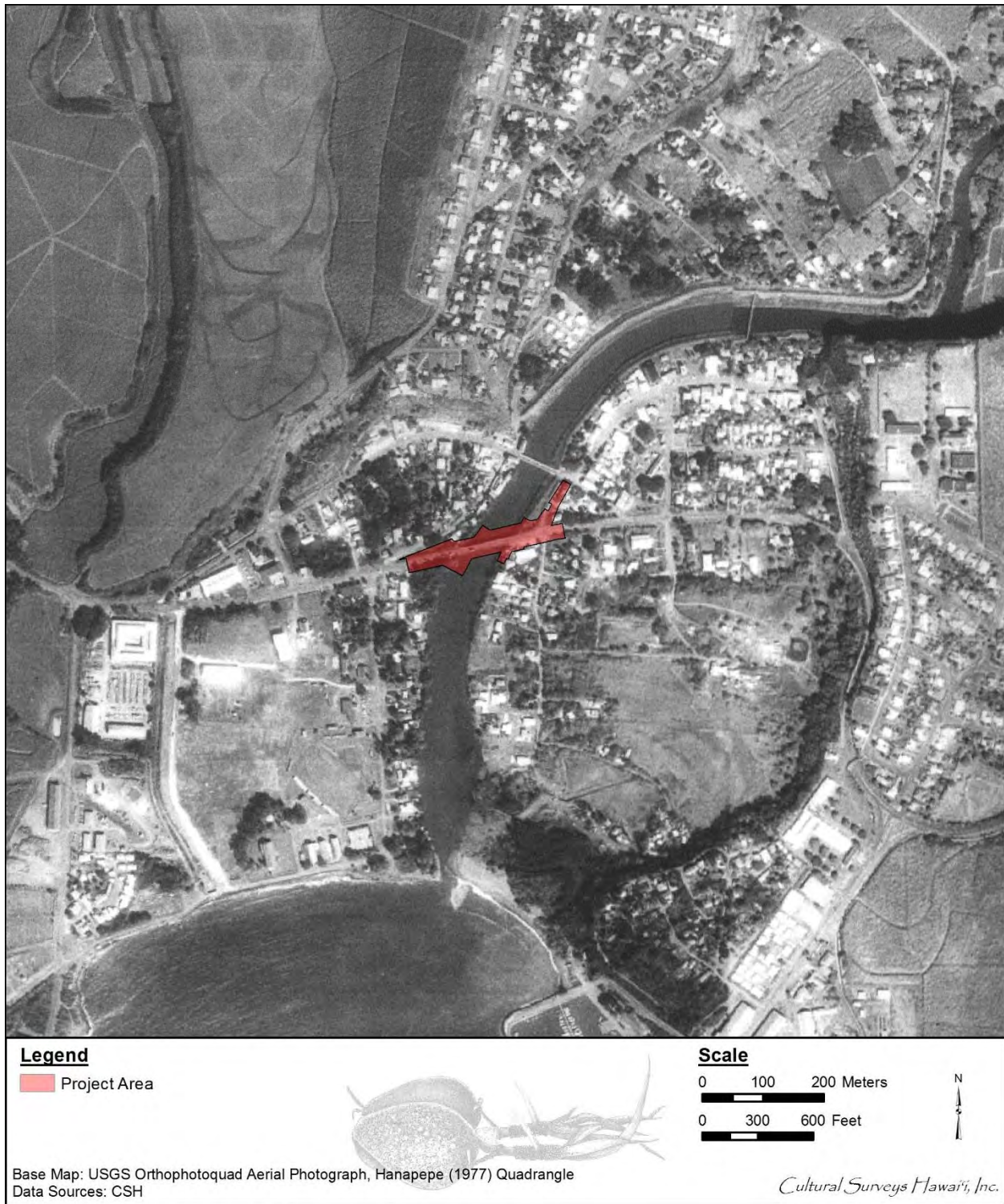


Figure 19. Portion of a 1977 USGS orthophoto of Hanapepe Quadrangle showing project area

3.1.4.1.2 Battle of Hanapēpē or the Massacre at Hanapēpē, 1924

The Battle of Hanapēpē, sometimes referred to as the Massacre at Hanapēpē, occurred on 9 September 1924, killing 16 Filipino workers and four Kaua'i policemen. The massacre came at the end of an eight-month attempt of more than 3,000 workers on four islands to raise the wages of Filipino sugar workers to \$2 a day, as well as improve work and living conditions (Chang 2006a, b; Gordon 2006; Reinecke 1996). In Kaua'i, the 1924 strike attracted 300 Visayan workers out of a potential 10,000 Filipino workers, and it occurred with the help of labor leader Pablo Manlapit (Sobeleski 2006).

This was a relatively small number compared to the 1920 sugar strike organized by Manlapit involving more than 8,300 Japanese and Filipinos as well as Puerto Rican and Spanish workers. The strikers' punishment was swift: they were evicted from their company homes, strikebreakers were hired, and strike leaders prosecuted. Manlapit was subsequently portrayed in the media as an "extortionist" (Gordon 2006:1).

With only an elementary education, Manlapit had come to Hawai'i along with other Filipinos as a sugar cane field worker, where he and others faced 10 hours of daily back-breaking work, six days a week for about 77 cents a day, "being paid less than other nationalities for the same work, with poor housing and lack of opportunities for advancement adding to their plight" (Sobeleski 2006:1). Meanwhile, "in 1924, the ten leading sugar companies listed on the Stock Exchange paid dividends averaging 17 percent. From 1913 to 1923 eleven leading sugar companies paid cash dividends of 172.45 percent and in addition most of them issued large stock dividends" (Center for Labor Education and Research, quoting Talbot 1925).

Although he had arrived in Hawai'i as a sugar cane field worker, Manlapit studied at night and eventually became a lawyer, organizing the Filipino Labor Union (Sobeleski 2006). Although Manlapit was not present during the Hanapēpē massacre, he was subsequently blamed and imprisoned.

The chain of events that ended as a massacre began when two potential strikebreakers, Filipinos of Ilocano descent, were seized by the strikers as they passed the camp. When Kaua'i policemen came to free the two men, the strikers followed the group. The strikers were mostly armed with homemade weapons and knives, and in one account, they urged the policemen to fight them (Reinecke 1996:77). It is not clear who shot the first bullet, or who made the first attack, but the following is what is known:

The Hanapepe Massacre took place just before the road that went uphill to Camp 2 (just east of today's intersection at Hanapepe and Moi roads), and during a furious melee that lasted five minutes, two policemen climbed a small bluff (that still exists) and fired into the crowd with their rifles, killing many strikers as they fled into a nearby banana patch. [Sobeleski 2006:2]

In addition to the dead, there were nine strikers wounded along with three policemen who were injured by knives (Sobeleski 2006:2). The men who made up the "policemen" were mostly cowboys and hunters; in another account, there were three cowboys who took their places above the road and shot at the strikers as they approached Sheriff Crowell and his deputies (Reinecke 1996:78). After the melee, 101 strikers from the Hanapēpē Camp were arrested the same day, followed by 29 strikers the following day. They were all squeezed into the Līhu'e and Waimea

jails, while their children and wives were housed in the old school building (Reinecke 1996:78). Even those workers who were not present in the camp were arrested and charged with “dangerous and disorderly conduct” and Filipinos were forbidden to go across Wailua Bridge toward Līhu‘e and Hanapēpē (Reinecke 1996:79).

The massacre has not been discussed much by succeeding generations, mostly due to Filipinos wanting to forget or hide their embarrassment (Chang 2006b:1). According to an interview with a Filipino-Hawaiian reporter, Emme Tomimbang, “This was a hush-hush thing . . . They just wanted to bury the incident in the way they buried the men” (Chang 2006a:1). Those that were killed in the massacre were buried in a mass grave at the Filipino Cemetery in Hanapēpē (University of Hawaii at Manoa 1979). The Hawaiian Sugar Planters’ Association (HSPA) made it a point to reimburse the families of each slain policeman \$500, while in contrast, the Filipino community contributed \$82.35 for the funeral of the strikers and \$75.95 for their bereaved families (Reinecke 1996:80).

The Battle at Hanapēpē succeeded in pressuring the plantations into a more progressive mode with changes in recruiting, labor, and management (Reinecke 1996). It also strengthened unionization efforts and aided in the creation of the first union in Hawai‘i, the International Longshore and Warehouse Union (ILWU) (Chang 2006a:3).

3.1.4.1.3 Kauai Coffee Company

The Kauai Coffee Company was originally the McBryde Sugar Company Plantation. When Alexander & Baldwin took over in 1987, they began to grow coffee alongside sugar cane. The transformation from McBryde Sugar to Kauai Coffee represented Hawai‘i’s largest diversified agricultural business in the last 50 years (Kauai Coffee 2014). From 1987 to 1992, Kauai Coffee was a joint venture of A&B and Hills Bros. (Beat of Hawaii 2014). In 1992, Hurricane Iniki caused damage to the coffee crops, about \$8.5 million worth, and Hills Bros. withdrew from the partnership. In 1995, the sugar industry started to phase out for A&B and by 1996, the amount of coffee harvested on Kaua‘i exceeded the amount of coffee produced on Hawai‘i Island for the first time in coffee history (Hawaii for Visitors 2014; Kauai Coffee 2014).

3.1.5 Modern Land Use

At the close of the twentieth century, two of Kaua‘i’s three sugar plantations shut down, Kekaha and Lihue plantations, ending the sugar plantation era on the southeast and east sides of the island. Less than ten years later, the last vestige of Kaua‘i’s sugar plantation era came to an end with the closing of Olokele Plantation in 2009.

With the closing of sugar plantations and the opening of the cane lands, agribusiness companies (also known as seed companies) started to migrate to the Hawaiian Islands to utilize the plantation fields and some of their infrastructure. Four major agribusiness companies currently operate on Kaua‘i: BASF Plant Science, Dow AgroSciences, DuPont Pioneer, and Syngenta.

In general, Hanapēpē Ahupua‘a has seen few changes in land use, with the exception of small areas of commercial development near Port Allen in ‘Ele‘ele. A few residential self-help homes are being built. Several acres of land between Hanapēpē and Wahiawa Ahupua‘a are being utilized for renewable energy with the construction of solar power panels.

Within the current project area, very little change has occurred within the last 50 years. As historic records indicate, the area around the Hanapēpē bridges consisted of LCA parcels and cane lands during the plantation era. During the later historic period, as more people started to migrate to Hanapēpē, cane lands within the vicinity of the project area phased out as more residential and commercial buildings were being built.

On a 1963 Hanapepe USGS topographic map, the Kaumuali'i Highway and Hanapēpē Road are shown in their present form with relatively little change evident between the 1963 and 1996 Hanapepe USGS topographic maps (compare Figure 20 and Figure 1).

3.2 Previous Archaeological Research

Few archaeological studies have been conducted in the vicinity of the project area. The locations of previous archaeological studies conducted within a 0.8-kilometer (km) (0.5-mile) radius of the project area are shown in Figure 21 and listed in Table 2. The findings of these archaeological studies are shown in Figure 22 and listed in Table 3. These studies are discussed in detail in the following paragraphs.

3.2.1 Thrum 1907; Beckwith 1970

Thomas G. Thrum (1907) recorded seven *heiau* in Hanapēpē: Nihoana, Makaole, Pualu, Kuwiliwili, Kauakahinunu, Moloku, and a *heiau* with no name. Wendell Bennett conducted an archaeological survey of Kaua'i Island years later (1931) and located five of Thrum's *heiau*: Makaole, Pualu, Kuwiliwili, Kauakahinunu, and Moloku. The following section describes *heiau* in the *ahupua'a* of Hanapēpē in more detail.

3.2.1.1 Nihoana Heiau

Nihoana is described as a low-walled, small *heiau*, about 20 by 30 ft in 'Ele'ele. It is recorded to have been destroyed (Thrum 1907:37). Bennett made no mention of this site.

3.2.1.2 Makole Heiau

Thrum describes Makole Heiau as a small *heiau* of platform character. It is said to have been on Makole Bluff in Hanapēpē and destroyed in the 1860s. A portion of the wall is said to be still seen (Thrum 1907:37). Bennett, in his 1928–1929 island-wide survey could not confirm the walls of this *heiau* (Site 54) (Bennett 1931:113).

3.2.1.3 Pualu Heiau

Pualu, located in Kapahili Hanapēpē is a partly walled paved *heiau* at the base of a hill, built up some 6 ft in front and filled in with stones. Thrum reports that the *heiau* is of the *po'okanaka* (another word referring to a *luakini heiau*, human sacrificial *heiau*) class of which Kāne was its deity. It is described to be in greatly disturbed condition—its front badly fallen away in places. The rear wall stands 4 ft above the *heiau* floor in good state though not over 4 ft thick. It measures 135 ft straight on the back and on the west end 40 ft, curving on the front so as to give 54 ft at the middle and rounding off to a point at the east end (Thrum 1907:37). During his 1928–1929 island survey around Kaua'i, Bennett confirmed this *heiau* (Site 55) and identified new features that Thrum did not and concluded they could have been built after Thrum's survey. Bennett also closely examined the shape of the *heiau* and concluded that originally the *heiau* had more the shape of a rectangle with a square taken out of the corner (Bennett 1931:113).



Figure 20. Portion of the 1963 Hanapepe USGS topographic quadrangle showing the location of the project area

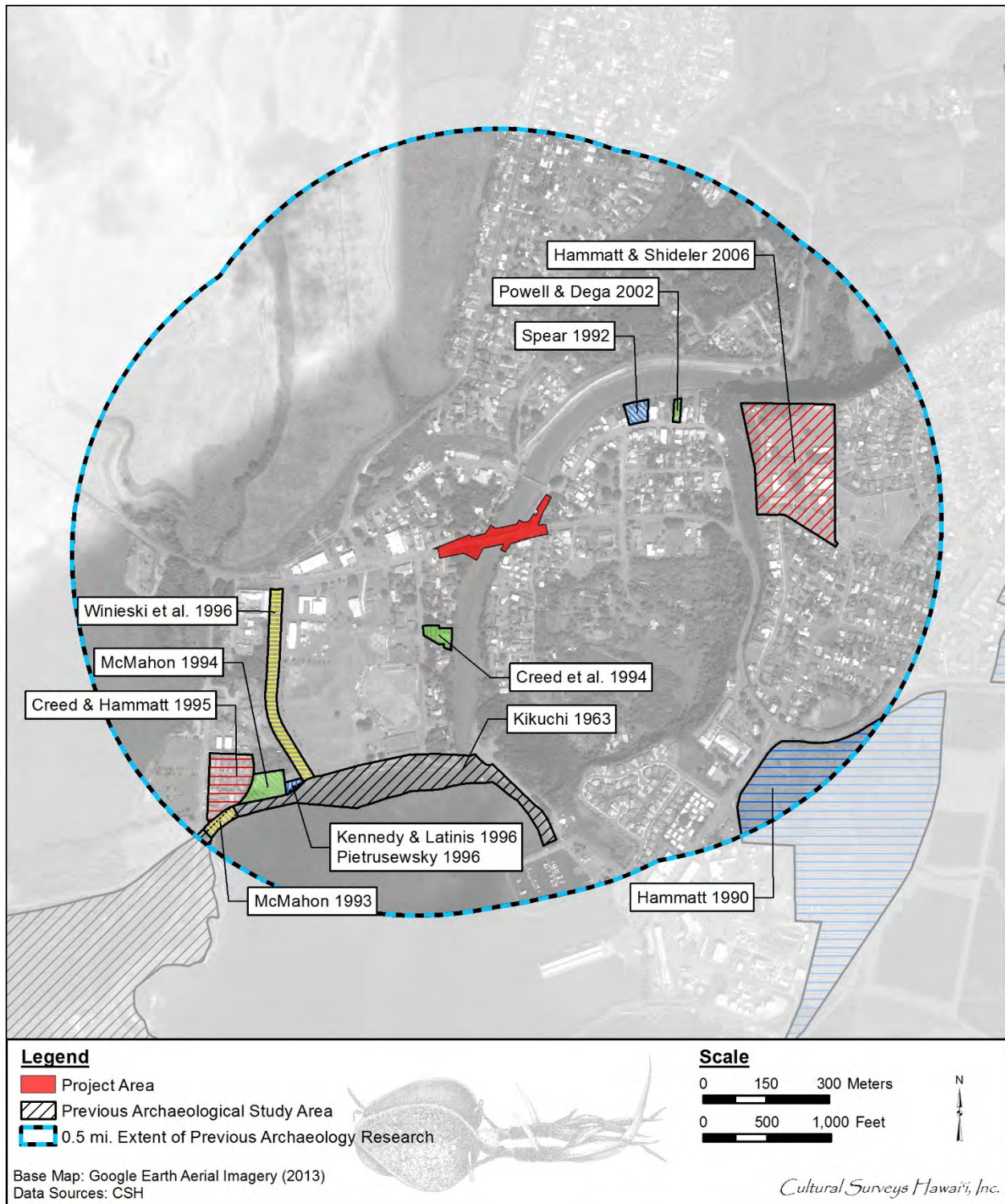


Figure 21. 2013 aerial photograph showing locations of previous archaeological studies within a 0.8-km (0.5-mile) radius of the project area; Thrum 1907, Bennett 1931, and Kikuchi and Remoaldo 1992 not depicted (Google Earth 2013)

Table 2. Previous Archaeological Studies within a 0.8-km (0.5-mile) Radius of the Project Area

Reference	Type of Study	Location	Results (SIHP # 50-30-09-xxxx)
Thrum 1907	Listing of <i>heiau</i>	Island-wide	Recorded seven <i>heiau</i> in Hanapēpē consisting of Nihoana, Makaole, Pualu, Kuwiliwili, Kauakahinunu, Moloku, and a <i>heiau</i> with no name (not shown on Figure 27)
Bennett 1931	Archaeology of Kaua'i	Island-wide	Located five of Thrum's <i>heiau</i> ; Nihoana and Moloku <i>heiau</i> not identified (not shown on Figure 27)
Kikuchi 1963	Archaeological inventory survey	Kona District	Examined caves in Hanapēpē Valley (SIHP # -3037); identified Salt Pond Beach Park, Site 3 (SIHP # -3038)
Hammatt 1990	Archaeological reconnaissance	72 acres, Hanapēpē (TMKs: [4] 2-1-001 and 2-1-001:027)	No archaeological sites identified
Kikuchi and Remoaldo 1992	Cemeteries of Kaua'i	Island-wide	Identified six cemeteries in Hanapēpē (SIHP #s -0497, -0603, -0604, -0607, -0608, and -0651) (not shown on Figure 27)
Spear 1992	Archaeological inventory survey	Hanapēpē First United Church of Christ (TMK: [4] 1-9-004:011)	Recorded three burial plots on church ground; also conducted six test units, five features identified during survey: Feature 1 (trash pit), Feature 2 (cat burial), and Features 3–5 (burial plots)
McMahon 1993	Inadvertent burial discovery	Hanapēpē Bay (TMK: [4] 1-8-008:003)	Site 53, two burial site areas
Creed et al. 1994	Archaeological inventory survey	House lot in Hanapēpē (TMKs: [4] 1-9-010:002 and 003)	Eight backhoe trenches, historic cultural deposit present in four trenches, SIHP #s -0704 and -0705 (human burials) identified in two trenches
McMahon 1994	Inadvertent burial discovery	Hanapēpē Japanese Cemetery (TMK: [4] 1-8-008:014)	SIHP # -0651, inadvertent discovery of single human remain

Reference	Type of Study	Location	Results (SIHP # 50-30-09-xxxx)
Creed and Hammatt 1995	Archaeological inventory survey and subsurface testing	3.246-acre parcel for Self-Help Housing (TMK: [4] 1-8-008:019)	Five backhoe trenches completed; no historic properties identified
Kennedy and Latinis 1996	Burial treatment plan and archaeological treatment of an inadvertent burial	Pu'olo Rd	Possible burial may be a feature of Bennett Site 53
Pietrusewsky 1996	Skeletal analysis	Pu'olo Rd	50-59-year-old male; probable Polynesian (Hawaiian) ancestry
Winieski et al. 1996	Archaeological monitoring	Hanapēpē Drainage Improvement project (TMK: [4] 1-9-008:045)	SIHP # -1987 (coffin burial) and several fragments of human burials encountered
Powell and Dega 2002	Burial treatment of human remains	Old Hanapēpē Pool Hall (TMK: [4] 1-9-004:008)	Documentation and recovered human skeletal remains, SIHP # -1710
Hammatt and Shideler 2006	Archaeological literature review and field check	'Ele'ele Elementary School	Background research and field check gave no indications of archaeological concerns; no further work recommended

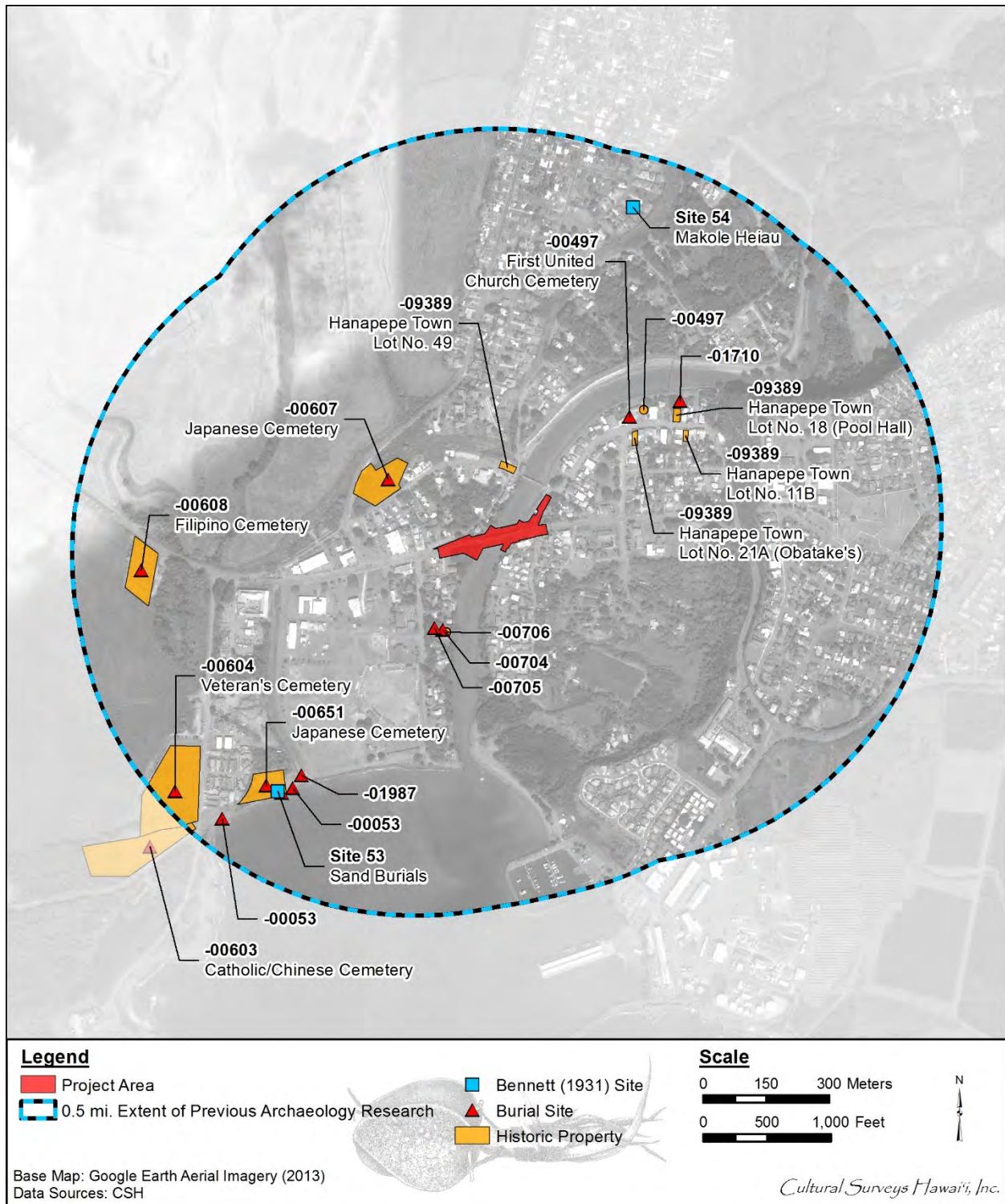


Figure 22. Aerial photograph showing locations of previous identified historic and archaeological sites within a 0.8-km (0.5-mile) radius of the project area

Table 3. Previously Identified Historic properties within a 0.8-km (0.5-mile) Radius of the Project Area

Site #	Site Type/Name	Location	Reference
53, -00053	Sand burials	Located in sand on northwest side of Hanapēpē Bay	Bennett 1931:112
54	Makole Heiau	Makole bluff	Thrum 1906, Bennett 1931:113
-0497, B012	Pre-Contact cultural deposit	Southeast corner of proposed building for Hanapēpē First United Church of Christ (TMK: [4] 1-9-004:011)	Spear 1992:3, Kikuchi and Remoaldo 1992:195–197
-0603, B004	Catholic/Chinese Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0604, B005	Veteran's Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0607, B008	Hanapēpē Heights Japanese Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0608, B003	Filipino Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0651	Hanapēpē Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0704	Burial	Near Hanapēpē River south of Kaumuali'i Hwy	Creed et al. 1994:66
-0705	Burial	Near Hanapēpē River south of Kaumuali'i Hwy	Creed et al. 1994:66
-0706	Cultural deposits	Near Hanapēpē River south of Kaumuali'i Hwy	Creed et al. 1994:66
-1710	Historic burial	Located within SIHP # -9389 Lot No. 18 (TMK: [4] 1-9-004:008)	Powell and Dega 2002
-1987	Primary coffin burial	Western bank of drainage canal near Japanese Cemetery	Winieski et al. 1996:55
-9389 Lot No. 11B	Building	TMK: [4] 1-9-005:053	—
-9389 Lot No. 18	Building (former pool hall)	TMK: [4] 1-9-004: 008	—
-9389 Lot No. 21A	Building (Obatake's)	TMK: [4] 1-9-005:041	—
-9389 Lot No. 49	Building	TMK: [4] 1-9-011:008	—

3.2.1.4 Kuwiliwili Heiau

Kuwiliwili Heiau is of the *po'okanaka* class in Hanapēpē Valley. It is now destroyed but it was a large high-walled enclosure (Thrum 1907:38). By the time Bennett surveyed the area, this *heiau* (Site 48) was no longer in existence (Bennett 1931:112).

3.2.1.5 Kauakahinunu Heiau

This *heiau* is of an unknown class and recorded by Thrum as still standing at the shores of Puolo Point. It is a walled *heiau* of medium size with part of the walls still standing. The *heiau* was dedicated to Kāne and Kanaloa (Thrum 1907:38). Bennett makes no mention of this site.

3.2.1.6 Moloku Heiau

This *heiau* is located near the peak of Kuopoo Ridge at a junction with Kahalau. It is described by Thrum as an open platform in fair condition (Thrum 1907:38). Bennett mentions this *heiau* (Site 59) in his island-wide survey (1931:114).

3.2.1.7 Unknown/Akowai Heiau

During Thrum's survey, he described this *heiau* as a small paved *heiau* of about 50 ft located at Akowai and said to have been erected by Kaumuali'i. It is of an unknown class and destroyed in 1865 (Thrum 1907:38). No name was mentioned for this *heiau* in Thrum's study. Bennett reidentified this site in his 1928-1929 island-wide survey and referred to it as Akowai Heiau (Site 56), most likely due to the *heiau* being located as he describes it "at a place called Akowai on the steeply sloping side of a bluff" (Bennett 1931:113). He also mentions there were a number of house sites (Site 57) and a jumbled mass of wall that might have been the *heiau* (Bennett 1931:113). The house sites were labeled Site 57.

3.2.1.8 Kuikahi Heiau

Kuikahi Heiau is mentioned in Martha Beckwith's *Hawaiian Mythology* in a prayer given by Kāne when he began to offer prayer in the *heiau* of Kuikahi at Hanapēpē, Kaua'i, near the stream of Manawai-o-puna, which calls upon the lesser Kāne gods to do their duty and aid him (Beckwith 1970:53). Manawaiopuna stream is in the *'ili* of Ko'ula, far up the valley.

3.2.1.9 Hauola Heiau

In the legend of 'Ola, the *menehune* (small mythical people) help 'Ola to build the *heiau* of Hauola. As stated by Beckwith, "these people [menehune] also build the *heiau* of Hauola named after the famous city of refuge of his father at Kekaha" (Beckwith 1970:328).

3.2.2 Bennett 1931

The first systematic archaeological survey of Kaua'i was conducted by Bennett (1931), in which he documented several historic properties in Hanapēpē. Historic property locations were generally limited to areas along the coast and within stream valleys. It should be noted that Bennett's work was conducted after commercial sugar cane cultivation and other historic activities had destroyed or damaged many historic properties. Also, most of the historic properties documented by Bennett were relatively easy to access and relatively conspicuous and obvious.

Bennett (1931) documented five historic properties along the Hanapēpē shoreline. Historic properties located near Puolo Point included salt pans (Site 49), house sites (Site 50), Kauakahinunu

Heiau (Site 51), and a house site or fishing shrine (Site 52). Bennett noted damage to the historic properties in the area due to construction of an airport. Site 53 consisted of a burial ground in the sand at the northwestern side of Hanapēpē Bay. All five sites are near the project area, particularly Site 53. Bennett (1931) recorded several historic properties within Hanapēpē Valley, including Sites 56 and 57 in the *makai* (seaward) portion of the valley. Site 56 was Akowai Heiau, noted by Thrum (1907) to have been destroyed ca. 1865. Site 57 consisted of house sites at the former location of Akowai Heiau.

3.2.3 Kikuchi 1963

Kikuchi (1963) conducted an archaeological survey of the Kona District of Kaua'i, where he revisited historic properties identified by Bennett and recorded additional historic properties. Historic properties identified in Hanapēpē included burial caves in Hanapēpē Valley (SIHP # -3037) and a subsurface cultural layer (SIHP # -3038) located along the Hanapēpē shoreline. Both historic properties are outside the project area though SIHP # -3038 is closer to the project area near the coast.

3.2.4 'Ele'ele/Port Allen (Hammatt 1990)

Hammatt (1990) conducted an archaeological reconnaissance survey of 72 acres at 'Ele'ele/Port Allen, located in the *'ili* of 'Ele'ele, outside the modern *ahupua'a* boundary of Hanapēpē. No historic properties were identified within the study area. The report did note the location of a Japanese cemetery along the shoreline.

3.2.5 Kikuchi and Remoaldo 1992

Kikuchi and Remoaldo (1992) conducted a survey and inventory of the cemeteries on Kaua'i. The Hanapēpē cemeteries include the Hanapēpē First United Church of Christ (SIHP # -0497, B012), the Catholic/Chinese Cemetery (SIHP # -0603, B004), the Veteran's Cemetery (SIHP # -0604, B005), the Hanapēpē Heights Japanese Cemetery (SIHP # -0607, B008), the Filipino Cemetery (SIHP # -0608, B003), and the Hanapēpē Cemetery (SIHP # -0651).

3.2.6 Hanapēpē First United Church of Christ (Spear 1992)

Spear (1992) conducted an archaeological inventory survey of the Hanapēpē First United Church of Christ, located along the eastern bank of the Hanapēpē River. Subsurface testing revealed a pre-Contact cultural deposit (SIHP # -0497). Three marked graves within the church parcel were also included in the SIHP historic property designation.

3.2.7 Old Puolo Road (McMahon 1993)

In 1993, Nancy McMahon investigated an inadvertent burial (Site 53) discovered beneath the old Puolo Road. The burial was discovered approximately 90 cm below the old road surface. A long bone and the lower half of a jaw bone were observed (McMahon 1993).

3.2.8 Hanapēpē Japanese Cemetery (McMahon 1994)

In 1994, an inadvertent burial discovery was made near the Hanapēpē Japanese Cemetery (SIHP # -0651) (McMahon 1994). Due to the extremely low tide, a humerus was exposed at the edge of the corner of the cemetery. No ethnic determination could be made on the single human remain.

3.2.9 Creed et al. 1994

Creed et al. (1994) conducted an archaeological inventory survey of a house lot located along the western bank of the Hanapēpē River. Subsurface testing revealed two human burials (SIHP #s -0704 and -0705) and a subsurface cultural deposit (SIHP # -0706). Radiocarbon dating of charcoal from the cultural deposit yielded a date range of AD 1811-1927.

3.2.10 Hanapēpē Self-Help Housing Project (Creed and Hammatt 1995)

Creed and Hammatt (1995) conducted an archaeological inventory survey for the Hanapēpē Self-Help Housing project, located along the northwest portion of Hanapēpē Bay. No surface historic properties were observed and subsurface testing did not reveal buried cultural deposits.

3.2.11 Puolo Road (Kennedy and Latinis 1996; Pietrusewsky 1996; Winieski et al. 1996)

Kennedy and Latinis (1996) reported on the treatment of an inadvertent burial discovery located on Puolo Road fronting Hanapēpē Bay. The remains were determined to be of likely Polynesian ancestry and were included as a component of the Bennett (1931) Site 53 burial ground. Pietrusewsky did the skeletal analysis report for the inadvertent burial discovery (Pietrusewsky 1996). Winieski et al. (1996) also conducted a survey near the project area but no historic properties were found.

3.2.12 Hawai'i Inter-Island DOE Cesspool Project (Hammatt and Shideler 2006)

In 2006, CSH conducted an archaeological literature review and field check study of eight DOE Schools on the island of Kaua'i for the Hawai'i Inter-Island DOE Cesspool project (Hammatt and Shideler 2006). In Hanapēpē, the study area included the 'Ele'ele Elementary School. Background research, along with a field check, gave no indications of archaeological concerns at 'Ele'ele Elementary School. No further work was recommended.

3.3 Background Summary and Predictive Model

Hawaiians had an extensive agricultural system developed by the time of contact with westerners, and westerners commented on the well-planted coastal lands and expressed amazement at the ingenuity and engineering skill exhibited in the irrigation ditches and horticultural plantations. The many early commentaries on the valley note that taro was the prevalent crop along all the many waterways.

At the time of the 1824 Kaua'i Rebellion, Hanapēpē was the scene of a battle that was devastating for the inhabitants. Some Big Island and O'ahu people were given land when it was "colonized" as a result of the Kaua'i Rebellion (LCA 9790). Measles, smallpox, and leprosy also laid their claims on Hanapēpē's residents (Gay 1873). Tidal waves (1837) and hurricanes (Dot 1959, 'Iwa 1982, and 'Iniki 1992) were also destructive. The large area *makai* of the highway and east of Hanapēpē River was inundated by the 30-ft waves of 'Iniki (Ida and Hammatt 1993).

Although the *kuleana* awards provide us information concerning 274 *lo 'i*, following Handy and the caution of Pearson, we may surmise that many more existed in pre-Contact times. These *lo 'i* were along the rivers and the many *'auwai* or ditches for almost 6 miles into the valley. The salt flats along the shore at the time of Cook's and other explorers' visits to Kaua'i provided a very high-quality salt to the early trading ships, and are still in use today. Along the shoreline were house sites, fishing shrines, a fishing light beacon, and canoe landings such as "Kuahanui," a place

name that indicates a Great Council was held at this canoe landing. One LCA mentions a canoe shed. Kikuchi mentions that the off-shore fishing was considered rich in this area (Kikuchi 1982:2).

Various trails crossed and accessed the valley. A major trail went along the shoreline and others went along all the major streams; early maps also show trails going to Mt. Wai'ale'ale and beyond. The trail to Hanapēpē Falls was evidently enlarged to a horse trail by the early 1800s as visitors rode there on horseback. The seven (or more) *heiau* throughout this valley indicate an active community throughout the *ahupua'a*, calling upon their gods for normal everyday activities like farming, fishing, and bird catching, as well for special worship and celebrations.

Prehistoric burials have been located in sandy areas and in caves. Most of the caves explored in modern times are noted to have been previously vandalized.

The feathers used in the garments of the Kaua'i *ali'i* were certainly in part obtained from the upper reaches of this valley as well as Waimea Valley. The bird catchers would have had shelters as well as the lookouts mentioned in Francis Gay's manuscript. The upper forest areas were also excellent sources for wood and vines used in the netting bases of feather work, such as *olonā*. Handy mentions that sheds were often built near streams for the preliminary processing of *olonā* (1940:200). Tools for scraping and beating might be found in such places.

From the first contacts with the western world, it appears the people of Hanapēpē were strongly impacted. Hanapēpē is the site of introductions of new plants and animals at the time of Cook; the Russians brought maize, cotton, tobacco, and sheep. Rice and sugar are both part of the Hanapēpē Valley history of agricultural crops and techniques. Here also the new industrial developments such as railroading and shipping, and more recently air transportation, have dynamically affected the land and people of Hanapēpē. The general trends of Hawaiian history seem apparent here, even though Hanapēpē has never been the actual center of such development.

While the earliest settlement was undoubtedly along the coast since it provided fishing resources and sufficient taro land, during the Expansion Period (eleventh through thirteenth centuries) the coastal populations moved inland to create more taro land, sweet potato land, to seek feathers and *'ie'ie* vines for making capes and helmets, and other goods needed to support the development of the *ali'i* class. While it appears to have been at a slight remove from the centers of power, Hanapēpē was close enough to participate in all the changes affecting the island. Most of the valley today remains part of the Robinson family trust.

Based on the background information for the current study area and the surrounding areas, it is anticipated that pre-Contact cultural layers associated with agriculture and historic cultural layers associated with occupation, habitation, and agriculture will most likely be encountered during any subsurface activities in the study area

Section 4 Results of Fieldwork

Fieldwork conducted for the AIS includes a 100% pedestrian inspection and subsurface testing. The pedestrian inspection included the identification and documentation of historic properties within the project area and a description of the overall project area including ground visibility, modern use or disturbance, and vegetation. Subsurface testing consisted of two backhoe-assisted test trenches (T-1 and T-2). Fieldwork was conducted on 13 and 14 June 2015 by CSH archaeologists Missy Kamai, B.A., Tom Martel, B.A., and Richard Stark, Ph.D. under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. This work required approximately 4 person-days to complete.

4.1 Pedestrian Inspection Results

The historic properties identified within the project area include the Hanapēpē River Bridge (SIHP # -2280), a floodwall constructed of mortar-capped basalt and mortar (SIHP # -2281), a floodwall constructed of dry stacked basalt boulders with a cap of concrete (SIHP # -2282), a large earthen and basalt berm/levee (SIHP # -2283). Complete descriptions of these historic properties are provided in Section 6. Just outside the APE to the southeast of the project area along Iona Road, a retaining wall of dry stacked basalt (SIHP # -2284) was observed and documented. This historic property is not within the APE, and therefore not within the scope of this AISR; however, a complete description of the historic property is located in Appendix A.

Ground visibility during this pedestrian inspection was exceptional. Vegetation west of the river between the two bridges and on the southeast side of the river includes *hau* (*Hibiscadelphus*) and *hala* (*Pandanus*). Other vegetation includes low lying exotic grasses and landscaping plants, *bougainvillea* (*Nyctinaginacea*), *hibiscus* (*Malvaceae*), and shower trees (*Cassia*).

4.2 Subsurface Testing Results

Two backhoe assisted test trenches (T-1 and T-2) were excavated along the shoulder of Kaumuali'i Highway (Figure 23). T-1 measured 6.5 m in length, 0.6 m in width, and extended 1.9 m below surface. T-2 measured 5.7 m in length, 0.6 m in width, and extended 1.41 m below surface. The observed stratigraphy east of the bridge consists of various layers of fill designated Stratum I (sub-designated alphabetically). West of the bridge the observed stratigraphy consists of fill (Stratum I), overlying a buried A horizon (Stratum II) and a deposit associated with the Hanapēpē floodplain (Stratum III). No traditional Hawaiian cultural material was observed. Historic artifacts were observed in the fill and designated Accession (Acc.) #s 1 and 2. No cultural material was observed in the natural deposits.

4.2.1 Test Excavation 1 (T-1)

T-1 is located east of the bridge and on the north side of the highway in the eastern portion of the project area (see Figure 23). T-1 measured 6.5 m long by 0.6 m wide. The base of excavation was determined to be approximately 1.9 m below surface. The water table was not observed. The stratigraphy of T-1 consisted of a sandy loam fill (Stratum Ia), overlying sandy clay loam fill (Stratum Ib), clay loam fill (Stratum Ic), and sandy clay loam fill (Stratum Id) (Figure 24, Figure 25, and Table 4).

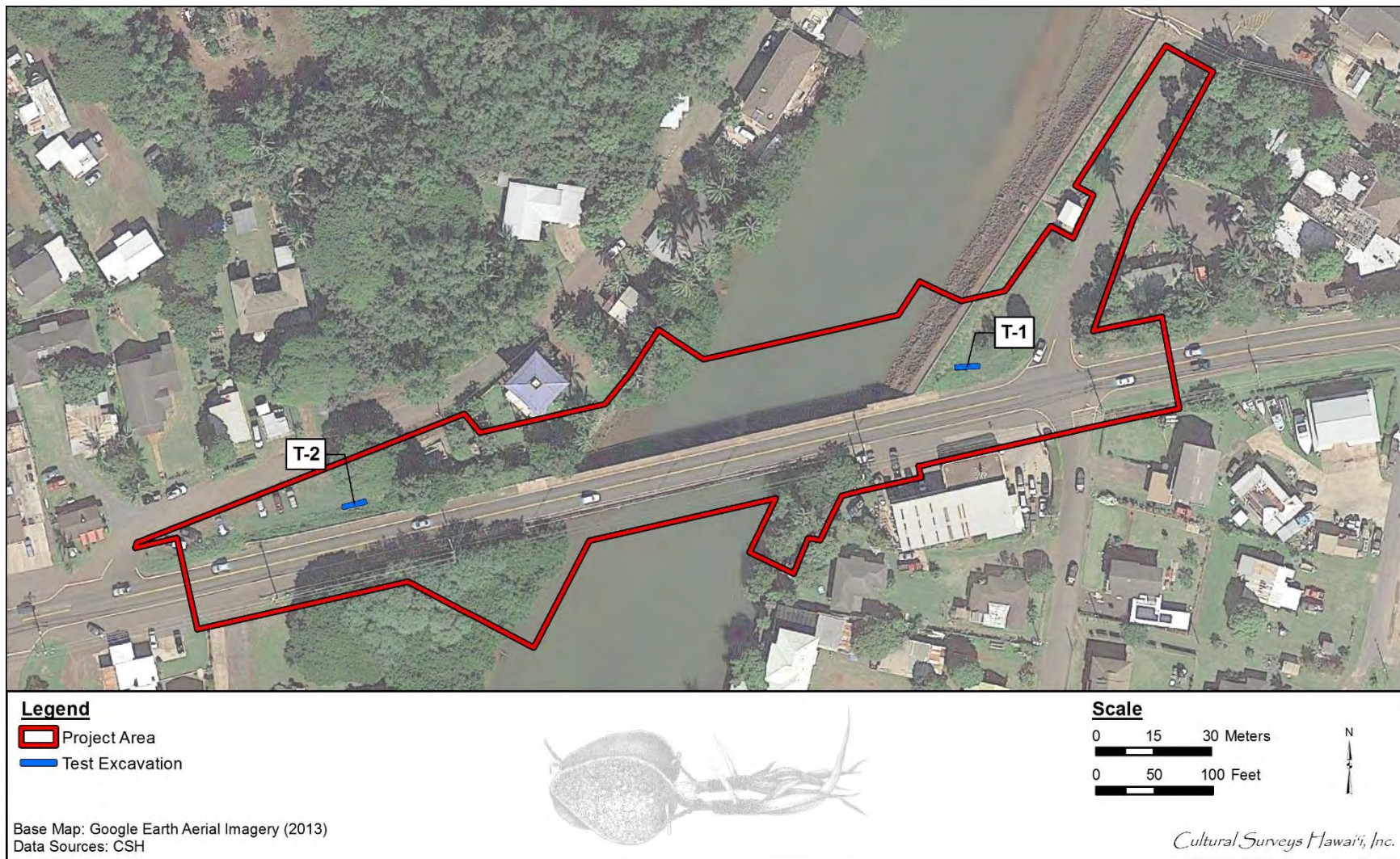


Figure 23. Aerial photograph showing the locations of T-1 and T-2 within the project area (Google Earth 2013)



Figure 24. T-1, south wall, view to southwest

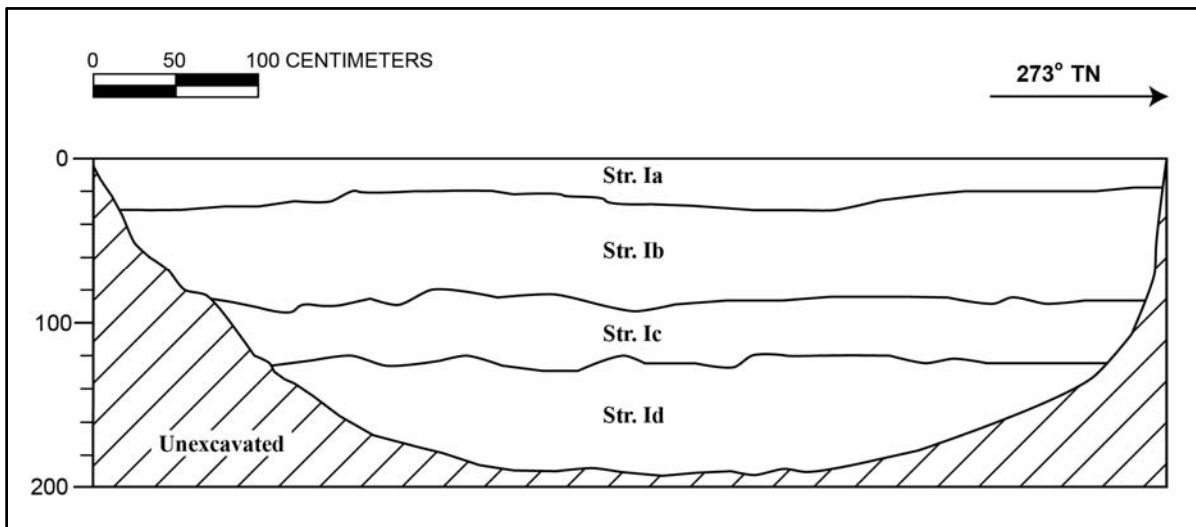


Figure 25. T-1, stratigraphic profile of south wall, view to south

Table 4. Stratigraphic Description of T-1 South Wall

Stratum	Depth (cmts)	Description of Sediment
Ia	0–30	Fill; 10YR 4/4, dark yellowish brown; sandy loam; moderate, medium, platy structure; dry, weakly coherent consistence; no cementation; non-plastic; terrigenous; very abrupt, smooth lower boundary; few, fine to medium roots observed; presence of small pieces of coral and asphalt chunks observed
Ib	30–90	Fill; 5YR 4/6, yellowish red; sandy clay loam; moderate, medium, blocky structure; dry, weakly coherent consistence; weak cementation; plastic; terrigenous; abrupt, wavy lower boundary; few, fine roots observed; 10% angular basalt pebble, plastic fragments, 5% very fine coral gravel, concrete, glass fragment observed and collected (Acc. # 1)
Ic	80–130	Fill; 10R 4/4, weak red; clay loam; weak, fine, crumb structure; dry, weakly coherent consistence; no cementation; slightly plastic; terrigenous; abrupt, wavy lower boundary; few, medium to coarse roots observed; 5% coral pebbles, compact fill, soda tab observed and collected (Acc. # 2)
Id	120–190 (BOE)	Fill; 10R 3/3, dusky red; sandy clay loam; moderate, medium, crumb structure; dry, slightly hard consistence; no cementation; plastic; terrigenous; lower boundary not visible; no roots observed; 10% angular basalt cobbles and pebbles

Historic cultural material was observed and collected from various fill layers during the course of excavation. These historic artifacts consist of a glass fragment (Acc. # 1) collected from Stratum Ib, and a soda tab (Acc. # 2) collected from Stratum Ic. A complete description and analysis of these artifacts is provided in Section 5.

4.2.2 Test Excavation 2 (T-2)

T-2 is located west of the bridge on the north side of the highway in the western portion of the project area. T-2 measured 5.7 m long by 0.60 m wide. The base of excavation was determined to be approximately 1.41 m below surface. The water table was observed at 1.25 m below surface. The stratigraphy of T-2 consists of a clay loam fill (Stratum I) overlying a disturbed sandy loam (Stratum II) and a sand C horizon (Stratum III) (Figure 26, Figure 27, and Table 5).

Stratum III is a deposit likely associated with the floodplain of the Hanapēpē River. The deposit contains a mix of marine sand and alluvial sand with color banding and olivine minerals. The deposit appears to be naturally deposited and not the result of human activities. The upper boundary represents exhibits disturbance associated with the deposition of Stratum II. No traditional Hawaiian or historic cultural material was observed.



Figure 26. T-2, north wall, view to northwest

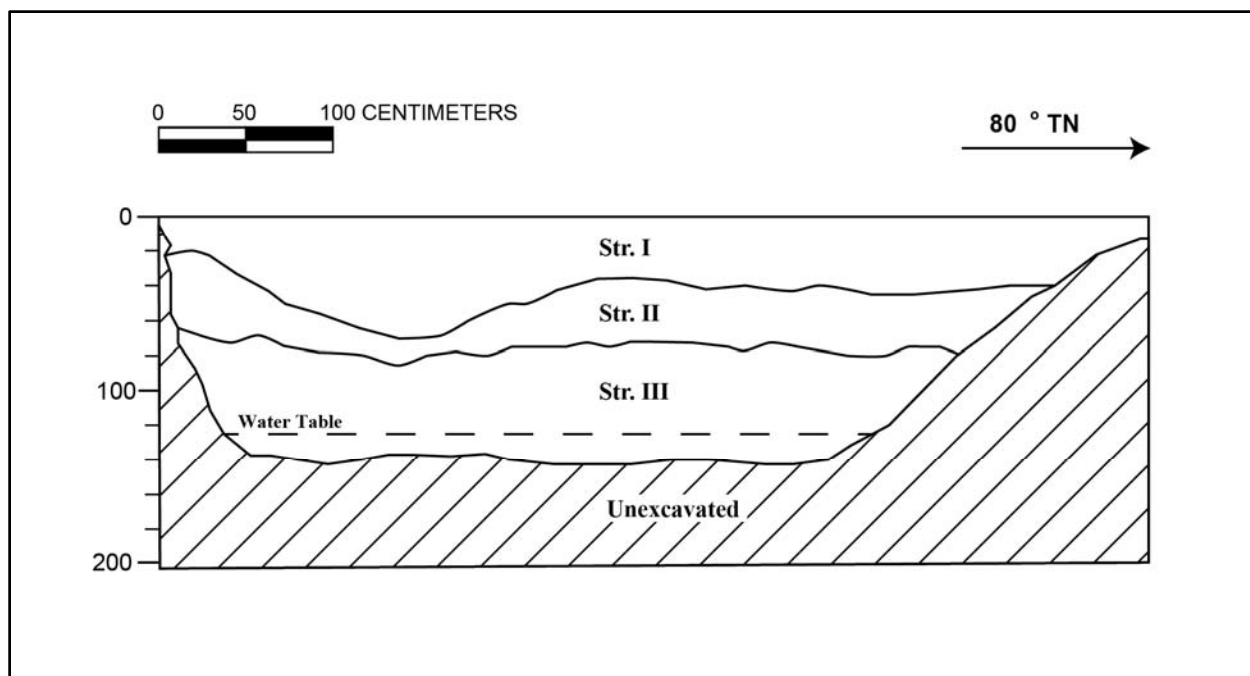


Figure 27. T-2, stratigraphic profile of north wall, view to north

Table 5. Stratigraphic Description of T-2 North Wall

Stratum	Depth (cmbs)	Description of Sediment
I	0–70	Fill; 2.5YR 3/3, dark reddish brown; clay loam; moderate, medium, blocky to crumb structure; moist, friable consistence; no cementation; plastic; terrigenous; clear, wavy lower boundary; common, fine to medium roots observed
II	35–84	Disturbed; 7.25YR 3/2, dark brown; sandy loam; weak, fine, crumb structure; moist, very friable consistence; non-plastic; no cementation; mixed origin; diffuse, wavy boundary; few medium to coarse roots observed; coral observed; intermixed deposit of Str. I and III
III	70–141	C horizon; 2.5Y 4/3, olive brown; fine to medium sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; mixed origin; lower boundary not visible; few, fine roots observed; has a lot of olivine, color banding, mix of marine sand and alluvial sand, floodplain of Hanapēpē River, upper portion of Str. III has potential for cultural materials as a living surface, water table at 125 cmbs

Section 5 Results of Laboratory Analysis

Two historic artifacts were collected during the survey (Table 6). One pressed glass base fragment (Figure 28) and one metal pull tab (Figure 29) were collected from T-1. Pressed glass is commonly used for serving dishes, lamps, candle stick holders, and other household items. Pressed glass is distinguished from blown glass by being pressed into a mold, and often has contours on the interior and exterior surfaces. In the early 1800s, British glass makers made pressed glass items and affixed them to blown glass objects. By the 1820s, pressed glass was made in the United States and became common for numerous household goods. Throughout the nineteenth century, various patents were awarded as pressed glass items became more popular (Welker and Welker 1985). The metal pull tab is likely from a beer or beverage can. Pull tab cans were invented in 1962 by Alcoa Aluminum Company (Martels 1976). Both artifacts recovered are likely household trash or litter.

Table 6. Artifact Collected during Subsurface Testing

Acc. Number	Test Ex.	Stratum	Depth	Material	Type	Description	Count	Age
0001	1	Ib	20-80	Glass	Household	Pressed glass base fragment	1	Post-1825
0002	1	Ic	80-130	Metal	Pull tab	Metal pull tab from a can or food container	1	Post-1962



Figure 28. Acc. # 1, pressed glass base



Figure 29. Acc. # 2, metal pull tab

Section 6 Historic Property Descriptions

Four historic properties were identified within the current project area and APE during this AIS. They are summarized in Table 7 and depicted in Figure 30 and Figure 31.

Table 7. Sites Identified within the Current Project Area and APE

SIHP #	Formal Type	Function
50-30-09-2280	Bridge	Transportation
50-30-09-2281	Wall	Erosion Control
50-30-09-2282	Wall	Erosion Control
50-30-09-2283	Levee/Berm	Water Control

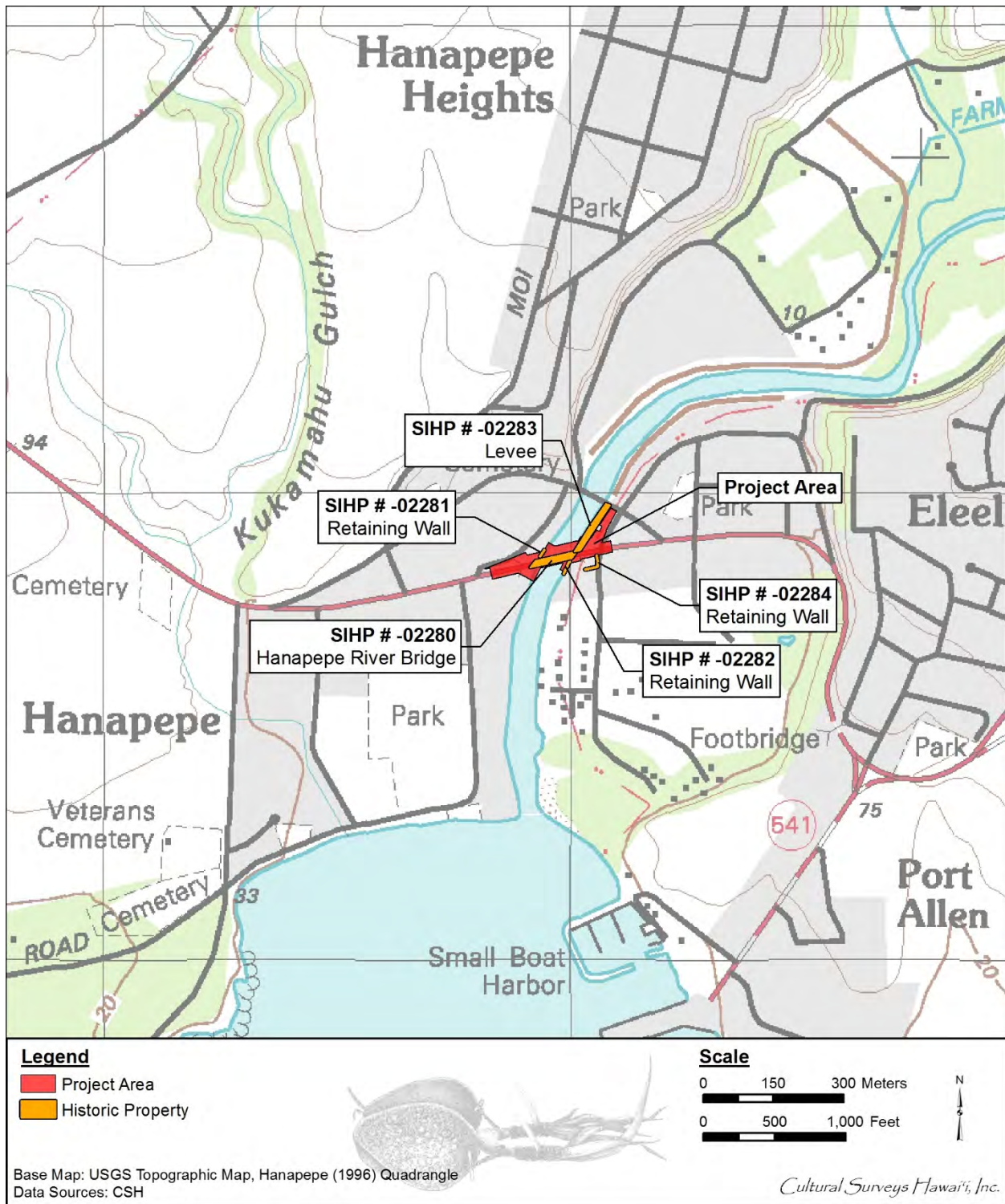


Figure 30. Portion of the 1996 Hanapepe USGS Topographic Quadrangle showing the locations of historic properties identified within the APE (SIHP #s -2280 through -2283) and one historic property identified just outside the APE (SIHP # -2284) during the AIS

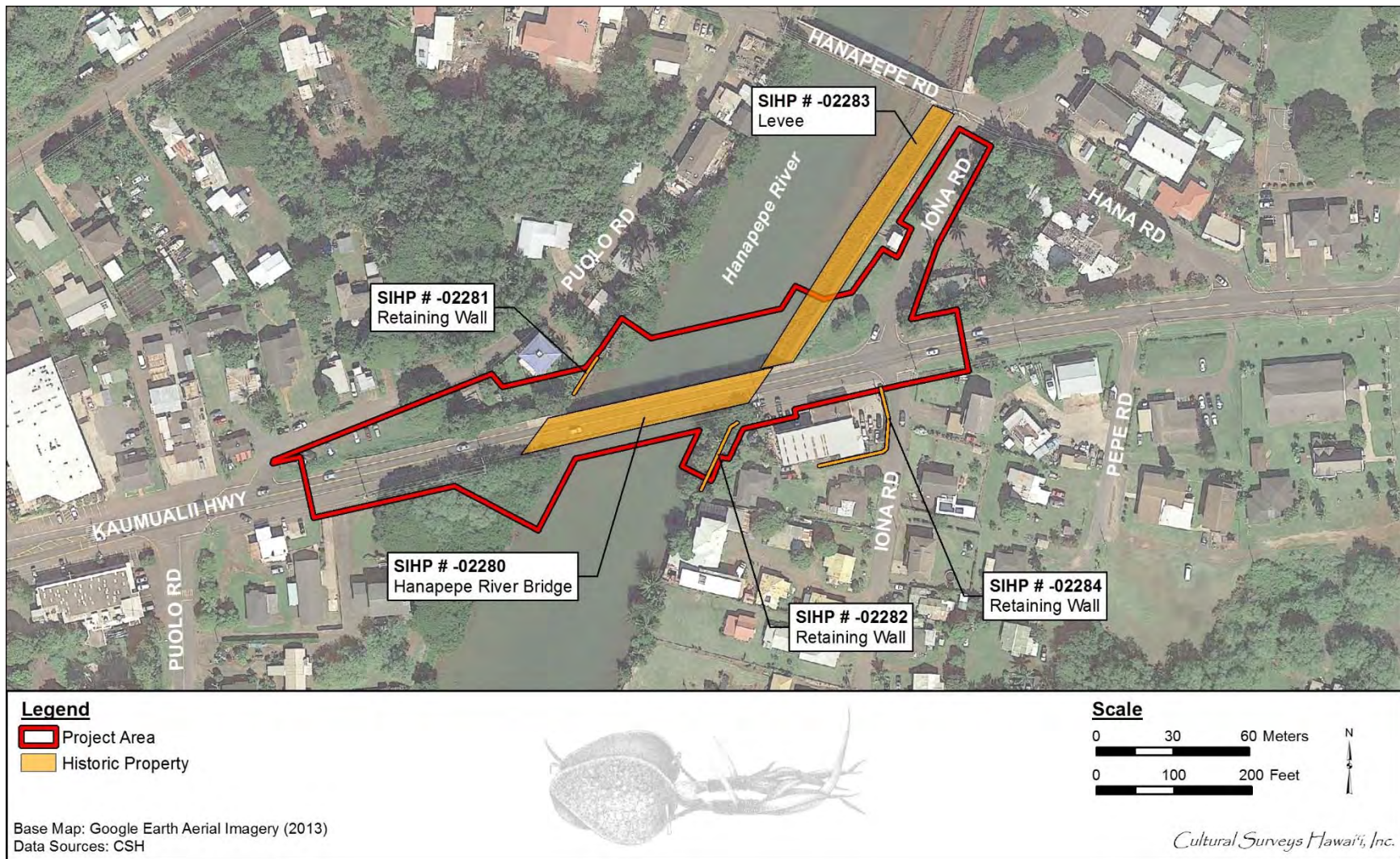


Figure 31. Aerial photograph showing the locations of historic properties identified within the APE (SIHP #s -2280 through -2283) and one historic property identified just outside the APE (SIHP # -2284) during the AIS (Google Earth 2013)

1.1 SIHP # 50-30-09-2280

FORMAL TYPE:	Bridge
FUNCTION:	Transportation
NUMBER OF FEATURES:	1
AGE:	Historic (1938)
TAX MAP KEY:	[4] 1-8-008, 1-9-007 and 010 Kaumuali'i Highway Right-of-Way
LAND JURISDICTION:	HDOT
PREVIOUS DOCUMENTATION:	Spencer Mason Architects 1989; MKE Associates LLC and Fung Associates, Inc. 2013

SIHP # -2280 is the Hanapēpē River Bridge (#007000500301631) also described as the Hanapēpē Highway Bridge (Figure 32 and Figure 33). The existing 275-ft long bridge was built in 1938 at milepost (MP) 16.57. SIHP # -2280 is described as the Hanapēpē Highway Bridge in the State Historic Bridge Inventory Evaluation as follows:

The Hanapepe Highway Bridge, a reinforced concrete tee-beam structure, was constructed in 1938 to carry Kaumualii highway over the Hanapepe River downstream from the original 1911 Hanapepe Bridge. Hanapepe is a small rural community located on the southwest shore of the island of Kauai which flourished until the Kauai Belt Road (Kaumualii Highway) and the Hanapepe Highway Bridge were constructed in the 1930s bypassing downtown Hanapepe.

The Hanapepe Highway Bridge has retained its historic location and setting. The original concrete tee beam design of the bridge remains intact. The original reinforced concrete material of the bridge is generally in good condition, although there are small areas of spalling and approximately one-third of the roadway lights imbedded in the rail are missing or damaged. The workmanship has not been obscured by additions or repairs and is particularly evident in the decorative concrete end piers. The historic associations of the bridge include the recurring theme of belt road realignment and the shift of traffic away from the old center of town. These may be inferred by travelers from the relationship between the 1938 highway bridge and the original 1911 Hanapepe Bridge which is visible upstream. The Hanapepe Highway Bridge retains its historic feeling primarily due to its relatively narrow width for a highway bridge and the decorative concrete rail design typical of 1930s Federal Aid bridges. [MKE Associates LLC and Fung Associates, Inc 2013:3-30]

The State Historic Bridge Inventory Evaluation (MKE Associates LLC/Fung Associates, Inc. 2013) provides the following significance statement for the Hanapēpē River Bridge (Hanapēpē Highway Bridge):

The Hanapepe Highway Bridge, a reinforced concrete tee beam structure, is significant for its contributions to the areas of engineering and transportation in



Figure 32. SIHP # -2280, Hanapēpē River Bridge, view to southeast



Figure 33. Kaumuali'i Highway extending over Hanapēpē River Bridge, view to west

AISR for the Hanapēpē River Bridge Project, Hanapēpē, Waimea, Kaua'i

TMKs: [4] 1-9-007 (various parcels), Hanapēpē River and 1-9-010 (various parcels), Kaumuali'i Hwy and Iona Rd ROWs

Hawaii. The bridge is eligible under Criterion A for its associations with the development of Kauai's Belt Road system. The bridge has also played a significant role in the history of Hanapepe town. The new alignment of the Belt Road and this new bridge had an adverse effect on Hanapepe town, as it drew traffic away from its existing commercial core. It is eligible under Criterion C as an excellent example of later developments in concrete bridge construction on Kauai and represents the 'work of a master': William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department (THD). [MKE Associates LLC and Fung Associates, Inc. 2013:3-31]

SIHP # 50-30-09-2280 is the Hanapēpē River Bridge. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). SIHP # -2280 is evaluated as significant pursuant to HAR §13-275-6 under Criterion "a" (be associated with events that have made an important contribution to the broad patterns of our history) for its associations with the development of Kaua'i's Belt Road system and the significant role the bridge played in the history of Hanapēpē town, and 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) as an excellent example of later developments in concrete bridge construction on Kauai and represents the "work of a master". Ruzicka (2015) evaluated SIHP # -2280 as eligible to the National and Hawai'i Register under Criterion "A" (associated with events that have made a significant contribution to the broad patterns of our history), for its associations with the development of Kaua'i's Belt Road system and the significant role the bridge played in the history of Hanapēpē town, and Criterion "C" (embodies the distinctive characteristics of a type, period, or method of construction, or that represent that work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction) as an excellent example of later developments in concrete bridge construction on Kauai and represents the "work of a master", William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department (Ruzicka 2015).

6.1 SIHP # 50-30-09-2281

FORMAL TYPE:	Wall
FUNCTION:	Erosion control
NUMBER OF FEATURES:	1
AGE:	Historic
TAX MAP KEY:	[4] 1-8-008, 1-9-007 and 010
LAND JURISDICTION:	Private
PREVIOUS DOCUMENTATION:	None

SIHP # -2281 is a retaining wall constructed on the western bank of Hanapēpē River immediately north of the Hanapēpē River Bridge. The wall is a concrete-capped basalt and mortar retaining wall constructed to prevent further erosion of the river bank and stabilize the backyard of a private residence (Figure 34 through Figure 37). The wall is considered to be older than 50 years. The wall is 21.0 m (6.6 ft) long by approximately 0.45 m (1.3 ft) wide, with a height of approximately 1.0 m (3.3 ft). There were no inscriptions or identifying marks observed on the surface of the wall. A small, five-step staircase of similar design and material is constructed near the south end of the wall (Figure 38 through Figure 40). The stairs extend from the edge of the bordering residential property into the Hanapēpē River.

SIHP # 50-30-09-2281 is a concrete-capped basalt and mortar retaining wall. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai‘i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). This report assesses SIHP # -2281 as not significant pursuant to HAR §13-13-275-6 based on the evaluation of eligibility by Ruzicka (2015). Ruzicka (2015) evaluated SIHP # -2281 as not eligible to National and Hawai‘i Register pursuant to 36 CFR 60.4 and HAR §13-198-8, as this historic property “lacks significance associated with engineering distinction and has no known association with an important historic person or event” (Ruzicka 2015:7-4).



Figure 34. SIHP # -2281, retaining wall lining Hanapēpē River, view to northwest



Figure 35. South end of SIHP # -2281, retaining wall, view to west



Figure 36. SIHP # -2281, retaining wall, view to north

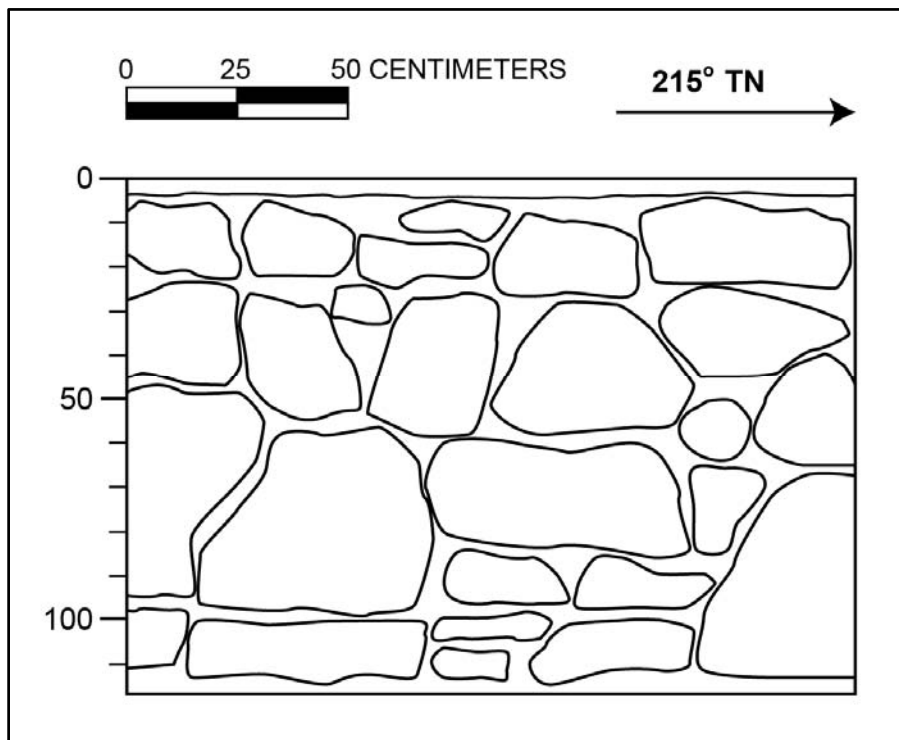


Figure 37. Profile of a portion of the retaining wall, SIHP # -2281



Figure 38. SIHP # -2281, stairs extending from residential property to Hanapēpē River, view to southwest



Figure 39. SIHP # -2281, stairs leading from the residential property into Hanapēpē River, view to east

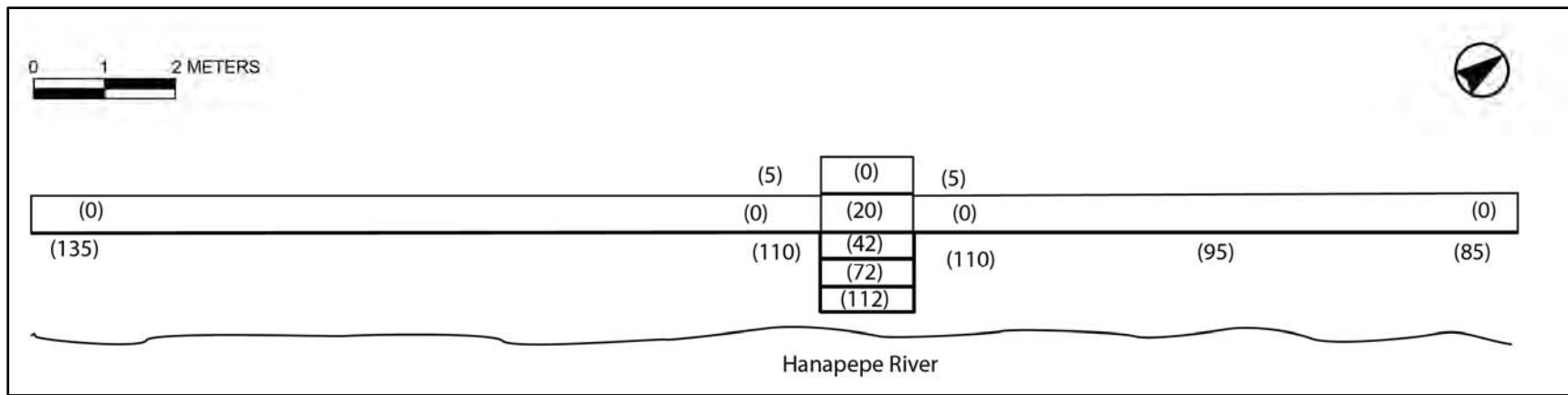


Figure 40. Plan map of SIHP # -2281, retaining wall

6.2 SIHP # 50-30-09-2282

FORMAL TYPE:	Wall
FUNCTION:	Erosion control
NUMBER OF FEATURES:	1
AGE:	Historic
TAX MAP KEY:	[4] 1-9-007:001, 020, 034
LAND JURISDICTION:	Private
PREVIOUS DOCUMENTATION:	None

SIHP # -2282 is a wall constructed on the eastern bank of the Hanapēpē River approximately 7.5 m (24.6 ft) south of the Hanapēpē River Bridge. The wall is constructed of dry-stacked basalt boulders (Figure 41 and Figure 42). Portions of the wall have been capped with deteriorating concrete (Figure 43). Portions of the wall have inclusions of cement slabs and automotive debris. These inclusions may indicate subsequent phases of renovation. The wall was constructed to prevent further erosion of the river bank and retain the backyard of a private residence. The wall is 21.0 m (68.9 ft) long by approximately 0.5 m (1.6 ft) wide, with a height of about 1.5 m (4.9 ft) or seven courses (Figure 44 and Figure 45). There were no inscriptions or identifying marks observed on the surface of the wall. The wall has been impacted by the growth of tree roots from trees growing along the river bank. At the bottom of the northern end of the wall there is a concrete culvert facing the river (Figure 46 and Figure 47).

SIHP # 50-30-09-2282 is a concrete-capped, dry-stacked basalt stone retaining wall. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). This report assesses SIHP # -2282 as not significant pursuant to HAR §13-13-275-6 based on the evaluation of eligibility by Ruzicka (2015). Ruzicka (2015) evaluated SIHP # -2282 as not eligible to National and Hawai'i Register pursuant to 36 CFR 60.4 and HAR §13-198-8, as this historic property “lacks significance associated with engineering distinction and has no known association with an important historic person or event” (Ruzicka 2015:7-4).



Figure 41. SIHP # -2282, retaining wall, view to south



Figure 42. SIHP # -2282, retaining wall, view to north

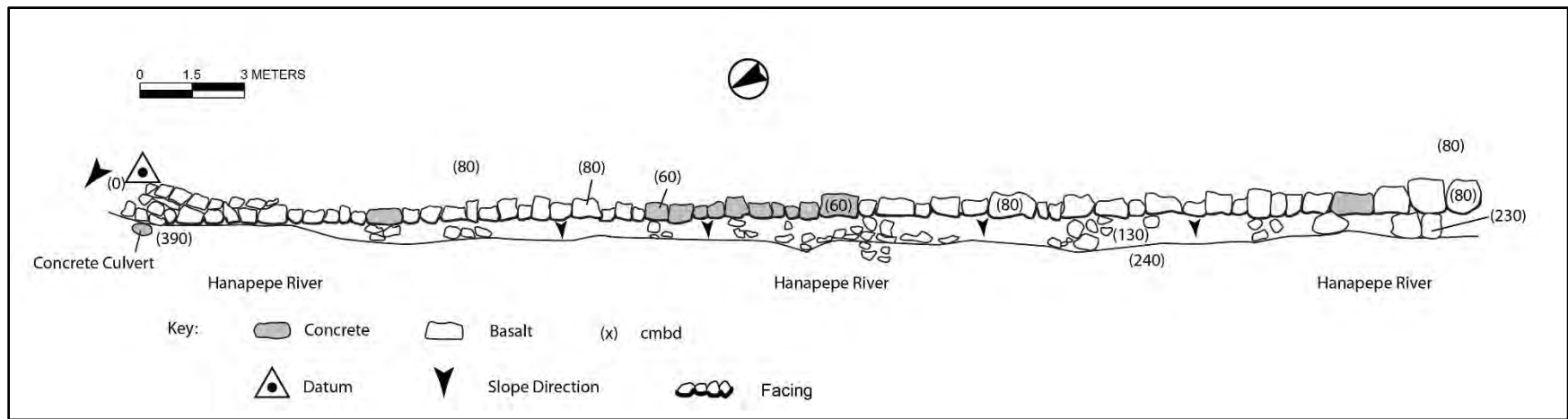


Figure 43. Plan map of SIHP # -2282, retaining wall



Figure 44. South end of SIHP # -2282, retaining wall, view to south



Figure 45. Central portion of SIHP # -2282, retaining wall, view to north



Figure 46. North end of SIHP # -2282, retaining wall, view to northeast

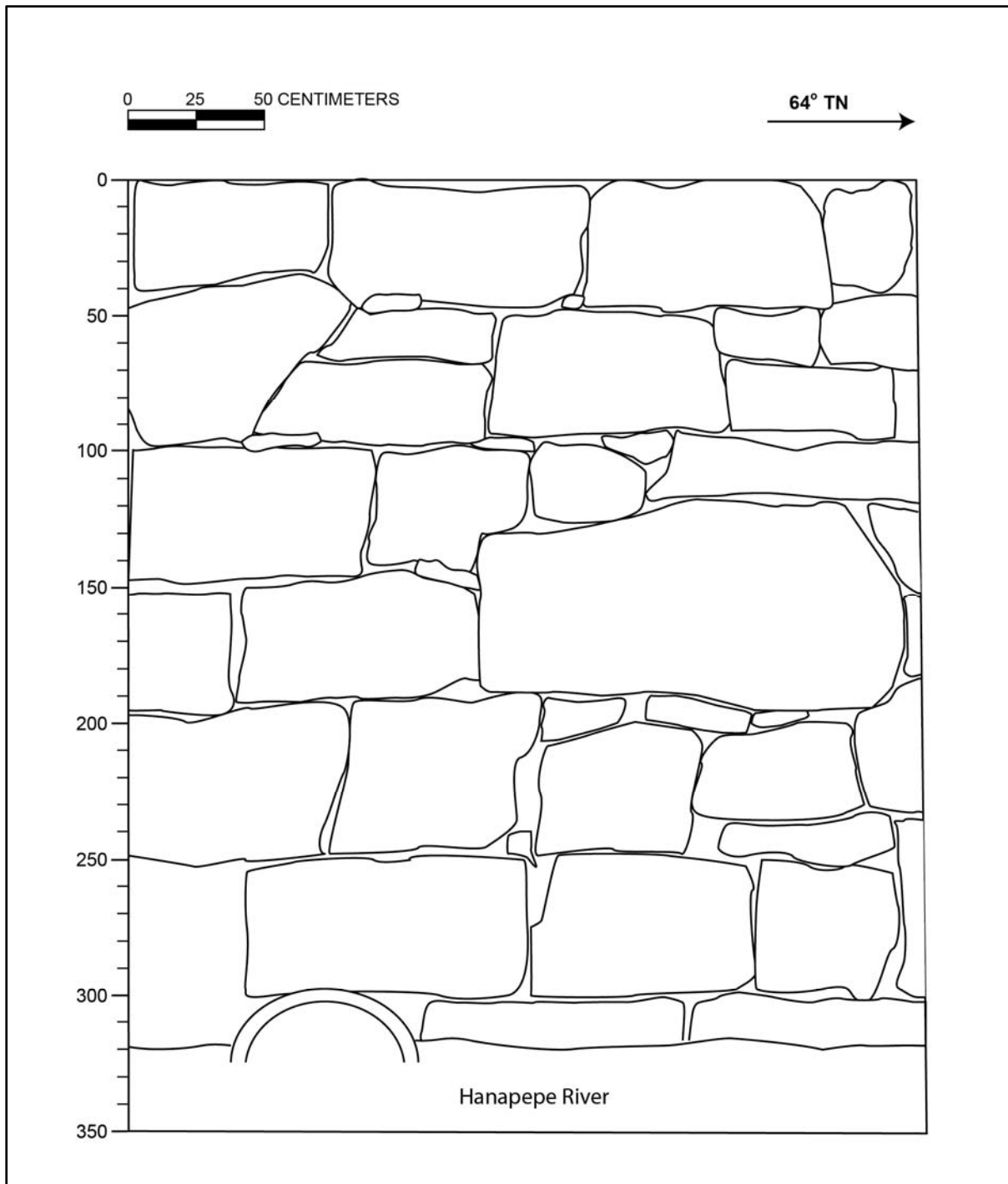


Figure 47. Profile map of the north portion of SIHP # -2282, retaining wall

6.3 SIHP # 50-30-09-2283

FORMAL TYPE:	Berm
FUNCTION:	Water control
NUMBER OF FEATURES:	1
AGE:	Historic (1959-1966)
TAX MAP KEY:	[4] 1-9-004:021; 1-9-007:013; 1-9-007 Kaumuali'i Highway Right-of-Way
LAND JURISDICTION:	HDOT
PREVIOUS DOCUMENTATION:	None

SIHP # -2283 is an earthen and piled basalt stone berm located along the eastern bank of the Hanapēpē River. The berm extends northeast to Hanapēpē Bridge and further north through the meander in Hanapēpē River (see Figure 30, Figure 31, and Figure 48). The portion of SIHP # -2283 within the project area is 33.5 m (110 ft) long with an average width of approximately 10.0 m (32.8 ft) and a maximum height of 2.85 m (9.4 ft) above the Hanapēpē River shoreline (Figure 49). A concrete wall is constructed along the top of the berm (Figure 50 through Figure 53). The wall measures 0.3 m (1 ft) wide with an added height of about 0.65 m (2.1 ft) from the top of the berm.

The berm is described in a 1975 report titled *Information on Water Resources Development Projects* by the U.S. Army Corps of Engineers in Hawai'i as follows:

The Hanapepe River begins in Alakai Swamp near the summit of Mt. Waialeale and flows into the sea at Hanapepe Bay. The river flows through well-defined canyons and gulches until the coastal plain where it used to seek to establish new courses. The town of Hanapepe occupies the coastal plain, including the flood plain of the Hanapepe River. Floods were a constant threat to the community and caused severe damages to residences and businesses as well as to adjacent agricultural lands.

In response to local interests' request for flood protection, the Corps of Engineers built a flood control project on the lower Hanapepe River under the authority of the Flood Control Act of 1944. The first phase of the project consisting of a levee and floodwall 2,200 feet long on the left bank of the river was completed in December 1959. The second phase consisting of a 4,465-foot-long levee on the right bank was completed in August 1963 . . . In 1966, the levees on both banks were raised to provide greater flood protection to the town. [U.S. Army Corps of Engineers Pacific Ocean Division 1975:24]

The U.S. Army Corps of Engineers report indicates the Hanapēpē River berm system was constructed between 1959 and 1966 as a flood protection measure for nearby residential and commercial properties.

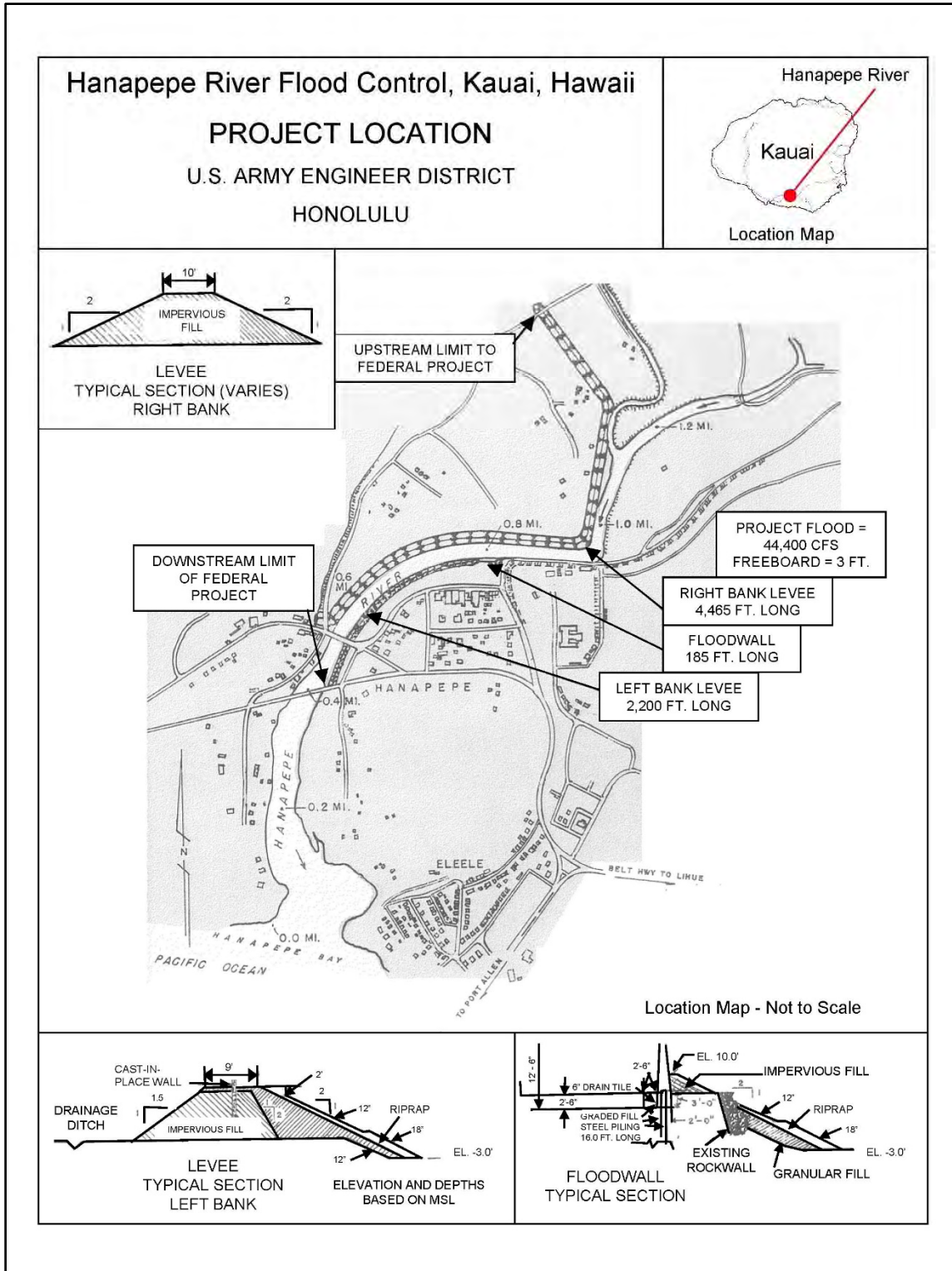


Figure 48. U.S. Army Corps of Engineers project location drawing for the Hanapēpē River Flood Control project (U.S. Army Corps of Engineers n.d.)

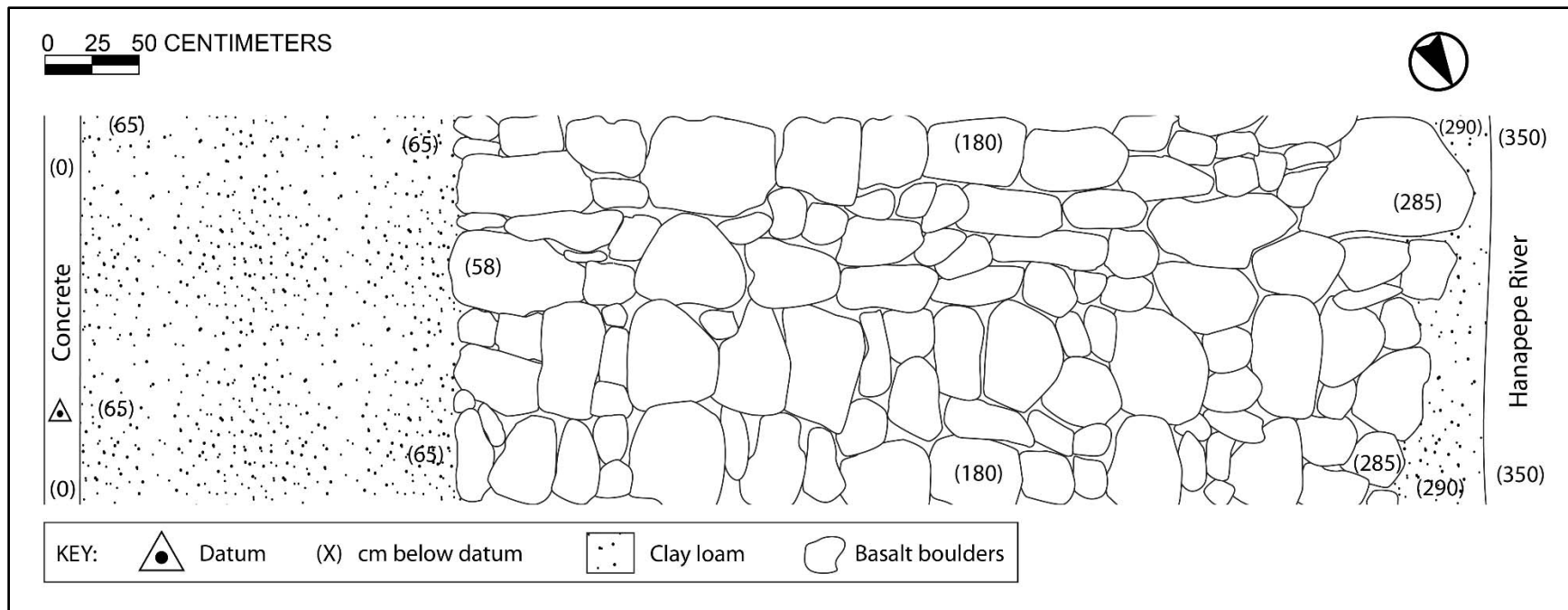


Figure 49. Plan map of a cross-section of SIHP # -2283, floodwall, between Kaumuali'i Highway and Hana Road



Figure 50. SIHP # -2283, floodwall, view to south



Figure 51. SIHP # -2283, floodwall, view to north



Figure 52. SIHP # -2283, floodwall, view to north



Figure 53. SIHP # -2283, floodwall, view to south

SIHP # 50-30-09-2283 is a large earthen and piled basalt stone berm. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). SIHP # -2283 is evaluated as significant pursuant to HAR §13-275-6 under Criterion "a" (be associated with events that have made an important contribution to the broad patterns of our history) "for its association with community planning and the development of Hanapepe as well as with federal flood control projects" (Ruzicka 2015). Ruzicka (2015) evaluated SIHP # -2283 as eligible to the National and Hawai'i Register under Criterion "A" (associated with events that have made a significant contribution to the broad patterns of our history) "for its association with community planning and the development of Hanapepe as well as with federal flood control projects" (Ruzicka 2015).

Section 7 Summary and Interpretation

At the request of CH2M HILL and on behalf of the FHWA CFLHD, CSH has prepared this AIS report for the Hanapēpē River Bridge Replacement project, Hanapēpē Ahupua'a, Waimea District, Kaua'i, FHWA/CFLHD contract DTFH68-13-R-00027, TMKS: [4] 1-9-007:001 por. Hanapēpē River, 013 por., 020 por., and 034 por., and 1-9-010:014 por., 015 por., 046 por. and 050 por., Kaumuali'i Highway and Iona Road Rights-of-Way.

Background research included various mythological and traditional accounts as well as early historic information on Hanapēpē Ahupua'a. Accounts of the early history of Hanapēpē describe the area as bordered by the ocean with a large coastline inhibiting an approach from the sea (Handy and Handy 1972:268). Also mentioned in the early history of Hanapēpē were the *kua āina*, an inland population that utilized canyon freshwater resources to build numerous *lo 'i* terraces. Coastal resources were also utilized; the *'ili* of Ukula, which is southwest of Hanapēpē Bay, was notable for salt production.

From the early to mid-1900s, sugar cane cultivation dominated land use in the Hanapēpē and 'Ele'ele region. During the later historic period cane lands were converted for residential and commercial use.

The first systematic archaeological reconnaissance of Hanapēpē was conducted by Bennett (1931). There have been 12 systematic archaeological studies conducted within a 0.8-km (0.5-mile) radius of the project area since the 1931 Bennett survey. Seventeen historic properties have been identified within these studies. The majority of these historic properties are cemeteries, traditional Hawaiian and historic burials. A pre-Contact subsurface cultural deposit was observed northwest of the current project area; however, it does not extend into the project area.

A companion architectural study (Ruzicka 2015) is being conducted by Mason Architects, Inc. in conjunction with this AISR. When applicable, the information from the architectural study has been incorporated into the present AIS document.

During the current AIS, five historic properties (SIHP #s -2280 through -2284) were identified; however, one of the historic properties (SIHP # -2284) was determined to be outside the project's APE and therefore not within the scope of this AIS. The historic properties identified within the project's APE consist of the Hanapēpē River Bridge (SIHP # -2280), which spans the Hanapēpē River and supports Kaumuali'i Highway, two walls (SIHP #s -2281 and -2282) utilized to prevent flooding and erosion along Hanapēpē River, and a large berm with floodwall (SIHP # -2283) that extends between Kaumuali'i Highway and Hana Road.

Section 8 Significance Assessments

As discussed in Section 1.2, historic properties are generally at least 50 years old (although there are exceptions) and include buildings and structures; groupings of buildings or structures (historic districts); certain objects; archaeological artifacts, features, sites, and/or deposits; groupings of archaeological sites (archaeological districts); and, in some instances, natural landscape features and/or geographic locations of cultural significance. The current investigation was tasked with the identification of archaeological historic properties, however, this report also includes, where appropriate, the architectural historic properties documented and evaluated in the companion architectural survey conducted by Mason Architects, Inc. (Ruzicka 2015).

For a historic property to be significant under HAR §13-275-6, the historic property should possess integrity of location, design, setting, materials, workmanship, feeling, and/or association, and meet one or more of the following criterion:

- “a” Be associated with events that have made an important contribution to the broad patterns of our history;
- “b” Be associated with the lives of persons important in our past;
- “c” Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;
- “d” Have yielded, or is likely to yield, information important for research on prehistory or history; or
- “e” Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity.

Historic property significance was evaluated and expressed by Ruzicka (2015) as eligibility for listing on the National Register (pursuant to 36 CFR 60.4) and/or the Hawai‘i Register (pursuant to HAR §13-198-8). To be considered eligible for listing on the National and/or Hawai‘i Register, a historic property should possess integrity as described above, and meet one or more of the following broad significance criteria:

- “A” that are associated with events that have made a significant contribution to the broad patterns of our history;
- “B” that are associated with the lives of persons significant in our past;
- “C” that embody the distinctive characteristics of a type, period, or method of construction, or that represent that work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
- “D” that have yielded, or may be likely to yield, information important in prehistory or history;

SIHP # 50-30-09-2280 is the Hanapēpē River Bridge. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). SIHP # -2280 is evaluated as significant pursuant to HAR §13-275-6 under Criterion “a” (be associated with events that have made an important contribution to the broad patterns of our history) for its associations with the development of Kaua'i's Belt Road system and the significant role the bridge played in the history of Hanapēpē town, and 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) as an excellent example of later developments in concrete bridge construction on Kauai and represents the “work of a master”. CSH's understanding is that the bridge is specifically not significant under Criterion “d” (“Have yielded, or is likely to yield, information important for research on prehistory or history”) as the physical bridge offers no information not available from other sources. Ruzicka (2015) identified that sheets of original construction drawings capture all of the information regarding bridge construction and have been summarized by an architectural historian. Ruzicka (2015) evaluated SIHP # -2280 as eligible to the National and Hawai'i Register under Criterion “A” (associated with events that have made a significant contribution to the broad patterns of our history), for its associations with the development of Kaua'i's Belt Road system and the significant role the bridge played in the history of Hanapēpē town, and Criterion “C” (embodies the distinctive characteristics of a type, period, or method of construction, or that represent that work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction) as an excellent example of later developments in concrete bridge construction on Kauai and represents the “work of a master”, William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department (Ruzicka 2015).

SIHP # 50-30-09-2281 is a concrete-capped basalt and mortar retaining wall. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). This report assesses SIHP # -2281 as not significant pursuant to HAR §13-13-275-6 based on the evaluation of eligibility by Ruzicka (2015). Ruzicka (2015) evaluated SIHP # -2281 as not eligible to National and Hawai'i Register pursuant to 36 CFR 60.4 and HAR §13-198-8, as this historic property “lacks significance associated with engineering distinction and has no known association with an important historic person or event” (Ruzicka 2015:7-4).

SIHP # 50-30-09-2282 is a concrete-capped, dry-stacked basalt stone retaining wall. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). This report assesses SIHP # -2282 as not significant pursuant to HAR §13-13-275-6 based on the evaluation of eligibility by Ruzicka (2015). Ruzicka (2015) evaluated SIHP # -2282 as not significant pursuant to HAR §13-257-6 and not eligible to National and Hawai'i Register pursuant to 36 CFR 60.4 and HAR §13-198-8, as this historic property “lacks significance associated with engineering distinction and has no known association with an important historic person or event” (Ruzicka 2015:7-4).

SIHP # 50-30-09-2283 is a large earthen and piled basalt stone berm. As this is an architectural historic property, the assessment of significance (pursuant to HAR §13-13-275-6) and determination of eligibility to the National and Hawai'i Register (36 CFR 60.4 and HAR §13-198-8, respectively) was conducted by Mason Architects, Inc. (Ruzicka 2015). SIHP # -2283 is evaluated as significant pursuant to HAR §13-275-6 under Criterion "a" (be associated with events that have made an important contribution to the broad patterns of our history) "for its association with community planning and the development of Hanapepe as well as with federal flood control projects" (Ruzicka 2015). Ruzicka (2015) evaluated SIHP # -2283 as eligible to the National and Hawai'i Register under Criterion "A" (associated with events that have made a significant contribution to the broad patterns of our history) "for its association with community planning and the development of Hanapepe as well as with federal flood control projects" (Ruzicka 2015).

Section 9 Project Effect and Mitigation Recommendations

9.1 Project Effect

Four historic properties (SIHP #s -2280 through -2283) were identified during the AIS within the APE. Of these four, two (SIHP #s -2280 and -2283) are recommended eligible to the National Register and the Hawai'i Register. It has been determined that the proposed undertaking will have an adverse effect on the Hanapēpē River Bridge (SIHP # -2280). Only a small portion of the berm (SIHP # -2283) will be removed and will not compromise the overall integrity of the historic property.

In accordance with Federal regulations (36 CFR 800.5), CSH's project-specific effect recommendation is "adverse effect." Under Hawai'i State historic preservation review legislation, the project's effect recommendation is "effect, with agreed upon mitigation commitments" (in accordance with HAR §13-13-275-7).

9.2 Mitigation Recommendations

Agreed upon mitigation commitments are detailed in the projects Memorandum of Agreement. These mitigation commitments include:

Architectural recordation in the form of HAER documentation is recommended for the two historic properties evaluated as eligible to the National Register, SIHP # -2280 (Hanapēpē River Bridge) and -2283 (berm). This will be done in consultation with the National Park Service HABS/HAER/HALS Coordinator in the Pacific West Regional Office, and will be completed by architects, historians, photographers and/or other professionals meeting the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61).

Interpretive materials are to be installed in consultation with the SHPD for the two historic properties (SIHP # -2280 and -2283). Character defining features of SIHP # -2280 will be salvaged for use in the interpretive signage/kiosk area.

During the removal of the small portion of the berm (SIHP # -2283), a construction method will be used that does not compromise the overall integrity of the historic property by ensuring the area where material is removed is left structurally stable and repaired with in kind materials.

Any historic properties directly adjacent to the APE shall be avoided and appropriately protected in place with construction fencing for the duration of the replacement project.

No further archaeological historic preservation work is recommended.

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Appendix A Historic Properties Documented Outside Projects APE

10.1 SIHP # 50-30-09-2284

FORMAL TYPE:	Wall
FUNCTION:	Erosion control
NUMBER OF FEATURES:	1
AGE:	Historic
TAX MAP KEY:	[4] 1-8-008 and [4] 1-9-007
LAND JURISDICTION:	Private
PREVIOUS DOCUMENTATION:	None

SIHP# -2284 is a wall that is constructed on the southwest side of the Kaumuali'i Highway and Iona Road intersection and along the boundary of the Shell gas station property and nearby residential properties. The wall is constructed of dry-stacked basalt boulders (Figure 54 and Figure 55 below). The wall is overgrown by a landscaped hedge of bougainvillea and other decorative plants. The wall was constructed to retain a level elevated sediment surface that is currently used for vehicular parking. SIHP # -2284 is considered to be older than 50 years. The wall is 20.0 m (65.6 ft) long and approximately 0.4 m (1.3 ft) wide, with a maximum height of 1.2 m (3.9 ft).



Figure 54. SIHP # -2284, retaining wall, view to southwest

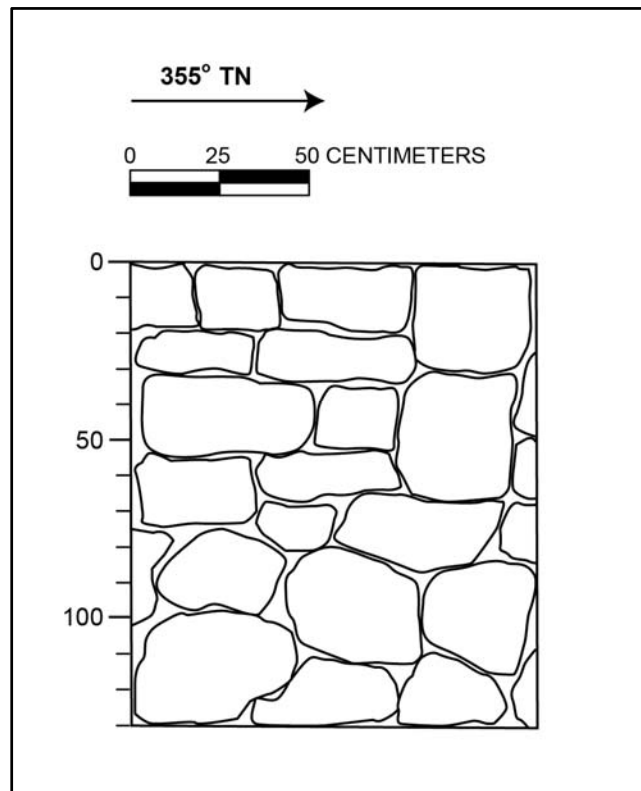


Figure 55. Profile map of a portion of SIHP # -2284, retaining wall

Appendix E
Historic Resource Inventory Form,
Reconnaissance Level, March 23, 2016



HAWAII STATE HISTORIC PRESERVATION DIVISION
HISTORIC RESOURCE INVENTORY FORM – Reconnaissance Level

FOR SHPD USE ONLY:

Site # [Click here to enter text.](#)

TMK # [Click here to enter text.](#)

GENERAL INFORMATION

Common / Present Name: Hanapepe River Bridge

Historic Name: Hanapepe Bridge

Address: Kaunualii Highway (Rt. 50) at Hanapepe River

City/ Town/ Location: Hanapepe

County: Kauai

TMK [(X)-X-X-XXX:XXX]: crosses (4)-1-9-007:001

Subdivision/Neighborhood: n/a

Latitude: 21d-54m-31.87s N

Longitude: 158d-35m-27.17s W

Original Use: Vehicular bridge

Current Use: Vehicular bridge

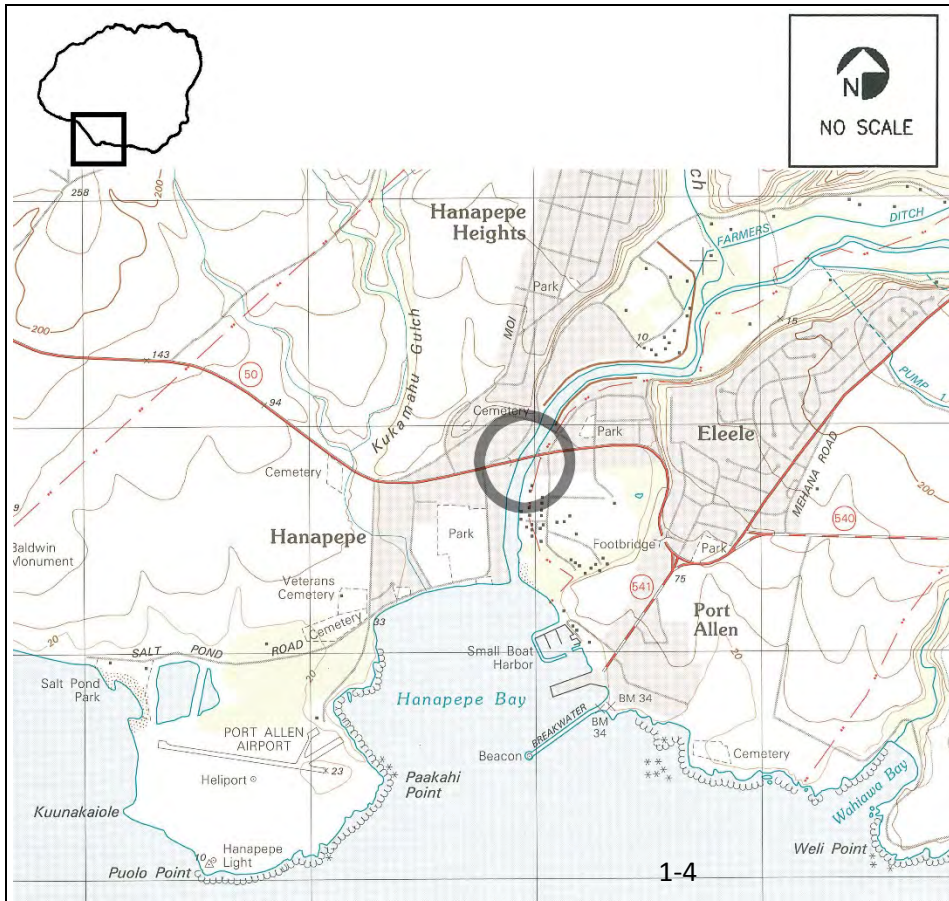
Architect/ Builder (if known): William R. Bartels, engineer. James W. Glover, builder.

Date of Construction (if known): 1938



Hanapepe River Bridge, view facing south

LOCATION MAP





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Prepared By: Dee Ruzicka Consulting Firm:
Mason Architects, Inc.
Address: 119 Merchant St. Suite 501 Honolulu, HI 96813
Telephone Number: 808-536-0556 Email: dr@masonarch.com Date:
26NOV2014

CONDITION ASSESSMENT

Category (select all that apply):

- Building(s)
 - Residential
 - Commercial
 - Educational
 - Public/Civic
 - Religious
 - Structure(s)
 - Object(s)
 - Site(s)/Landscape(s)
 - Archaeology or potential for archaeology
- Describe: _____

Alterations (additions, etc.) if known: At an unknown date, the ends of the bridge railings at the northeast, northwest, and southwest ends were altered by the addition of a flush concrete railing cast into the radiused cavetto molding at the original end post. Three of the four ends of the railings have been altered with the added, flush concrete approach rails. The length of these added rails is about 27' at the northwest and southwest, and about 20' at the northeast, where the added rail joins the levee wall. A band of composite panels on the outboard edge, upstream side was added at an unknown date. The roadway has been resurfaced at least once.



Hanapepe River Bridge, view facing west



Hanapepe River Bridge, view facing northeast

Original Location, if moved: _____
Reason for move (if known): _____

Condition:

- Excellent
- Good
- Fair
- Deteriorated

Condition Explanation: Some spalling of concrete at parapets

Eligibility (select all that apply):

- National Register of Historic Places
- State Register of Historic Places
- Not Eligible
- Eligible
- Listed



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- Contributing to Historic District:
- Name of District: _____
- Unknown

Criteria of Significance (select all that apply)

A: Associated with Events
 Event: Development of Kauai's Belt Road System.

B: Associated with Significant Person(s)
 Person(s): _____

C: Distinctive characteristics of a type, period or method of construction; work of a master; possess high artistic values (Architecture, Engineering, Design)

D: Have yielded or may be likely to yield information important to history or prehistory. Explain: _____

DESCRIPTION

Materials (please check those materials that are visible):

Height

- Stories: _____
- Below Ground
- N/A
- Other: bridge

Exterior Walls (siding):

- | | | |
|---|---|--|
| <input type="checkbox"/> Aluminum Siding | <input type="checkbox"/> Log | <input type="checkbox"/> Vinyl Siding |
| <input type="checkbox"/> Asbestos | <input type="checkbox"/> Metal | <input type="checkbox"/> Engineered Siding |
| <input type="checkbox"/> Brick | <input type="checkbox"/> Shingles-Asphalt | <input type="checkbox"/> Plywood |
| <input type="checkbox"/> Ceramic | <input type="checkbox"/> Shingles-Wood | <input type="checkbox"/> OSB |
| <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Stone | <input type="checkbox"/> Fiberboard |
| <input type="checkbox"/> Horizontal Wood Siding | <input type="checkbox"/> Stucco | <input type="checkbox"/> Fiber Cement |
| | <input type="checkbox"/> Vertical Wood Siding | <input type="checkbox"/> Other: _____ |

Roof:

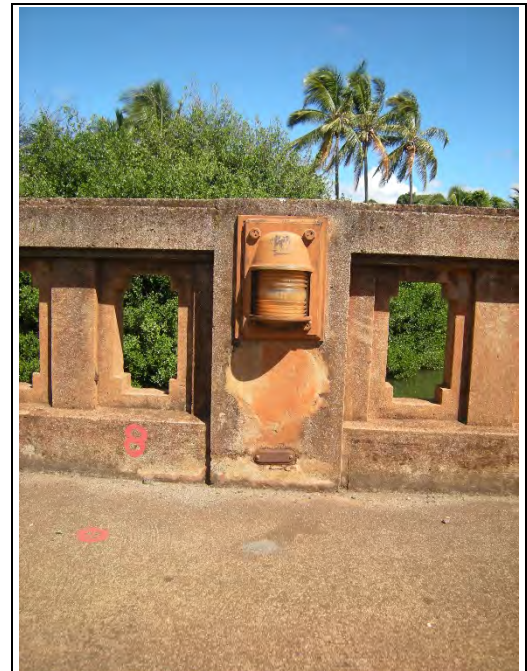
- | | | |
|---|-----------------------------------|--|
| <input type="checkbox"/> Asphalt, shingle | <input type="checkbox"/> Metal | <input type="checkbox"/> Ceramic Tile |
| <input type="checkbox"/> Asphalt, roll | <input type="checkbox"/> Slate | <input type="checkbox"/> Wood Shingle |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> Built Up | <input checked="" type="checkbox"/> None |

Foundation:

- | | | |
|---|---|---------------------------------------|
| <input type="checkbox"/> Brick | <input type="checkbox"/> None – on earth | <input type="checkbox"/> Stone |
| <input type="checkbox"/> Concrete Block | <input checked="" type="checkbox"/> Poured Concrete | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Concrete Slab | <input type="checkbox"/> Raised/Pile | |

Structural Support:

- | | | |
|---|---|---------------------------------------|
| <input type="checkbox"/> Baled Hay | <input type="checkbox"/> Frame-wood | <input type="checkbox"/> Puddled Clay |
| <input type="checkbox"/> Concrete Block | <input type="checkbox"/> Frame-metal/steel | <input type="checkbox"/> Rammed Earth |
| <input checked="" type="checkbox"/> Concrete Framed | <input type="checkbox"/> Brick-load bearing | <input type="checkbox"/> Sod |
| <input type="checkbox"/> Concrete Poured | <input type="checkbox"/> Stone-load bearing | <input type="checkbox"/> Other: _____ |



Hanapepe River Bridge, detail



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HISTORIC RESOURCE INVENTORY FORM –**Reconnaissance Level**

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Windows:

- Double Hung Sash
- Single Hung Sash
- Casement
- Fixed
- Stained Glass

- Replacement
 - Aluminum
 - Vinyl
- Jalousie
- Ribbon

- Glass Block
- None/Unknown
- Other: _____

Lanai(s)

- Arcade
- Balcony
- Porte-Cochere
- Recessed

- Stoop
- Portico
- Verandah
- Wrap-around

- None
- Other: _____

Chimney

- Brick
- Concrete
- Stuccoed Masonry

- Stone
- Stove Pipe
- Siding

- None
- Other: _____



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Narrative Description

Narrative Description:

The 1938 Hanapepe Bridge (Feature MAI A) is a 277' long reinforced concrete tee beam bridge that carries the two traffic lanes of Kaunualii Highway (Route 50) over the Hanapepe River on Kauai. The three-span bridge is 34' wide between the parapets, which provides for a 24' wide roadway and two 5' wide pedestrian walkways. The bridge crosses the river at an oblique angle. This results in about a 45 degree skew between the alignment of the roadway and the two supporting bridge piers, which are oriented into the current. The center span of the bridge is 114' long and includes a suspended center section 48' long that is supported on expansion bearings by cantilever sections extending toward the center from each of the bridge piers. The two outer spans, between the piers and each abutment, are 78'.

The setting of the bridge is the developed edge of the town of Hanapepe. Hanapepe Road is the main route through town. Route 50 is the main circle island road. Both sides of the highway are primarily lined with small businesses. Some houses are located along Route 50, but most of the town's residences and businesses are located on Hanapepe Road. About 500' upstream of the bridge is a 1911 concrete bridge across the river that carries Hanapepe Road, the former belt road. The 1938 Hanapepe Bridge re-routed the belt road and bypassed the town and the 1911 bridge.

The Hanapepe River is wide in the area of the bridge and fills the entire span. Upstream of the (1938) bridge, the riverbank is stabilized on the east bank with a sloping riprap embankment about 12' high topped by a 2'-6" high concrete levee wall. The upstream west bank is mostly concealed by thick vegetation, but a short exposed portion adjacent to the bridge is a lava rock rubble and concrete mortar retaining wall about 5' high that extends about 30' before disappearing into the vegetation. It appears that the remainder of the upstream west bank to the 1911 bridge is either a retaining wall or an earthen bank. Both banks downstream of the bridge are also concealed by vegetation and appear to be either earthen bank or retaining wall. Both downstream banks and the west upstream bank have house lots that run down to the river. The east upstream bank, over the levee wall, has a grassy slope toward Iona Road.

The 2'-6" high concrete parapets of the Hanapepe Bridge have Greek cross-type openings about 1'-2" high that are typical of Territorial bridges of the late 1930s and 1940s. These vertically-oriented openings are 1'-6" on center and are set between the 7" high stepped top rail and the 7" high base of the parapet. The four end stanchions are about 3'-2" high and equilateral L-shaped in plan with stepped corners. Each end stanchion is 1'-9" thick and each leg of the L is about 4'-3" long. Each is oriented with its right angle presented to oncoming traffic; one leg is in line with the parapet and the other projects outboard. The face of each that is presented to oncoming traffic is inscribed either "HANAPEPE" or "1938" in 3" high block letters. At the outboard end of the outboard leg of each of the four end stanchions is a section of solid panel concrete parapet extending parallel with the roadway for a short distance of between 6'-1" and 18'-11". The ends of each of these solid panel railings have a 3'-2" high concrete end post that is 1'-9" square in plan and has stepped corners. On the face of



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each end post opposite the solid panel railing, the original railing of the bridge ends with a concrete, concave feature about 10" thick in the shape of a prone cavetto molding with a 2'-7" radius.¹ Three of the four ends of the railings have been altered with an added, flush concrete approach rail cast into the cavetto molding. The railing end at the southeast corner has the original, unaltered cavetto. At the lower end of this cavetto, the concrete base of the bridge railing is contoured with a rounded corner of a quarter circle having a radius of 11".

Eight, 1'-6" long intermediate stanchions are located along the length of each parapet between the end stanchions. The intermediate stanchions are set with a variable spacing between 15'-6" and 34'-6". At the expansion joints of the suspended section there are paired stanchions, separated by the approximate 1½" wide expansion joint. Most of the stanchions, including the end stanchions, have rectangular light fixtures partially recessed into the roadway-facing side. These are heavy metal fixtures, 10" wide and 1'-2" high that have projecting curved metal ears with a ridged, half-cylinder glass lens between them.

The underside of the bridge has concrete abutments and wing walls. The roadway is an 8" thick concrete deck with asphalt paving that is supported by four longitudinal concrete stringers, 1'-6" thick at 8'-6" on center. The stringers are supported by the two transverse concrete piers in the river. The stringers of the center span have a basket arch profile on their lower edges. During typical water conditions, the upper arched portion of the stringers is about 8'-6" above the surface of the river. The stringers of the two flanking spans have half sections of the same arch profile. The walkways are 6" thick concrete and are cantilevered out from the outboard stringers. At the outboard end of this cantilevered section on the upstream side, below the parapet, is a band of solid panels about 3' high that has been suspended across the full length of the bridge. This band could not be accessed during the field inspection for this report, but it appears to be a series of 3' square composition board or plywood panels set into a light metal frame. Near the midpoint of the bridge, a portion of this band about 2'-6" wide has been chipped away, probably from impact with something moving downstream.

Hanapepe Bridge is bridge number 007000500301631 in the National Bridge Inventory Database. It was last inspected on July 30, 2013 by the State of Hawaii, Department of Transportation, Highways Division.

Integrity:

The Hanapepe Bridge retains sufficient integrity to convey its significance and enable NRHP listing. Integrity of location is retained. Integrity of setting is somewhat reduced by construction in the vicinity of the bridge. Integrity of design, materials, and workmanship are reduced by alterations, but the major design elements, construction materials and their evident craftsmanship are intact. Integrity aspects of feeling and association are also retained.

¹ Cyril M. Harris, Dictionary of Architecture and Construction, (New York: McGraw-Hill). 1975. P. 320.



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Nearby Resources:

Within the Area of Potential Effect (APE), additional resources were identified:

Feature MAI K: Retaining wall. Location: Right bank of the Hanapepe River between the 1911 bridge and the 1938 Hanapepe River Bridge, just north of the 1938 bridge. Description and evaluation: This concrete rubble masonry (CRM) constructed retaining wall, of unknown construction date, at the river's edge is about 6 ½ ' long and 3 ½ ' high. This retaining wall is evaluated as not eligible for the National Register of Historic Places. It lacks significance associated with engineering distinction and has no known association with an important historic person or event.

Feature MAI L: Retaining wall. Location: Left bank of the Hanapepe River just below the 1938 Hanapepe River Bridge. Description and evaluation: This retaining wall is about 50' long and 5' high. It was built at an unknown date and is constructed of dry stacked stones, topped in areas by a concrete cap. This retaining wall is evaluated as not eligible for the National Register of Historic Places. It lacks significance associated with engineering distinction and has no known association with an important historic person or event.

Feature MAI H: Levee (portion). Location: Left bank of the Hanapepe River between the 1911 bridge and the 1938 Hanapepe River Bridge. The left bank levee ends at the upstream edge of the 1938 Hanapepe River Bridge, it does not extend downstream of the bridge. Downstream the river bank appears to be a series of retaining walls, each constructed by the individual property owners along the edge of the river. Description and evaluation: The levee is an earthen and riprap berm about 380' long between the bridges. It is about 12' high, topped by a 3' high concrete wall. The left bank levee also extends upstream from the 1911 bridge, out of the project area, for a total distance of about 2,200'.

The right bank levee extends upstream from the 1911 Hanapepe Bridge (out of the project area) for a distance of about 4,465'. Both were engineered by the US Army Corps of Engineers (USACOE), Honolulu District. The right bank levee ends at the upstream face of the 1911 Hanapepe Bridge and does not extend downstream of the 1911 bridge. Between the 1911 bridge and the 1938 Hanapepe River Bridge the river bank consists of a series of retaining walls, constructed by the individual property owners along the edge of the river.

The left bank levee was built ca. 1959 and the right bank levee was completed in August 1963. In 1965 the Honolulu District called for an additional 3' of height to both the levees. This modification presumably was the 3' high wall atop the left bank berm, which was completed in November 1966 (Thompson 1980, 256-57). This levee is evaluated as eligible for the National Register of Historic Places under Criterion A for its association with community planning and development of Hanapepe as well as with federal flood control projects.

Both right and left bank levees lack significance associated with engineering distinction. They are not considered to be a distinctive example of USACOE flood control engineering or to contribute significantly to an understanding of the development of flood control structures and are not eligible under NRHP Criterion C.



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During the field inspection of the surrounding area and the Kaunualii Highway for a distance of approximately ½ mile on either side of the Hanapepe Bridge the following features were noted which are outside the APE.

Feature MAI B: 1911 concrete bridge over Hanapepe River at Hanapepe Road. Location: about 440' upstream from 1938 Hanapepe Bridge. Description and evaluation: This 200' long, four span, reinforced concrete deck girder bridge has a single 18' wide traffic lane. A 4'-8" wide walkway with a metal pipe railing, elevated about 4' above the roadway, is cantilevered off the Makai side. The walkway was added in 1927 and is accessed by concrete stairs at either end. The bridge has a solid panel concrete parapet on the mauka side with a peaked top rail. "1911" is inscribed at the center of the parapet, facing the roadway and on the ends of the parapet, facing oncoming traffic. The superstructure of the bridge is three reinforced concrete piers in the river that support longitudinal beams with haunches at the piers and abutment ends. The bridge has concrete abutments and basalt CRM (concrete rubble masonry) wing walls. In the 2013 *Hawaii State Historic Bridge Inventory and Evaluation*, this bridge has been determined eligible for the Hawaii and National Register of Historic Places under Criterion A as a prominent product of the early Territorial government's public works program and for its significant contributions to the development of Kauai's transportation system and the history of Hanapepe town. The bridge was also determined eligible (in the 2013 Bridge Inventory) under Criterion C for its association with early developments in concrete bridge construction in Hawaii and as the work of a master, Joseph Moragne of the County of Kauai Engineer's Office (MKE Associates, 2013. 3-95). This bridge is outside the APE and was not evaluated in this report for eligibility for the National Register of Historic Places.

Feature MAI C: Small retail building at 4510 Hana Road. Location: North side of Kaunualii Highway about 525' east of Hanapepe Bridge, TMK 1-9-005: 003. Description and evaluation: Constructed ca. 1950, this single story shop building has a flat roof with stepped parapet, chamfered corner entry with double doors and screened transom, and a cantilevered canopy with guy wires. This building is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.

Feature MAI D: Westside Pharmacy building at 1-3845 Kaunualii Highway. Location: North side of Kaunualii Highway about 780' east of Hanapepe Bridge, TMK 1-9-005: 011. Description and evaluation: This Craftsman style, two-story residence building has been converted to a retail pharmacy on the first floor. It has a lava rock front lanai with squared column bases and scuppers, and paired wooden columns supporting the double pitch roof, which is covered in wood shingles. This building was constructed ca. 1936. This building is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.

Feature MAI E: Concrete bridge. Location: Kaunualii Highway about 1500' east of Hanapepe Bridge. Description and evaluation: This concrete bridge (NBI # 007000500301668), with a span of about 18', has a concrete slab deck and concrete abutments and wing walls. A wooden walkway with painted wooden railing is on the south side of the bridge. This 1939 structure is also known as the McBryde Plantation Road Bridge. It is listed in the 2013 Hawaii State Historic Bridge Inventory as not eligible for the NR as a culvert with no distinctive engineering or architectural features that depart from standard culvert design (MKE Associates, 2013. 3-7). This



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bridge is outside the APE and was not evaluated in this report for eligibility for the National Register of Historic Places.

Feature MAI F: Kauai Soto Zen Temple at 1-3500 Kaumualii Highway. Location: Kaumualii Highway and Moi Road about 1000' west of Hanapepe Bridge, TMK 1-8-008: 082. Description and evaluation: This religious campus has an ornate temple building with a double pitched roof, an ornate open sided bell pavilion. The fence along Kaumualii Highway is cast concrete with diamond-shaped perforations and a top course of thin circles about 14" in diameter, all imbedded with bits of coral. The temple was constructed in 1978. The temple is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.

Feature MAI G: Concrete culvert. Location: Kaumualii Highway at milepost 17 about 1800' west of Hanapepe Bridge. Description and evaluation: This five-barrel concrete culvert is about 44' long along the highway with concrete headwalls that extend above the level of the roadway to form solid parapets. Makai of the culvert, the ditch is lined with concrete-mortared lava rubble masonry. Mauka of the culvert is a stilling basin lined with concrete-mortared lava rubble masonry. The stilling basin is fed by single, large diameter (approximately 8') arch culvert with a concrete headwall that brings water from the mauka side of Hanapepe Road. This culvert is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.

Feature MAI I: Hanapepe Town including Hanapepe Road. Location: Along Hanapepe Road north east of the Hanapepe Bridge. Description and evaluation: The main business district of Hanapepe Town that was bypassed upon the construction of the 1938 Hanapepe Bridge contains shops, restaurants, and a theater that were the center of activity for Hanapepe Town. This section of Hanapepe Road extends from Hana Road to Ko Road. The Hanapepe Economic Alliance states that Hanapepe has 43 buildings and sites that meet State or National Register criteria (Bain 2005). Hanapepe Town and Hanapepe Road are outside the APE and were not evaluated for eligibility for the National Register of Historic Places.

Feature MAI J: Retaining wall. Location: Right bank of the Hanapepe River between the 1911 bridge and the 1938 Hanapepe Biver Bridge. Description and evaluation: This concrete rubble masonry (CRM) constructed retaining wall, of unknown construction date, at the river's edge is about 50' long and 5' high. This retaining wall is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.

Feature MAI M: Retaining wall. Location: Southwest corner of junction of Kaumualii Highway and Iona road. Description and evaluation: This concrete rubble masonry (CRM) retaining wall, of unknown construction date, is about 65' long and is typically about 4' high. This retaining wall is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.

Feature MAI N: Retaining wall. Location: Kaumualii Highway at junction with Hana Road. Description and evaluation: This low wall, of unknown construction date, is composed of dry stacked stones and chunks of coral, concrete, and asphalt. It is about 150' long and typically about 1 ½ ' high. It appears to have been modified and does not retain integrity. This retaining wall is outside the APE and was not evaluated for eligibility for the National Register of Historic Places.



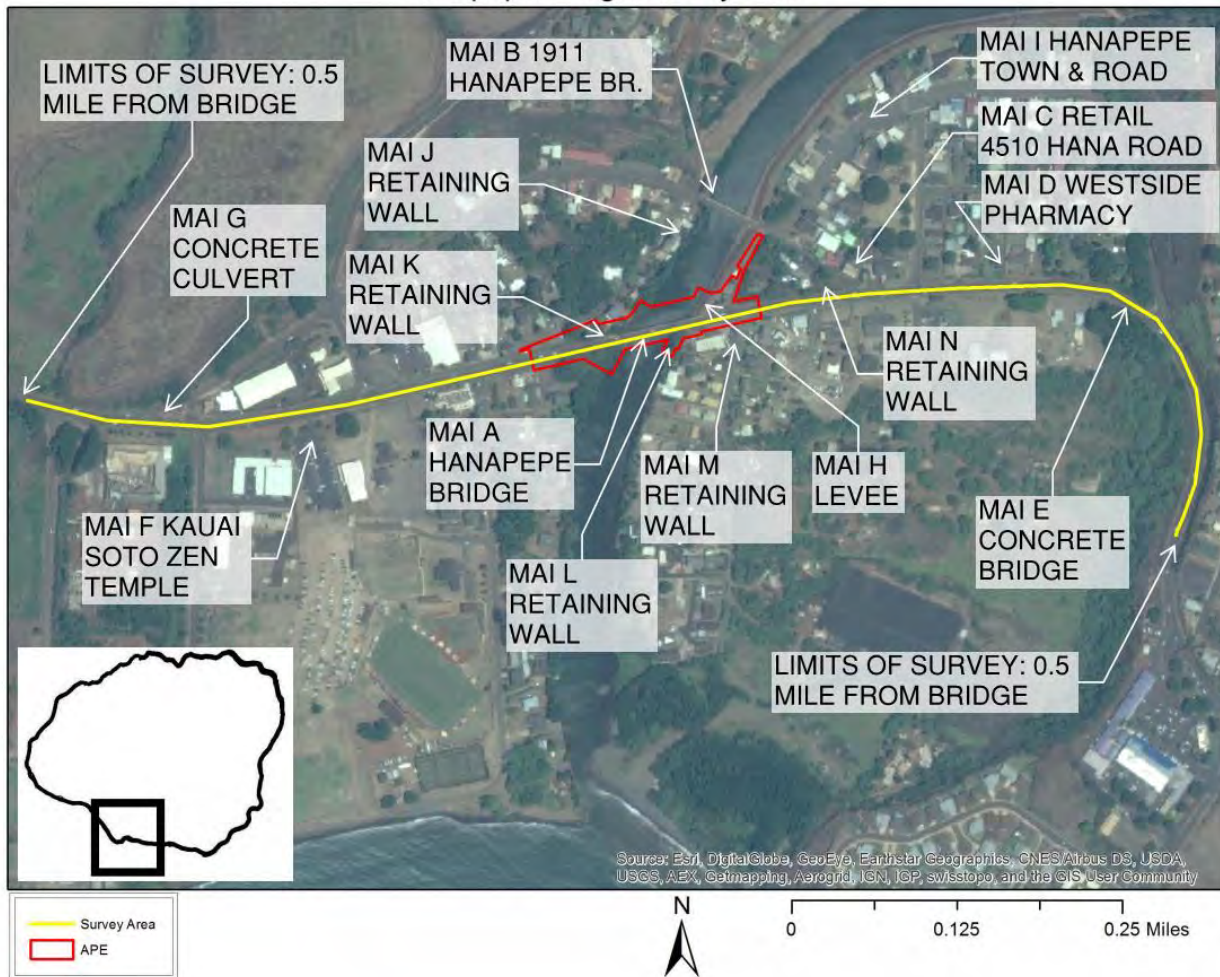
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Hanapepe Bridge Survey Area





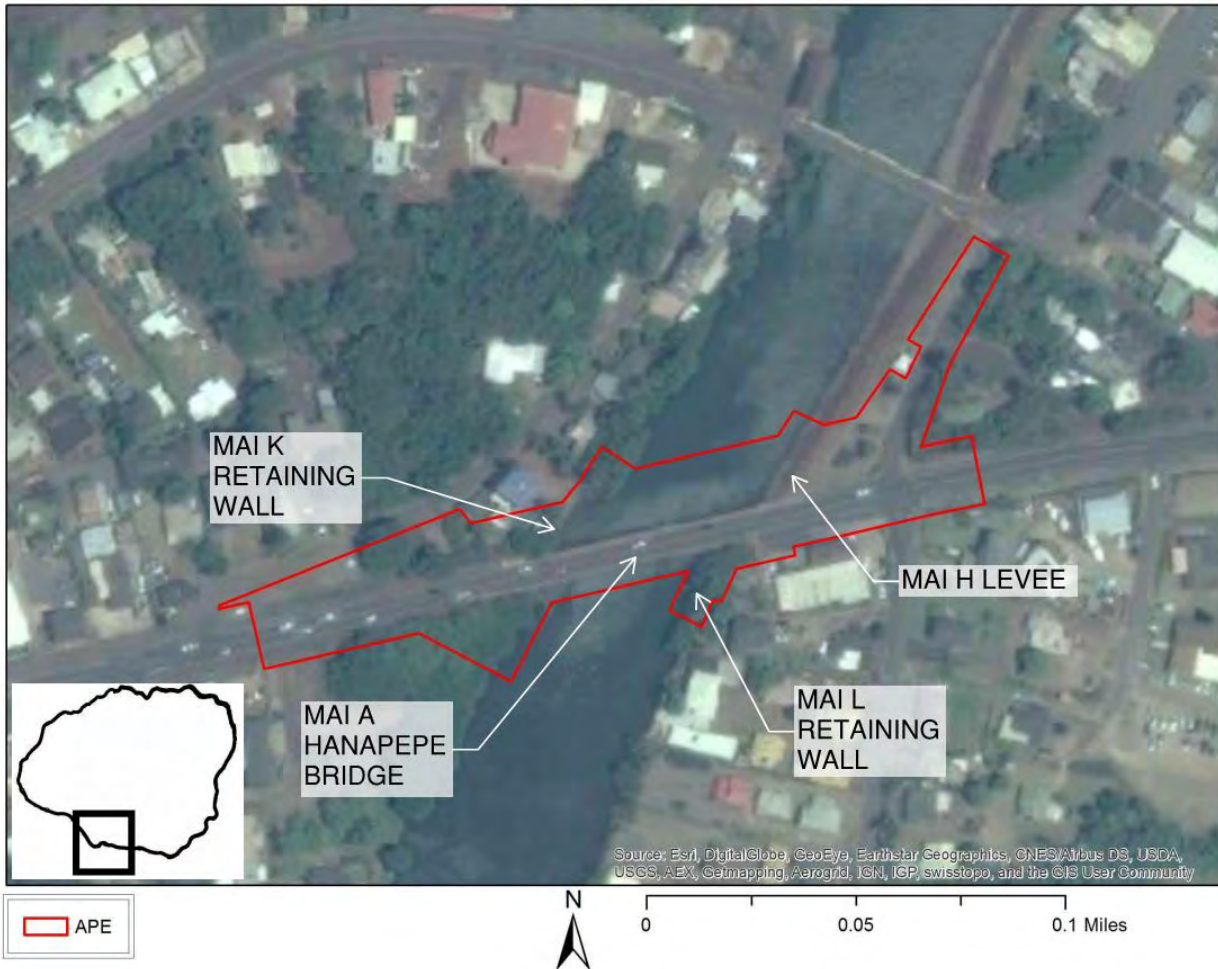
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Hanapepe Bridge APE
Historic Resources
within the APE



Statement of Significance



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Historical Context:

The Hanapepe Bridge was built in 1938 as part of Federal Aid Highway Project (FAP) 12-J. The contract for this project was let by the Territorial Highway Department to contractor James W. Glover for a total amount of \$272,676. This total amount consisted of \$136,338 in Federal funds and an equal amount in funding from territorial sources. The official completion date of FAP 12-J was April 26, 1939. Drawings for the bridge were produced by the Hawaii Territorial Highway Department from October to December 1937, with revisions made in May 1938. Notes at the left margin on the original set of drawings list W. R. Bartels as the bridge designer. Bartels was a bridge engineer for the Hawaii Territorial Highway Department. He received his education and training in Germany and immigrated to Hawaii in 1932 when he commenced working with the Highway Department. He continued his career there until his retirement in 1958. During that period he was a prolific designer, responsible for large and sophisticated bridge construction projects in Hawaii, including many tee-beam and rigid-frame concrete bridges.

Sugar production began on the lands east and west of Hanapepe Valley in the late 1800s; Eleele Plantation in 1880, Gay & Robinson in 1885, Hawaiian Sugar in 1899 and McBryde in 1899. By the beginning of the 20th Century the valley was populated with numerous small independent rice farms on former taro lo'i. Hanapepe town grew up as a community of farmers and their families (Lovejoy 1976). Businesses started in Hanapepe town to serve the local farmers. In the early 1900s there was a grocery, blacksmith, and a hotel. Through the following decades, the expanding sugar industry meant more workers in the area to frequent the businesses in town. Hanapepe town's position in the center of a fertile production area fostered increasing commerce there. Before the Hanapepe Bridge was built, traffic moving across the river used the 1911 bridge, located about 500' upstream. This 1911 bridge carried the main road (Hanapepe Road) that ran through town. By 1920 Hanapepe Road east of the bridge was lined with businesses and was the central business district of Hanapepe, while immediately north of the river were small rice farm lots (Evans 1920, map).

During the 1920s, California's rice industry eclipsed local production and as land was taken out of rice cultivation, sugar moved into the valley. Rice farmers took jobs as sugar workers and stevedores loading sugar at the Port Allen docks. A modest construction boom ensued in the early 1930s (Neal 1977). Hanapepe town got a theater, ice skating rink, and many stores, along with the nickname of Kauai's Biggest Little Town (Neal 1977). Saturday night in Hanapepe town became an event, and the town became an entertainment center for residents and for workers from the nearby camps who came in for fun and excitement. Traveling Japanese acts, drama, and sumo came to town. Travelling carnivals such as E.K. Fernandez made Hanapepe their sole stop on Kauai, and traveling salesmen would base themselves there when on the island (Lovejoy 1976).

By 1940 the population of Hanapepe was 1,166 and the area of the central business district between Hanapepe Road and Hawaii Belt Road (Rt. 50) east of the river was planned as the prime center of commercial growth by the Territorial Planning Board (Hawaii Territorial Planning Board 1940). Additional commercial growth was projected west of the river, with additional housing to the northwest, on higher ground. By the early 1960s,



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portions of this planning had been implemented. East of the river, the central business district on Hanapepe Road remained the town's core, and some housing had been built to the northwest.

Significance Statement:

The Hanapepe Bridge, a reinforced concrete tee beam structure, is significant for its contribution to the areas of engineering and transportation in Hawaii. The bridge is eligible under Criterion A for its associations with the development of Kauai's Belt Road system. The bridge has also played a significant role in the history of Hanapepe town. The new alignment of the Belt Road and this new bridge has an adverse effect on Hanapepe town, as it drew traffic away from its existing commercial core. It is eligible under Criterion C as an excellent example of later developments in concrete bridge construction on Kauai and represents the "work of a master": William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department (THD).

The construction of the Hanapepe Highway Bridge was one of the late 1930s Federal Aid projects on Kauai, funded partially with regular Federal Aid money (sometimes called Post Road Funds), rather than Depression work program funds. Bridges were a special concern of the federal highway system, and the Territorial Highway Department began to straighten out the belt roads and replace narrow and hazardous bridges. New bridges constructed with Federal Aid dollars, such as the Hanapepe Highway Bridge, were generally larger and more decorative than county financed bridges.

The bridge was designed by William R., Bartels of the THD and constructed by James W. Glover, Contractor. Robert M. Belt, THD District Engineer, supervised construction. Bartels was responsible for the design of many major territorial bridge projects between 1932 and his retirement from the department in 1956.[sic] His work characteristically utilized the latest technology and involved a high degree of engineering complexity. Nonetheless, his bridges evidence a refined aesthetic sensibility which makes them distinctive from the works of other engineers.

William R. Bartels was a German born engineer who worked briefly for a sugar plantation on Maui before being hired by the Territorial Highway Department in 1932. Bartels designed most territorial bridges from then until 1957. He was responsible for the largest and most sophisticated bridge construction projects in Hawaii during this time. There was also a marked shift in bridge structure to large deck girder and rigid frame bridges. Bartels ended his tenure as Chief of the Bridge Division at age 70. This was well past the standard retirement age but he was kept on by special permission and out of necessity because his abilities were so great. Bridges designed by Bartels have often been hailed for their accomplishment of engineering as well as aesthetics (MKE Assoc., Fung Assoc. 2013, 3-31).



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Drawings and Photographs:

Historic drawings are available at the Hawaii Department of Transportation, Highway Design Section database as electronic scans. These include:

FAP 12J, 12 sheets. Dated 1937

Project SD 65-364, 5 sheets. Dated 1966

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Project 50BC 01-92M, 4 sheets. Dated 1992

Project Hwy K 03-97M, 1 sheet. Dated 1997

Historic photographs of the Hanapepe Bridge are available in the Hawaii State Archives Photo Collection, Folder PP 47-3, "Kauai, Hanamaulu – Hi."

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Appendix F
Cultural Impact Assessment Report,
April 2016

Final

**Cultural Impact Assessment Report for the
Hanapēpē River Bridge Replacement Project,
Hanapēpē Ahupua‘a, Waimea District, Kaua‘i,
Federal Highway Administration/
Central Federal Lands Highway Division
(FHWA/CFLHD) contract DTFH68-13-R-00027
TMKs: [4] 1-8-008, 1-9-007, 1-9-010, and 1-9-011**

**Prepared for
CH2M HILL
and on behalf of the
Federal Highway Administration (FHWA)
Central Federal Lands Highway Division (CFLHD)**

**Prepared by
Nicole Ishihara, B.A.,
Brittany Beauchan, M.A.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: HANAPEPE 8)**

April 2016

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Management Summary

Reference	Cultural Impact Assessment Report for the Hanapēpē River Bridge Replacement Project, Hanapēpē Ahupua‘a, Waimea District, Kaua‘i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) contract DTFH68-13-R-00027, TMKs: [4] 1-8-008, 1-9-007, 010, and 011 (Ishihara et al. 2016)
Date	April 2016
Project Number(s)	<ul style="list-style-type: none"> • FHWA/CFLHD contract code: DTFH68-13-R-00027 • CH2MHILL Project Task ID: 499067.09.SU.CS • Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: HANAPEPE 8
Agencies	FHWA/CFLHD, SHPD
Land Jurisdiction	State Department of Transportation (HDOT)
Project Proponent	FHWA/CFLHD, HDOT
Project Funding	FHWA/CFLHD, HDOT
Project Location	The proposed project is located along Kaumuali‘i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The study area encompasses the two bridges over Hanapēpē River, portions of north and south Puolo Road, a portion of Iona Road, Pepe Road, Hanapēpē Road, Hana Road, areas on either side of Kaumuali‘i Highway, and Hanapēpē River, which includes portions of private residences and businesses. The study area is depicted on a portion of the 1996 Hanapepe U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Description	The proposed project would replace the existing deficient Hanapēpē Bridge to meet current design standards for roadway width, load capacity, bridge railing and transitions, bridge approaches, and to mitigate the effects of scour. The existing bridge was constructed in 1938 and is a reinforced concrete T-beam structure. The bridge has a length of approximately 275 feet (ft).
Project Acreage	The project area includes approximately 1.2 hectares (2.9 acres).
Document Purpose	This cultural impact assessment (CIA) was prepared to comply with the State of Hawai‘i’s environmental review process under Hawai‘i Revised Statutes (HRS) §343, which requires consideration of the proposed project’s potential effect on cultural beliefs, practices, and resources. Through document research and cultural consultation efforts, this report provides information compiled to date pertinent to the assessment of the proposed project’s potential impacts to cultural beliefs, practices, and resources (pursuant to the Office of Environmental Quality Control’s <i>Guidelines for Assessing Cultural Impacts</i>) which may include traditional cultural properties (TCPs). These TCPs may be significant historic properties under State of Hawai‘i significance criterion “e,”

	<p>pursuant to Hawai‘i Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance criterion “e” refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6). The document will likely also support the project’s historic preservation review under HRS §6E and HAR §13-275 and §13-284. The document is intended to support the project’s environmental review and may also serve to support the project’s historic preservation review under HRS §6E-8 and HAR §13-284.</p>
<p>Results of Background Research</p>	<p>Background research for this study yielded the following results (presented in approximate chronological order):</p> <ol style="list-style-type: none"> 1. Hanapēpē literally translates to “crushed bay,” possibly referring to the frequent landslides of the area (Pukui et al. 1974). According to Wichman, the name “crushed bay” is thought to have derived from the the appearance of the cliffs of the area from the sea (Wichman 1998:30). Hanapēpē is also the name of a honeycreeper known as the <i>nuku pu‘u</i> on the other Hawaiian Islands. 2. The current project area spans the Hanapēpē River, which empties into the sea almost immediately east. The Hanapēpē River is the third longest river on Kaua‘i beginning at the confluence of Kō‘ula and Manuahi streams, approximately halfway up the length of the <i>ahupua‘a</i> (Wichman 1998:27). 3. Māhele documentation indicates Hanapēpē Ahupua‘a was rich in agricultural resources. Approximately 92 claims were filed for the area, however, only 66 claims were awarded. The majority of land was being planted in <i>lo‘i kalo</i> (taro terrace). In addition, house sites, <i>kula</i> lands (used for dryland crops such as sweet potatoes), <i>mo‘o</i> (small land plot) with unspecified usage, pasture, gardens, <i>loko</i> (pond), salt lands, and a pigpen were documented in LCA claims. 4. Trails could be found along the shorelines, streams, and leading to the uplands of Hanapēpē Ahupua‘a. Prior to the twentieth century, the Hanapēpē River needed to be forded when traveling between Waimea and to east Kaua‘i. Trails could also be found going to Mount Wai‘ale‘ale and beyond. 5. Foreign interests began to invest in the surrounding lands of Hanapēpē including ‘Ele‘ele and Wahiawa during the mid- to late nineteenth century. The development of large-scale agricultural ventures stimulated by the Reciprocity Treaty of 1875 allowed for certain goods such as sugar to be exported duty-free to the

	<p>United States. The Hawaiian Sugar Company located on the west side of lower Hanapēpē Valley and the McBryde Sugar Company in Wahiawa were two major sugar companies in the area.</p> <p>6. In 1906, a plantation-sponsored Kauai Railway was constructed. The rail line built a bridge across the Hanapēpē River extending to 'Ele'ele Landing. Eleele Plantation had its own mill and landing popularly known as Port Allen. The Kauai Railway liquidated in 1941.</p> <p>7. According to previous archaeology, several burial sites can be found <i>mauka</i> (toward the mountains) and <i>makai</i> (seaward) of the current project area. <i>Mauka</i> of the project area are three burials: State Inventory of Historic Places (SIHP) # 50-30-09-607, a burial in Japanese Cemetery; SIHP # -0497, a burial in First United Church Cemetery; and SIHP # -1710, a coffin burial and several fragments of human burials. <i>Makai</i> of the project area are several burials including SIHP # -0608, a burial within Filipino Cemetery; SIHP #s -0704 and -0705, two human burials found in the vicinity of a historic cultural deposit; SIHP # -0604, a burial in Veteran's Cemetery; SIHP # -0651, a burial in Japanese Cemetery; and a cluster of burials found within Bennett's Site 53 (burial ground northwest of Hanapēpē Bay) including SIHP #s -0053 and -01987.</p>
<p>Results of Community Consultation</p>	<p>CSH attempted to contact Native Hawaiian organizations (NHOs), agencies, and community members. Below is a list of individuals who shared their <i>mana'o</i> (thought, idea) and <i>'ike</i> (experience, knowledge) about the project area and Hanapēpē Ahupua'a.</p> <ol style="list-style-type: none"> 1. Kamana'opono Crabbe, <i>Ka Pouhana</i> at Office of Hawaiian Affairs (OHA) 2. Rhoda Libre, Founder of Kaua'i Westside Watershed Council 3. Frank and Abby Santos, traditional salt maker in Hanapēpē
<p>Non-Cultural Community Concerns and Recommendations</p>	<p>Based on information gathered from the community consultation, participants voiced the following concerns not related to the cultural context.</p> <ol style="list-style-type: none"> 1. A community concern expressed during consultations included the impacts of construction on traffic, pedestrians, and motorists. The community recommended that parties involved with the project make a full consideration of the impacts of construction on traffic, and the safety of pedestrians and motorists. It was recommended that work proceed at night or during times of low traffic volume, and that clear signage stating the speed limit be posted throughout the project area.

<p>Impacts and Recommendations</p>	<p>Based on information gathered from the cultural and historic background, the proposed project may potentially impact undetected <i>iwi kūpuna</i> (ancestral bones). CSH identifies potential impacts and makes the following preliminary recommendations.</p> <ol style="list-style-type: none"> 1. Māhele documents indicate the vicinity of the study area was once under habitation and cultivation by Native Hawaiians. Previous archaeology conducted <i>mauka</i> and <i>makai</i> of the project have yielded <i>iwi kūpuna</i> (ancestral bones) including SIHP #s 50-30-09-0607 (burial in the Japanese Cemetery) and -0704 and -0705 (two burials found in the vicinity of a historic cultural deposit). All three burials have been found within a 0.5-mile radius of the current project area. No archaeology projects have been conducted within the the current project area. Based on these findings, there is a possibility <i>iwi kūpuna</i> may be present within or in the vicinity of the project area and that land-disturbing activities during construction may uncover presently undetected burials or other cultural finds. Should burials (or other cultural finds) be encountered during ground disturbance or via construction activities, all work should cease immediately and the appropriate agencies should be notified pursuant to applicable law, HRS §6E. 2. A community concern expressed regards the effects of construction on the “historic look” of the bridge. The community agrees the historic look of the bridge is iconic to historic Hanapēpē Town. In addition to preserving the historic look, the community recommends the current view planes from the bridge (an unobstructed view of the ocean) remain intact, as these views are also iconic and emblematic of historic Hanapēpē Town. 3. Another community concern regards the impacts of construction on the water quality and ecosystem health of Hanapēpē River (whereby disturbances to river quality may impact cultural practitioners such as <i>lawai‘a</i> [fisherman] and/or paddlers). It was recommended that the Kaua‘i Westside Watershed Council remain on the “ground-floor of planning.” Specifically, the community recommended that community members, the Kaua‘i Westside Watershed Council, and various stakeholders be actively involved in discussions and planning prior to construction. In addition to the involvement of the community and various stakeholders during planning stages, questions were brought forth regarding the presence of cultural monitors, consultants, and assessors, and if they will be present during ground disturbance. 4. A final concern brought forth by the Kaua‘i Westside Watershed Council regards the addressing of numerous questions regarding bridge construction and the environmental impact related to
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	<p>construction activities. Concerns included whether there will be any additions to existing lanes (i.e., car, bike, walking path), and whether an assessment has been made of the damages caused by Monsanto containers that had hit both bridges during a recent flood and resulted in a chemical spill that affected the river, soil, and offshore reefs. The resultant injuries to bridges, food supplies, cultural practices, and natural habitat were observed and felt by the community. The community recommends that these injuries be addressed.</p>
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Section 1 Introduction

1.1 Project Background

At the request of CH2M HILL and on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), Cultural Surveys Hawai'i, Inc. (CSH) completed this cultural impact assessment (CIA) report for the Hanapēpē River Bridge Replacement project, Hanapēpē Ahupua'a, Waimea District, Kaua'i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) contract DTFH68-13-R-00027, TMKs: [4] 1-8-008, 1-9-007, 010, and 011. The proposed project is located along Kaumuali'i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The study area encompasses the two bridges over Hanapēpē River, portions of north and south Puolo Road, a portion of Iona Road, Pepe Road, Hanapēpē Road, Hana Road, areas on either side of Kaumuali'i Highway, and Hanapēpē River, which includes portions of private residences and businesses. The study area is depicted on a portion of the 1996 U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax map plats (Figure 2 and Figure 3), and a 2013 aerial photograph (Figure 4).

The purpose of the project is to replace the existing deficient Hanapēpē Bridge to meet current design standards for roadway width, load capacity, bridge railing and transitions, bridge approaches, and to mitigate the effects of scour. The existing bridge was constructed in 1938 and is a reinforced concrete T-beam structure. The bridge has a length of approximately 275 feet (ft).

The project area includes approximately 1.2 hectares (2.9 acres). The area of potential effect (APE) for the current project is defined as the entire 1.2-hectare (2.9-acre) project area.

1.2 Document Purpose

The purpose of this CIA is to comply with the State of Hawai'i's environmental review process under Hawai'i Revised Statutes (HRS) §343, which requires consideration of the project's potential effect on cultural beliefs, practices, and resources. Through document research and cultural consultation efforts, this report provides information compiled to date pertinent to the assessment of the proposed project's potential impacts on cultural beliefs, practices, and resources (pursuant to the Office of Environmental Quality Control's *Guidelines for Assessing Cultural Impacts*), which may include traditional cultural properties (TCPs). These TCPs may be significant historic properties under State of Hawai'i significance criterion "e," pursuant to Hawai'i Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance criterion "e" refers to historic properties that "have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity" (HAR §13-275-6 and §13-284-6). The document will likely also support the project's historic preservation review under HRS §6E and HAR §13-275 and §13-284. The document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS §6E-8 and HAR §13-284.

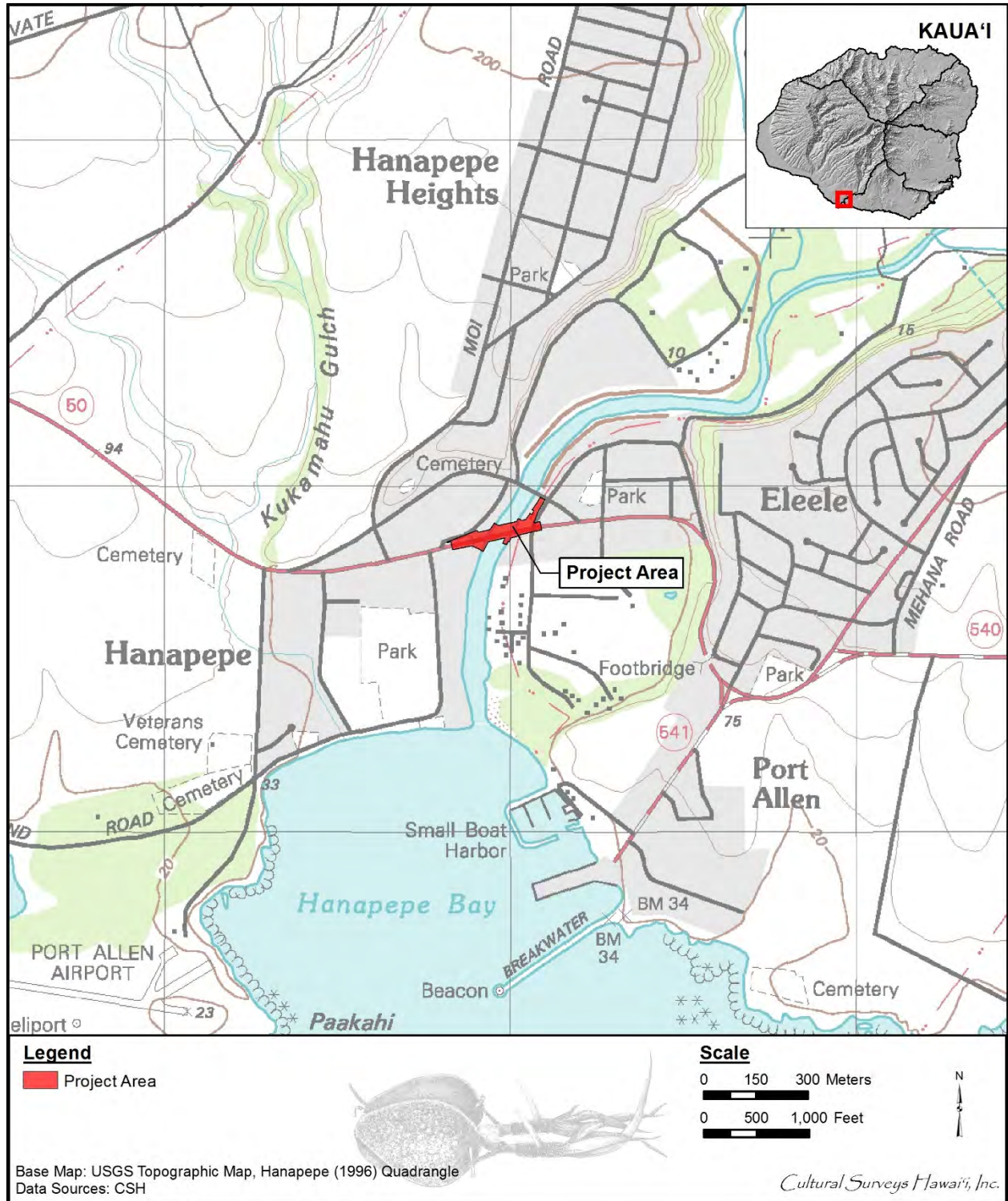


Figure 1. Portion of the 1996 Hanapepe USGS 7.5-minute topographic quadrangle showing the location of the study area

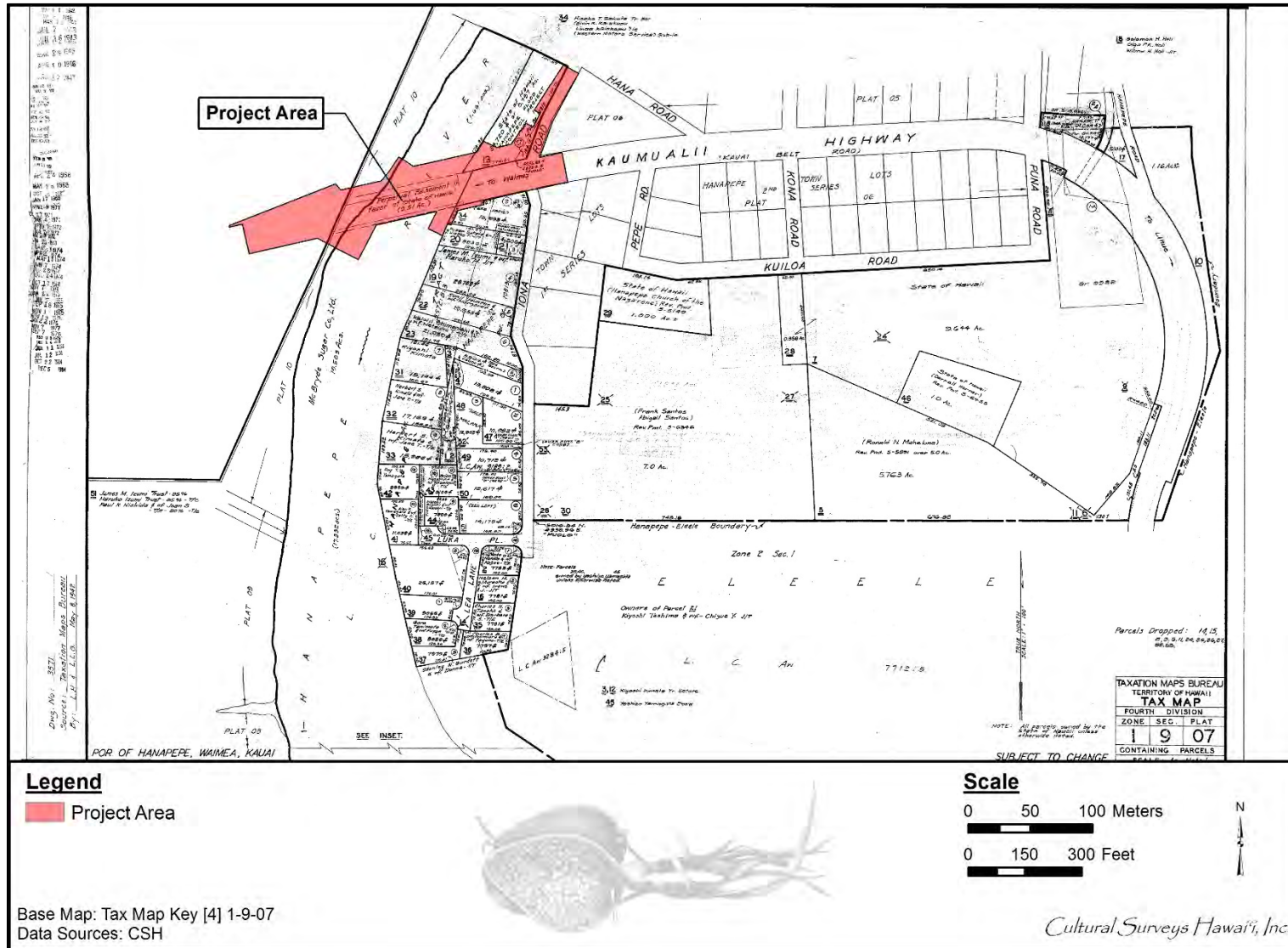


Figure 2. Tax Map Key (TMK) [4] 1-9-007 (Hawai'i TMK Service 2009)

CIA for the Hanapēpē River Bridge Project, Hanapēpē, Waimea, Kaua'i

TMKs: [4] 1-8-008, 1-9-007, 010, and 011

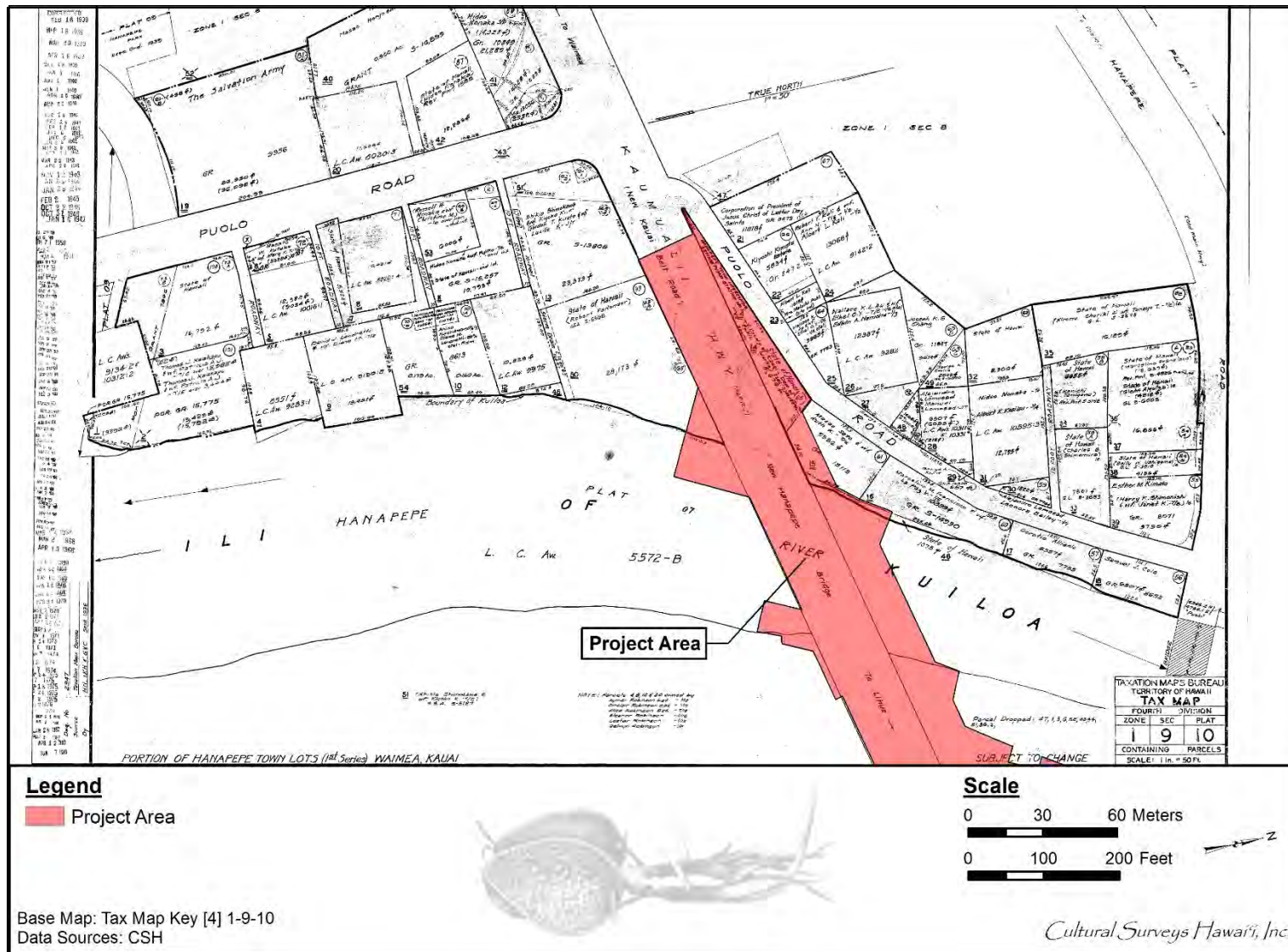


Figure 3. TMK: [4] 1-9-10, showing study area (Hawai'i TMK Service 2009)

CIA for the Hanapepe River Bridge Project, Hanapepe, Waimea, Kaua'i

TMKs: [4] 1-8-008, 1-9-007, 010, and 011

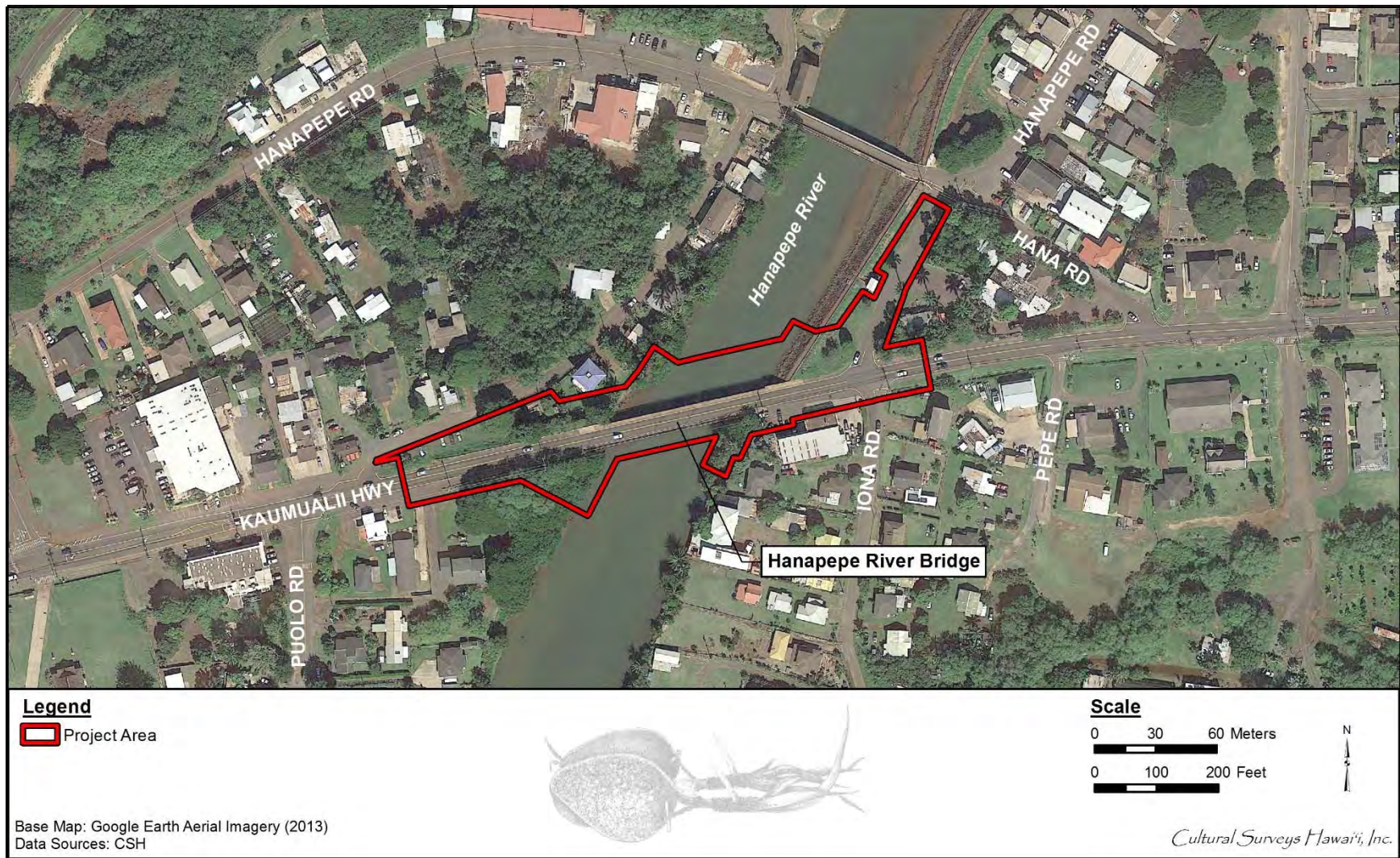


Figure 4. Aerial photograph (Google Earth 2013), showing study area

Due to federal funding, this project is a federal undertaking, requiring compliance with Section 106 of the National Historic Preservation Act, the National Environmental Policy Act, and Section 4(f) of the Department of Transportation Act. The proposed project is also subject to Hawai'i State environmental and historic preservation review legislation (HRS §343 and HRS §6E-8/ HAR §13-275, respectively).

1.3 Scope of Work

The scope of work for this CIA includes the following:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.
2. Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.
3. Consultation and interviews with knowledgeable parties regarding cultural and natural resources and practices at or near the parcel; present and past uses of the parcel; and/or other practices, uses, or traditions associated with the parcel and environs.
4. Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

1.4 Environmental Setting

1.4.1 Natural Environment

Hanapēpē Ahupua'a is bounded by the *ahupua'a* (traditional land division) of Ho'ānuanu and Makaweli in the north and Wahiawa in the south. The study area stretches across Hanapēpē River at elevations of approximately 20 m (65.6 ft) to 40 m (131.2 ft) above mean sea level (AMSL).

Geologically, Kaua'i consists essentially of a single great shield volcano, deeply eroded, and partly veneered with much later volcanics that rises 17,000 ft above the surrounding sea floor. At the top of the shield was a caldera 10 to 12 miles across—the largest in the Hawaiian Islands. The southern flank of the shield collapsed to form a fault-bounded trough, the Makaweli graben, or depression, some 4 miles wide. Lavas erupted in the caldera gradually filling it, except on the higher northwestern side, and eventually spilled over its low southern rim into the graben, down which they flowed into the sea (Macdonald and Abbott 1970:381).

Hanapēpē is to one side of the collapsed shield, and probably was in part formed by the action of the collapse. It is probably because of this overflow that Hanapēpē Bay and the salt flats at Ukula are at the extreme edge of the infilling. Ethel Damon refers to it as “the long earth crack believed to have been rent asunder by volcanic action rather than worn down by erosion” (Damon 1931:220). The mean yearly rainfall for the shoreline area is 500-750 cm (Giambelluca et al. 1986:86) with the annual temperature range between 60° and 80° (Armstrong 1983) while the upper part of the *ahupua'a* has an annual rainfall of 8,000 cm or between 4,000-5,000 inches a year with an average temperature of 65°.

The proposed project is located on the leeward side of the island of Kaua'i where the climate is warmer and less moist than the windward side of the island (Armstrong 1983). Compared to the interior of the island, which hosts the world's wettest spot with annual rainfall of approximately

450 inches per year, the average precipitation in Hanapēpē is about 27.1 inches per year or 2.3 inches per month (Clean Islands Council 2011). As with Waimea, Hanapēpē is a canyon land with many valleys and streams that carry water from the mountains in the interior to the sea, near the study area.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the study area's soils consist of Jaucas loamy fine sand, dark variant, 0 to 8% slopes (JkB), Hanalei silty clay loam, 0 to 2% slopes (HmA), and Pakala clay loam, 0 to 2% slopes (PdA) (Figure 5).

Jaucus sands are described as follows:

This soil occurs near the ocean in areas where the water table is near the surface and salts have accumulated. It is somewhat poorly drained in depressions but excessively drained on knolls. In the depression there is normally a layer of silty alluvial material flocculated by the high concentration of soluble salts. The water table is normally within a depth of 30 inches. [Foote et al. 1972:79]

Soils of the Hanalei Series are described as follows:

. . . somewhat poorly drained to poorly drained soils on bottom lands on the islands of Kauai and Oahu. These soils developed in alluvium derived from basic igneous rock. They are level to gently sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 20 to 120 inches. The mean annual soil temperature is 74° F. Hanalei soils are geographically associated with Haleiwa, Hihimanu, Mokuleia, and Pearl Harbor soils.

These soils are used for taro, pasture, sugarcane, and vegetables. The natural vegetation consists of paragrass, sensitiveplant, honohono, Java plum, and guava. [Foote et al. 1972:38]

Pakala soils are described as follows:

. . . well-drained soils on alluvial fans and bottom lands on the island of Kauai. These soils developed in alluvium. They are nearly level to moderately sloping. Elevations range from nearly sea level to 400 feet. The annual rainfall amounts to 25 to 40 inches. The mean annual soil temperature is 73° to 75° F. Pakala soils are geographically associated with Makaweli soils.

These soils are used for irrigated sugarcane, pasture, truck crops, and homesites. The natural vegetation consists of koa haole, kiawe, bermudagrass, mango, and associated plants. [Foote et al. 1972:107]

1.4.2 Freshwater Resources

Hanapēpē Ahupua'a is a land rich in freshwater resources with many streams and stream valleys that run *mauka* (from the mountains) to *makai* (seaward). Handy and Handy wrote that, "freshwater fish were abundant in the great streams (Waimea, Makaweli, and Hanapēpē) which drained the boggy uplands of central Kaua'i. That island, being quite old geographically, was blessed with very large streams" (Handy and Handy 1972:275). Many of the streams are permanent with undoubtedly intermittent streams as well. Thus, gulches and waterfalls are also plentiful as evidenced by the many place names of these features. Hanapēpē River, which empties into the sea almost immediately east of the study area, is the third longest river on Kaua'i and it begins at the



Figure 5. Aerial photograph (Google Earth 2013), showing study area along Kaumuali'i Highway crossing Hanapēpē River, with overlay of soil series (soil boundaries from Foote et al. 1972)

confluence of the streams of Kō'ula and Manuahi, approximately halfway up the length of the *ahupua'a* (Wichman 1998:27). The large upper valley of Kō'ula served as a place of retreat for missionaries and large property owners and many early travelers mention going to Hanapēpē to view its waterfalls.

1.4.3 Winds and Rains of Hanapēpē

Each geographic location throughout the Hawaiian Islands had a Hawaiian name for its own wind, rain, and seas. The name of the winds are listed in a chant concerning a powerful gourd called *The Wind Gourd of La'amao*. When the gourd was opened, a specific wind could be called to fill the sails of a canoe and take the person in the desired direction. The chant lists the winds of Waimea Moku from west to east:

Waipao is of Waimea,
 Kapaahoa is of Kahana,
 Makaupili is of Pe'ape'a,
 Aoao is of Hanapēpē [Nakuina 1990:53]

In *The Epic Tale of Hi'iakaikapoliopole*, Pele recites the winds of Lehua, Ni'ihau, and Kaua'i. The introduction of winds connected to places are a reflective aspect of the narrative as it places the reader in the setting. The follow excerpt is from *The Epic Tale of Hi'iakaikapoliopole*:

Hanapēpē has an 'Aoa wind
 Kāne'ōhi'a has a Pu'ukapu wind
 Kalae has a Holoholokula wind
 Wahiawa has an Unulau wind [Ho'oulumāhie 2008:16]

In addition, Section 3.4.1 glosses the two other winds of Hanapēpē: 'Aoaholokula and 'Aoaholoawāwa.

1.4.4 Built Environment

The study area is located in the center of Hanapēpē Town as part of Kaumuali'i Highway and extends to the north on Hana Road, including the single lane Hanapēpē Bridge (Figure 6). From the Hanapēpē River Bridge, the study area extends to the west (Figure 7) to a crosswalk just west of the intersection of Puolo Road and the highway (Figure 8) and extends to the east to just west (Figure 9) of the Hana Road and highway intersection, in front of the fire station (Figure 10). A portion of Hanapēpē Road between Hana Road and the highway is included in this project (Figure 11). The surrounding area consists of residential houses, restaurants, commercial buildings, a church, the fire station, and a gas station.



Figure 6. View of Hana Road, facing the single lane Hanapēpē Bridge, view to east



Figure 7. Photo of study area on the east side of Hanapēpē River Bridge, view of Kaumuali'i Highway, view to west



Figure 8. Photo of western end of study area (west of the Puolo Road and Kaumuali'i Highway intersection), restaurant in the background, view to south



Figure 9. Photo of study area on the west side of Hanapēpē River Bridge, view of Kaumuali'i Highway, view to east



Figure 10. Photo of eastern end of study area (west of the Kona Road and Kaumuali'i Highway intersection), fire station in the background, view to north



Figure 11. View of Hanapēpē Road, road between Hana Road and the highway, view to south

Section 2 Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka‘ao* (legends), *wahi pana* (storied places), *‘ōlelo no‘eau* (proverbs), *oli* (chants), *mele* (songs), traditional *mo‘olelo* (stories), traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai‘i State Archives, the Bishop Museum Archives, the University of Hawai‘i at Mānoa’s Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai‘i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona ‘Aina Corporation’s Māhele database (Waihona ‘Aina 2000), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of ‘Āina website (Ava Konohiki 2015).

2.2 Community Consultation

2.2.1 Scoping for Participants

The cultural department commences consultation efforts by utilizing our previous community contact list to facilitate the interview process. We then review an in-house database of *kūpuna* (elders), *kama‘āina* (native born), cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior’s NHO list), and community groups. CSH also contacts agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response on the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.2 “Talk Story” Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their *‘ike* (knowledge) and *mana‘o* (thought, opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

“Talk Story” sessions range from the formal (e.g., sit down and *kūkā* [consultation, discussion] in the participant’s place of choice over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH also conducts group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewees' answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) adding missing details to *mo'olelo*.

CSH seeks *kōkua* (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua'a* (traditional land division extending from the mountain to the sea); past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka'ao* and *mo'olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask that they make any necessary edits. Once the interviewee has made those edits, CSH incorporates their *'ike* and *mana'o* (insights and opinions) into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant's transcription, interview summary, and any photos that were taken during the interview. We also include a thank you card and honoraria.

It is important that CSH cultural researchers cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their *'ohana* (family). CSH researchers feel this is an important component to building relationships and being part of an *'ohana* and community.

“*I ulu no ka lālā i ke kumu—the branches grow because of the trunk,*” is an *'ōlelo no'eau* (#1261) shared by Mary Kawena Pukui with the simple explanation: “Without our ancestors we would not be here” (Pukui 1983:137). As cultural researchers, we often lose our *kūpuna* but we do not lose their wisdom and words. We routinely check obituaries and gather information from other community contacts if we have lost our *kūpuna*. CSH makes it a point to reach out to the *'ohana* of our *kūpuna* who have passed on and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 *Ka'ao and Mo'olelo*

3.1 Traditional Legends

3.1.1 The Legend of Ola

Hanapēpē appears in the *mo'olelo* of 'Ola as a place near where 'Ola's mother comes from. 'Ola succeeds his father as a chief of the Mū people in the Waimea District. The story tells of the taro patches of the Waimea flats and a relationship of the chief with the Menehune (legendary race of small people who worked at night, building fishponds, roads, and temples) who help build the *heiau* (pre-Christian place of worship) of Hauola. The following is a version of the *mo'olelo* told by Rice:

Ola is the son of Kualu-nui-pauku-moku-moku (a chief of the Mu people) and the chiefess Kuhapu-ola from Pe'ape'a on the Waimea side above Hanapēpē, whom the chief meets clandestinely. His name Ola is given when he is recognized by his father and thus 'saved from death' (ola) for breaking the chief's tapu. He succeeds his father in the rule over the Waimea district. Desiring to bring water to the taro patches of the Waimea flats, he is advised by his kahuna Pi to proclaim a tapu and summon the Menehune people to his aid. Each brings a stone and the watercourse (Kiki-a-Ola) is laid in a single night. These people also build the *heiau* of Hauola named 'after the famous city of refuge of his father at Kekaha.' They camp on the flats above called Kanaloa-huluhulu, plant taro (which is still growing on the cliffs of Kalalau), and build a big oven (Kapuahi-a-Ola) between Kalalau and Waimea. They also make a road of sticks (Kiki papa a Ola) through the swamps of Alakai to the height above Wainiha. [Beckwith 1970:328]

3.1.2 Kawelo and 'Aikanaka

The legend cycle of Kawelo (also known as Kawelo-lei-makua, or Kawelo who cherished his parents), is well-known and has many recorded versions with varying degrees of embellishment. Kawelo is known as a *kupua* (demigod, culture hero) in Hawaiian mythology (Beckwith 1970:372). Kawelo lived in Kaua'i and battled with his relative, the ruling tyrannical chief 'Aikanaka, who later settled in the Hanapēpē *mauka* region after being defeated by Kawelo.

In the version collected by Mary Pukui and included in Beckwith's work, Kawelo's father is Maihuna-li'i-'iki-o-ka-poko, the foster son of the high chief Holoholokū, who gave his name to the *heiau* in Wailua. His mother is high chiefess Malei-a-ka-lani, descended from Paoa. Pukui's version notes that Kawelo is the eldest son, and his two brothers are Kamalama and Kalaumaki. All three brothers were born in Wailua. Kawelo grows up to be a champion spear thrower and has many adventures in O'ahu. Eventually he comes back to Kaua'i to battle 'Aikanaka, who has banished Kawelo's parents from their own lands. Kawelo kills many with his war club, Kuika'a, and his wife, Kanewahineikiaohe, also helps him by tripping the giant Kauahoa with her *pīkoi* or tripping stick (Beckwith 1970:373). Kawelo is betrayed to 'Aikanaka by his foster son and is buried in stones three times but manages to shake himself free until the fourth time, when he is left for dead. He miraculously revives and slays everyone and lives in Wailua until his death of old age.

In another version from Fornander, Maihuna and his wife Malaiakalani have five children in Hanamā'ulu, including Kawelo. Kawelo is raised in Wailua with his relatives 'Aikanaka, and Kauahoa. Kawelo angers them with his prowess in wrestling and they leave him in O'ahu and return to Kaua'i (Beckwith 1970:374–374). Kawelo later learns that his parents have been mistreated by 'Aikanaka. He returns to Kaua'i in a double canoe, chanting as follows:

<i>E Kamalama iki kuu pokii,</i>	Say little Kamalama, my younger brother,
<i>I Wailua ka ihu o na waa e</i>	Point the bow of the canoe towards Wailua,
<i>I Wailua, e.</i>	Yes, towards Wailua. [Fornander 1999:32]

'Aikanaka is defeated by Kawelo who divides the lands, leaving the former to live in poverty with no home. 'Aikanaka then settles in upland Hanapēpē, where he is later visited by Kaeleha, the son of Kawelo. The two meet at Wahiawa, at the home of Ahulua. Kaeleha is shown great kindness and hospitality by 'Aikanaka, and therefore, feels indebted to him.

Taking pity on 'Aikānaka for the way he was forced to live, Kaeleha instructs him on how to defeat his father, Kawelo, in battle. 'Aikanaka is told to fight Kawelo with stones because he was never taught to dodge stones thrown at him. Learning of the possible uprising by 'Aikanaka, Kawelo sends Kamalama to confirm the rumors. Kamalama returns with news that 'Aikanaka and Kaeleha were gathering stones and making preparations for war. With great anger that his son would join 'Aikanaka, Kawelo immediately travels to Wahiawa where he is stoned by men, women, and children. He cannot defend himself with his war club or his wife's *pīkoi*, so he just stays in place until he is completely covered in stones (Fornander 1959:104–108).

Kawelo's body is later removed from the mound of stones. The people beat his lifeless body with clubs to ensure that he is dead, before carrying his body from Wahiawa to 'Aikanaka's temple at Maulili in Kōloa Ahupua'a. Arriving at Maulili near dark, Kawelo's body is left within the temple enclosure overnight, to offer to the gods the following morning. However, Kawelo miraculously recovers from his injuries. The following morning, at the arrival of 'Aikanaka and Kaeleha along with others, Kawelo surprises the gathering. He slaughters every single person and once more becomes the ruler of Kaua'i (Fornander 1959:112). In yet another version of the Kawelo cycle, Kawelo reaches old age while keeping his power until he is thrown off a cliff by his subjects (Beckwith 1970:377).

Beckwith notes the historical version of Kawelo's life, tracing his connection to his grandfather Kawelomahamahaia, a high-ranking chief with a *heiau* called Homaikawa that was "of the severest ritual class" and dedicated to the shark god (Beckwith 1970:377). Kawelomahamahaia was himself worshipped as a shark when he died (Beckwith 1970:377). What is of interest is that Kawelomahamahaia cemented the *ni'aupi'o* (bent coconut midrib; offspring of high-born brother and sister) rank when he ordered his son Kawelomakualua and his daughter Ka'āwihioakalani to mate. When Ka'āwihioakalani gave birth to twins, her offspring were of stronger *mana* (supernatural or divine power) than anyone else:

The *ni'aupi'o* automatically carried the *kapu moe*, which meant that anyone entering that chief's presence must do so crawling on one's stomach. Any commoner must fall to his or her face whenever the chief, or any article belonging to that chief, passed by. If the *ni'aupi'o*'s shadow fell on any person or any object, living or inanimate, it immediately became sacred and was destroyed. For this

reason, unless elaborate ceremonies freed them from the *kapu* for a short time and specific purpose, *ni'au'pi'o* only moved about at night. [Wichman 2003:72]

The twin boys were Kawelo-pe'ekoa, who was whisked away to be raised by priests as the "supreme *ali'i kapu*" (chief of special privilege) (Wichman 2003:74) and Kawelo'aikanaka, the same 'Aikanaka who would do battle with Kawelo. From 'Aikanaka's parents the tradition of *kapu moe*, also called "*kapu wela o na li'i*" or "burning hot *tapu* of chiefs" due to the death penalty for those who broke it, was later brought to O'ahu by the father of Kualii'i and to Maui during the rule of Kekaulike. [Beckwith 1970:378]

3.1.3 Prayers of Kāne

At the time of the arrival of the missionaries in Hawai'i, Kāne was considered by the people as the leading god of the Hawaiian pantheon, representing procreation and worshiped as the ancestor of chiefs and commoners (Beckwith 1970). The following account describes the ritual of worship; a series of prayers were invoked, the first of which is an enumeration of the names of Kāne. The first prayer is one "given by Kane when he began to offer prayer in the heiau of Kuikahi, at Hanapēpē, Kauai, near the stream of Manawai-o-puna" and "is calling on the lesser Kanes to do their duty and aid him (Beckwith 1970:52)." The account tells of the presence of Kāne in Hanapēpē at the *heiau* of Kuikahi.

Chanted prayers to the gods were an important part, perhaps the important part, of temple worship. The most sacred of these were uttered by the high priest and for this ritual a scaffolding was erected within the temple area called the Lananu'umamao because built in three stages, called nu'u (earth), lani (heavens), and mamao (far off but not beyond hearing). This last and most sacred stage was entered by the high priest and ruling chief alone. The whole structure was covered with white bark cloth (*oloa*). On the floor of the temple platform surrounding the structure stood the images, the chief image directly in front of the staging. On each side of the tower were sometimes placed arches of bent saplings, three on a side, and these were supposed to bend if the offering (or prayer) was acceptable. This oracular response of the gods may be compared with the drum placed over a high chief's threshold, whose sounding or silence indicated the rank of the one entering, or the cord similarly hung across the entrance which fell to the ground of itself before a high chief, but under which one of lower rank must stoop.

Prayers were offered at each step of the scaffolding. Some were offered at the altar before ascending the tower. A series of prayers used in the Kane worship and recited by an old Hawaiian from Kauai named Robert Luahiwa to Mr. Theodore Kelsey are here given as translated by Miss Laura Green in order to show the highly exalted religious feeling with which the high gods were approached by the priest who uttered the prayer, the audience meanwhile sitting motionless in perfect stillness until, at the word *noa*, the *tapu* was 'freed' and they might resume their customary liberty of movement. The word *amama* with which the prayer concludes is pre-Christian and not connected with the Christian *amen*.

The first prayer is little more than an enumeration of the names of Kane as the subordinate forms by which the one god who embraces them all is worshiped. It is the prayer given by Kane when he began to offer prayer in the heiau of Kuikahi, at

Hanapēpē, Kauai, near the stream of Manawai-o-puna and is calling on the lesser Kanes to do their duty and aid him. [Beckwith 1970:52]

3.2 *Wahi Pana*

A Hawaiian *wahi pana*, also referred to as a place name, “physically and poetically describes an area while revealing its historical or legendary significance” (Landgraf 1994:v). *Wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, and offshore islands and reefs, or they can refer to Hawaiian divisions such as *ahupua‘a* and *‘ili* (land divisions smaller than *ahupua‘a*), and man-made structures such as fishponds. In this way, the *wahi pana* of Hanapēpē and the specific study area tangibly link the *kama‘āina* (native-born) of Hanapēpē to their past.

The source for place names in this section is Lloyd Soehren’s (2010) online database, *Hawaiian Place Names*, and Fredrick B. Wichman’s (1998) *Kaua‘i, Ancient Place-Names and Their Stories*. Soehren compiled all names from mid-nineteenth century land documents such as Land Commission Awards (LCA) and Boundary Commission Testimony (BCT) reports. The BCT lists boundary points for many of the *ahupua‘a*. The names of *‘ili ‘āina* (land units within an *ahupua‘a*) and *‘ili kū* (land units awarded separately from a specific *ahupua‘a*) are compiled from the testimony in Māhele Land Commission Awards, from both awards successfully claimed and those rejected. Place names found by authors on USGS maps and Hawai‘i Survey Registered Maps (HSRM) were also added to the database. The Soehren database includes place name meanings from the definitive book on Hawaiian place names, *Place Names of Hawaii* (Pukui et al. 1974). For cases in which Pukui et al. (1974) did not provide a meaning, Soehren suggested meanings for simple names from the *Hawaiian Dictionary* (Pukui and Elbert 1986). There are numerous place names throughout Hanapēpē Ahupua‘a.

The name Hanapēpē literally translates as “crushed bay,” referring to the frequent landslides of the area (Figure 12; Pukui et al. 1974:41). According to Wichman, the name “crushed bay” is thought by some to have derived from the appearance of the cliffs of the area from the sea (Wichman 1998:30). Finney and Houston cite Hanapēpē as an ancient surfing place (Finney and Houston 1966). Wichman also states that the correct name of Hanapēpē is believed to be Hanapēpēhi or “killing bay.” Hanapēpē is also the name of a lowland honeycreeper known as the *nuku pu‘u* (possibly *Hemignathus lucidus lucidus*, *Hemignathus lucidus hanapepe*, and/or *Hemignathus lucidus affinis*) on the other Hawaiian Islands. The bird no longer exists but it was known for having one mandible longer than the other. Its disappearance is thought to have been due to loss of forested areas and to imported bird malaria (Wichman 1998:30).

Kapaliemo, or “slow cliff,” is a gulch through which the Hanapēpē River, the third longest river in Kaua‘i, flows. The walls on both sides of the gulch almost touch each other overhead (Wichman 1998:27). The valley of Haulili is located just below and literally means “entangled.” Haulili, called Hauhili by Soehren (2010) “rises at 2560 feet, enters Koula River at 1020 feet elevation, above Halulu Falls.” Halulu, or “rumbling,” is a waterfall over which combined streams flow. It was named for the noise of the waterfall echoing from the cliffs (Wichman 1998:27). According to Soehren (2010), Halulu Falls is located “970 feet on the Koula River, between Kalai and Olonawehe on the Manuahi/Koula boundary.”

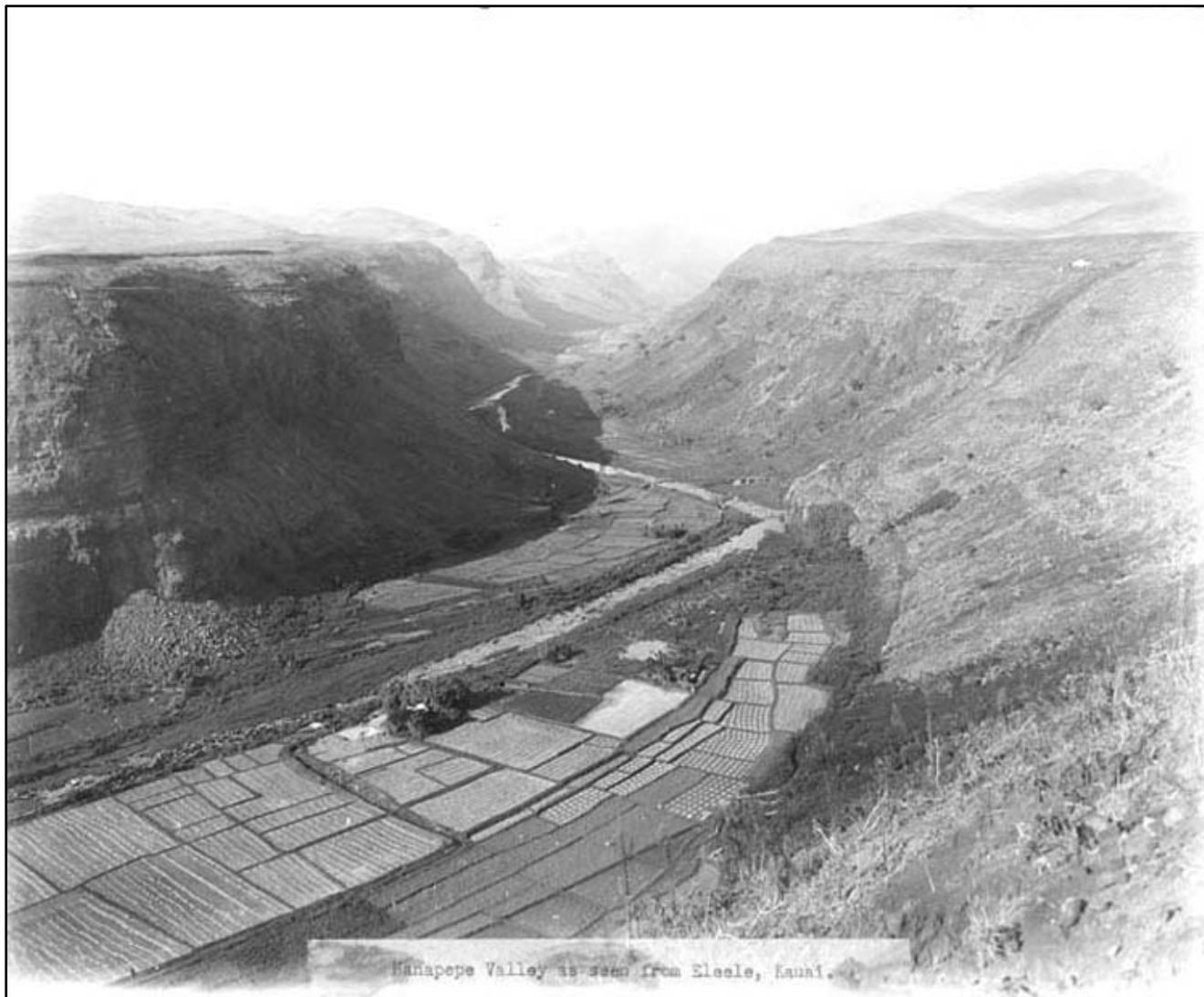


Figure 12. Photo of Hanapēpē Valley from ‘Ele‘ele Ahupua‘a, n.d. (photo courtesy of the Kamehameha Schools’ Baker Collection)

Near Halulu is Maka'opihī, or “eye of the *'opihī* limpet.” A cave is located at Maka'opihī in which Kawelo-'ai-kanaka lived after he was defeated by his cousin, Kawelo-lei-makua. Pāpōhākuhuna'ahu'ula is described as a large stone at the river crossing and means “stone wall in which a feather cape was hidden.” It was here that 'Aikanaka hid his symbol of rank in the story of Kawelo (Wichman 1998:27).

Kō'ula, or “red sugarcane,” is the name of a stream and the valley along the northern portion of the *ahupua'a*. A waterfall is located at the lower end of Kō'ula, called Manawaiopuna, or “stream branch of Puna.” This waterfall was considered “the most beautiful of all” (Wichman 1998:27). Kuikahi Heiau is where “[Kāne] began to offer prayer . . . near the stream of Manawaiopuna” (Beckwith 1970:53). Kō'ula Valley meets Manuahi Valley which runs northwest along the *ahupua'a*. The Hanapēpē River, described above, begins where these two valleys meet. Manuahi means “firebird,” or the endemic gallinule bird. According to Wichman, the Manuahi “had the secret of fire. The demigod Māui got the secret of fire from the bird and burned the top of the [bird's] head in revenge for its many lies. Since then, the dark gray bird always has a fiery red streak on the top of its head” (Wichman 1998:28).

Holoiwi, “traveling bones,” is on the west side of the *ahupua'a* and is a cliff from which chiefs were thrown over by commoners (refer to Section 3.2.1 for three stories associated with Holoiwi). The “leaping place of the soul” or *Ka-leina-'o-ka-'uhane* described in Section 3.2.1 is located along the eastern cliffs directly opposite Holoiwi. It is here that the souls of the dead enter the spirit world.

Kapāhili is a gulch that meets the Hanapēpē River near the southern portion of the *ahupua'a*. Kapāhili literally translates as “the blowing” (Pukui and Elbert 1986). Pualu is a *heiau*, also known as Bennett's Site 55, which he describes as “on the east side of Kapahili gulch about 1/4 mile from the road, and at the base of the second pali [cliff]” (Bennett 1931:113). Refer to Section 4.5.1.3 for a more detailed description of Pualu Heiau. Further south, near the Salt Pond Beach Park and south of the study area are Ku'unaka'iole Point, Pū'olo Point, and Pa'akahi Point.

3.2.1 Leina 'o-ka-'uhane at Hanapēpē

Each island has *leina 'o ka 'uhane* sites where the souls of the dead would leap into the afterlife. On the island of Kaua'i, Hanapēpē is listed by Fornander as one of them (Fornander 1999:5:575). According to Kamakau, when a spirit encounters the tree, *Ulu-o-Leiwalo*, if an *'aumakua* (deified ancestors who might assume the shape of sharks, owls, hawks) is present, the soul may be revived in the body or led into the *'aumakua* world. However, if there is no *'aumakua*, the soul will get caught on a dead branch and fall into endless night (Beckwith 1970:156). *Ka leina 'o ka 'uhane* is described by Wichman as located directly opposite Holoiwi, on the eastern cliffs (Wichman 1998:29). Another theory by Wichman states souls would jump to the valley floor and then travel by canoe to Pō, the land of the dead located in the depths of the ocean on the west of the island (Wichman 1988:29).

Fornander mentions a similar place to which souls of the departed traveled:

The soul also lives on a dry plain after the death of the body; and such places are called *ka leina a ka uhane* (the casting-off place of the soul). This name applies to wherever in Hawaii nei people lived, for Kauai people this place is at Hanapēpē. [Fornander 1999:5:576]

3.2.2 Namoemoe Fishpond

Records on Namoemoe Fishpond are derived from the Māhele Database and appear on Land Commission Awards (LCA) 09189 and 10657, located in the ‘*ili* of Kaauwaikahi and claimed by Keawe (Soehren 2010). In Foreign Testimony by Lono, Namoemoe Fishpond is among several fishponds said to be on Keawe’s land (Creed et al. 2001:5). In 1918, Thrum recorded on a Hawai‘i Survey Registered Map (HSRM) number 2615 two *loko* (fishpond) located within the boundaries of LCA 09189 and a third one immediately south of where the bridge crosses the Hanapēpē River, on the ‘Ele‘ele side of the river (Thrum 1918) (Figure 13). These fishponds appear to have been located near the river and the ocean.

3.2.3 Traditional Lighthouses

According to Dean (1991:138), early Hawaiians set up their own “lighthouse” on the high land north of Hanapēpē Bay, which was centrally located to serve the entire south coast and its vast fishery. This beacon fire, which was burned at a *heiau* dedicated to Lono—the god of agriculture, wind, cloud, and sea—was called Kukui-o-Lono, meaning “light of Lono.”

Bennett’s (1931) archaeological survey shows Kukuiolono at Kalaheo, just east of Wahiawa, but well inland of the seashore. Dean does not list her source for this information, but it is not unlikely that such a fishing beacon would have existed. There are several places where such beacon fires may have been regularly burned as a signal to night fishermen; one of them is at Kuku‘i Point, just west of Anakua Point (on the Makaweli-Hanapēpē border).

Another light, Hanapēpē Light, is located at Puolo Point near the Ukula salt flats, which was also the site of Kuahanui, described by Francis Gay as a canoe landing. Dean (1991:139) explains that after the sugar industry developed (by 1884) there were “lanterns showing red lights to distinguish them from plantations at [among other places] Hanapēpē.” She also describes a lamp raised 36 ft to the top of a tower at ‘Ele‘ele Landing to guide inter-island traffic. By 1908, the Light House Board had established these “lighted aids” such as at ‘Ele‘ele Landing and Puolo Point, which are probably remnants of Sites 51 and 52.

3.2.4 Pa‘akai and Salt Ponds

Hanapēpē is known for its salt ponds and *pa‘akai*, or the traditional Native Hawaiian way of preparing salt. The tradition of *pa‘akai* is kept and still practiced by families living in Hanapēpē (Figure 14 and Figure 15). In his survey of Kaua‘i in 1931, Wendell Bennett recorded salt pans as his Site 49, corresponding with salt ponds that still exist (Bennett 1931).

Salt Pond Beach Park is located southwest of the proposed project area at the end of Salt Pond Road. The ponds at the park are the only ones in the Hawaiian Islands known to still be in use. The salt pans are on a naturally flat area adjacent to the beach (Clark 1990:58). Salt making is usually a summertime feat dependent upon dry weather conditions and particularly sunny days. Rainy winter months dilute and dissolve salt. May showers clean out debris from the *puna* or wells. The *puna* are filled with ocean water and as water begins to evaporate, the *puna* are refilled with salt water. Water in the *puna* is collected and transferred to a *wakiū*, shallower holding tank where the salt concentration is even higher than a *puna*. The final stage is for the *wakiū* to be pumped into an *ālia*, shallow pan, where it completely evaporates (Clark 1990:58). After two or three days in the *ālia*, the salt is crystallized and raked. The salt is then drained and bagged.



Figure 13. 1918 sketch of three fishponds in LCA 09189 and another immediately south (Thrum 1918)



Figure 14. Photo of the Hanapēpē Salt Pans, n.d.



Figure 15. Photo of Hanapēpē Salt Pans mid-ground, n.d.

Kaua‘i Island is famous for its *‘alaea* or *‘alae*, a red, water-soluble, colloidal clay that is mixed into the *pa‘akai*. *‘Alae* is traditionally used for *la‘au lapa‘au* or Hawaiian healing medicine. It is also used as a dye and a component for ritual purification ceremonies. Hui Hana Pa‘akai is the organization permitted by the State of Hawai‘i to manufacture salt at Salt Pond Beach Park. Twelve *‘ohana mālama* (care for) these salt beds and continue to pass down the process generation to generation. A 1910 USGS topographic map depicts the project area and the location of the salt pans in Figure 16. Section 4.2 further discusses the salt pans in Hanapēpē in terms of foreign bartering.

3.3 *‘Ōlelo No‘eau*

Hawaiian knowledge was shared by way of oral histories. The following section draws from author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing *‘āina* (land), chiefs, plants, and places.

3.3.1 *‘Ōlelo No‘eau #1488*

The following *‘ōlelo no‘eau* is about Kaua‘i, the most northwestern island of the Hawaiian Island chain where the sun sets. The name of the island is also the name of an ancient *ali‘i* (chief) of Kaua‘i.

Ka moku kā‘ili lā o Manokalanipo.

The sun-snatching island of Manokalanipo.

Kaua‘i, the northwesternmost island of the group, beyond which the sun vanishes at dusk. Manokalanipo was an ancient ruler of Kaua‘i. [Pukui 1983:161]

3.3.2 *‘Ōlelo No‘eau #1905*

This proverb was used specifically in Kona Moku (Koloa District) on Kaua‘i to describe the thick leaves of the *kukui* (candlenut; *Aleurites moluccana*). The *ahupua‘a* of Hanapēpē straddles the Waimea and Koloa Districts.

Kukui-lau-nui-o-Kona.

Thickly leafed kukui of Kona.

A thick cloud that shuts out the light of the sun, like a heavily leafed kukui tree. This expression was used in the Kona district of Kaua‘i. [Pukui 1983:205]

3.3.3 *‘Ōlelo No‘eau #2543*

The following is a word used by Kaua‘i *ali‘i*:

‘Owā!

A signal word used by Kukuakalalau, a celebrated warrior of Kaua‘i who fought under Kalanialiloa, a chief of Kaua‘i. It means, ‘Here they come!’ [Pukui 1983:278]

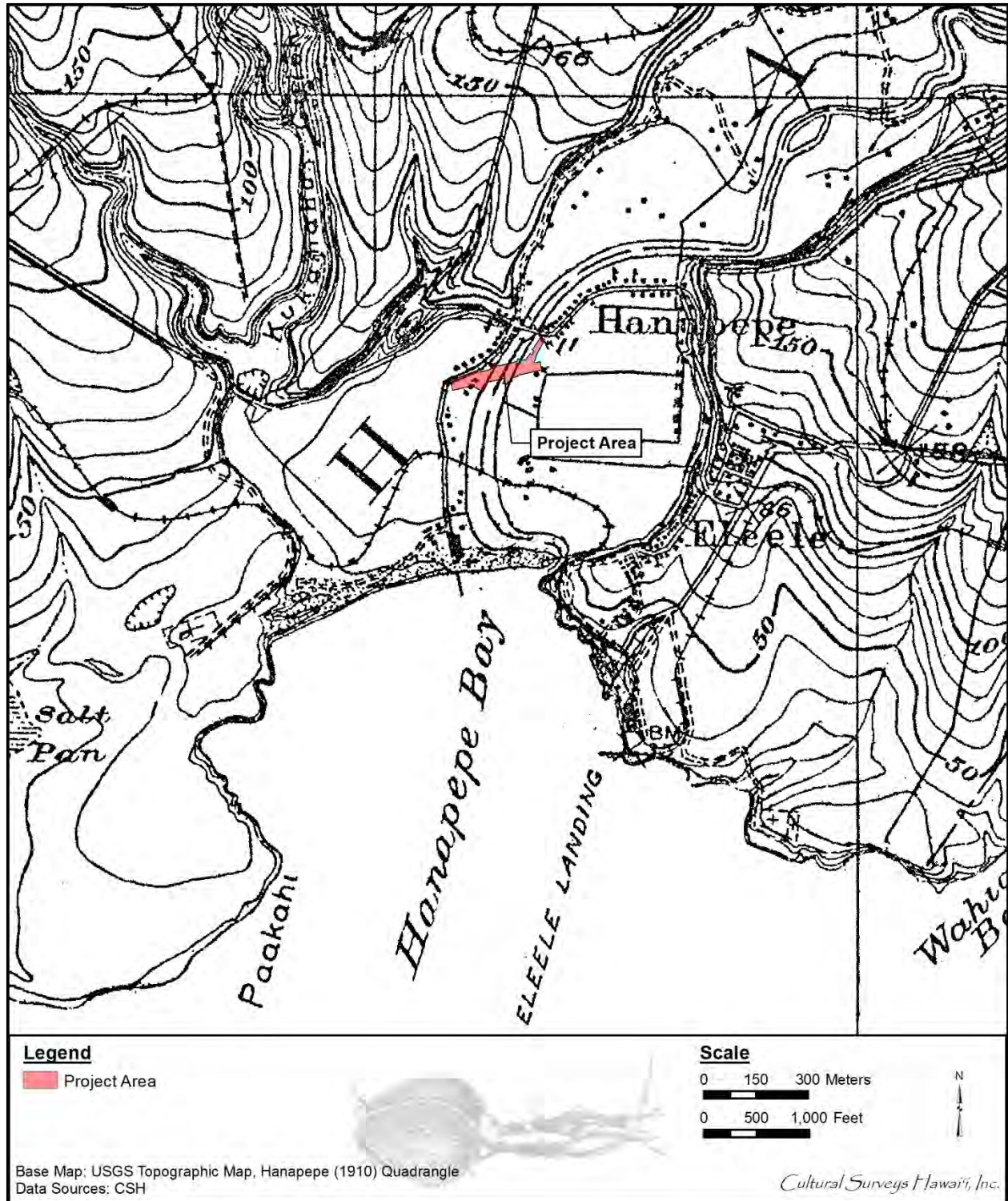


Figure 16. Portion of the 1910 Hanapepe USGS 7.5-minute topographic quadrangle depicting the Salt Pond (Salt Pan) southwest of the study area

3.4 *Oli*

3.4.1 Kaua‘i Beauty

The following chant was composed by the late Henry Wai‘au, a former *kahu* (honored attendant) at the Hanapēpē Hawaiian Church and choir director of the Līhu‘e Hawaiian Church (Halau Mohala Ilima 2015). The following *oli* is an ode to Wai‘au’s love of Kaua‘i, honoring one of the first *ali‘i* of the island, Manokalanipō, and the sweet fragrances of *mokihana* (*Pelea anisata*) and *maile* (native twining shrub; *Alyxia olivaeformis*). The chant below is from Huapala.org (2015):

<i>Hanohano Kaua‘i Manokalanipō</i>	Glorious is Kaua‘i of Manokalanipō
<i>Kihāpai pua ua kaulana</i>	A famous flower garden
<i>‘Ohu‘ohu i ka maile a‘o ka nahele</i>	Adorned with maile of the forest
<i>I ke‘ala onaona o ka mokihana</i>	And the sweet fragrance of mokihana
<i>I wili ‘ia me ka maile lau li‘ili‘i</i>	Entwined with small leafed maile
<i>Ke ‘Oala ho‘oheno o ka malihini</i>	A fragrance cherished by visitors
<i>Ha‘ina ‘ia mai ana ka puana</i>	Tell the refrain
<i>Ku‘u lei mokihana e moani nei</i>	My mokihana lei whose fragrance is wind-borne
<i>Ha‘ina ‘ia mai ana ka puana</i>	Tell the refrain
<i>Ku‘u lei mokihana poina ‘ole</i>	My unforgettable mokihana lei

3.4.2 Kaua‘i Hula

The *oli*, *Kaua‘i Hula* written by Mary Robins and composed by Johnny Noble, describes the qualities of places on Kaua‘i and pays homage to the *mokihana*, a native tree found only on Kaua‘i that is part of the citrus family:

<i>Kaulana ka inoa a‘o Kaua‘i</i>	Famous is the name of Kaua‘i
<i>Ku‘u lei mokihana poina‘ole</i>	My unforgettable garland of mokihana
<i>Kū kilakila ‘oe Wai‘ale‘ale</i>	Wai‘ale‘ale, you stand strong
<i>Me ka nani kaulana o Nāwiliwili</i>	With the famous beauty of Nāwiliwili
<i>Laua‘e o Makana kau aloha</i>	Laua‘e of Makana placed with love
<i>Me ka uapo nani a‘o Niumalu</i>	The pretty quay of Niumalu
<i>He pi‘ina ikiiki a‘o Kīpū</i>	Weary on the ascent to Kīpū
<i>Me ka wai anapanapana e kaulana nei</i>	We anticipate the famous sparking water
<i>I aloha ia no a‘o Waimea</i>	Love for Waimea
<i>Me ke one kani mai a‘o Nohili</i>	With the sounding sands of Nohili
<i>Pū‘ili ko aloha mau ku‘u poli</i>	Love is held in my bosom

<i>Honehono k oleo mehe ipo ala</i>	Gentle voice of my sweetheart arouses
<i>Heaku no wau eō mai 'oe</i>	When I call, you answer
<i>Lei ana Kaua'i i ka mokihana</i>	Mokihana garland of Kaua'i
[Huapala.org 2015]	

3.4.3 Hi'iakaikapoliopole

Hi'iaka-i-ka-poli-o-Pele ("Hi'iaka in the bosom of Pele" also known as Hi'iaka) sails the coast of Kaua'i with her sister's husband Lohi'au and her *aikāne* (friend) Wahine'ōma'o. As the party passes each *ahupua'a*, Hi'iakaikapoliopole offers a chant calling on the elements (wind and waters) of that area. Wahine'ōma'o turns to Lohi'au who is from Hā'ena Ahupua'a located on the north side of the island and asks him, "What is the name of this place we're passing?" as they navigate through large ocean swells (Ho'oulumāhiechie 2008:237). Before Lohi'au could answer, Hi'iakaikapoliopole interjected:

Ah, my friend, I am a kama'āina of this land, Kaua'i. This was the first place we stayed when we sailed from Nihoa, Ka'ula, and Ni'ihau, to reach here.

And I tell you, my friend, there are many names for this place we're going by.

From where we are sailing now on back to Hanapēpē, this is the area of high swells.

There are, throughout this side, renowned lands and their accompanying fabled winds. I should not, however, recite the names of the winds in chant form, lest we be hit by winds and storms. It would be better if I just say them.

The land is Makaweli, and the wind is the Pūnohu'ula, and it is for this place that the saying goes, 'Take provisions; the Hinana, like the fish easily caught by hand, is the wind of Pohākomo.'

And we get to Kahana, where the wind is called Kapa'ahoa. The wind at Kahana in Ko'olauloa, O'ahu is different, and it is called a Wili'āhiu.

We come to Pe'ape'a, where we will see the Pili'aloa wind. And when we pass Kekupua, we will be right outside of Mahinauli, where the wind is called Mo'oholoawāwa.

That is if the wind blows toward the sea, but should it turn toward the land, and blow that way, then the name of the wind is a Mo'oholokula.'

This plain lying inland of us in Pu'uopāpa'i, and if we see the wind stirring up the dust clouds, then that blustery wind is called a Kula'imano.

Two winds come together here. The wind of Manuahi, the Hulikīlele, joins in at one spot, where the two spin about and raise clouds of dust, like the swirling columns of dust clouds we see there on the plain.

This is Mokupapa, and from here comes a wind called the 'Olo'iawaāwaholomakani. And when we get to Hanapēpē, my friend, we shall see the twin breezes, the 'Aoaholokula and the 'Aoaholoawāwa. [Ho'oulumāhiechie 2008:237]

Section 4 Traditional and Historical Accounts

4.1 Traditional Accounts

4.1.1 Uprising of Commoners against *Ali‘i*

Three stories tell of uprisings of commoners against *ali‘i* in which chiefs were thrown over the cliffs of Hanapēpē. Wichman tells the following accounts:

First, a chief of Hanapepe lived on top of this cliff [Holo-iwi]. Each night, he demanded that an infant child be delivered to him that he would use as a pillow. Naturally, the child would cry and would awaken the chief. In his anger, he would throw the infant over the cliff. Finally, his own attendants threw him over the cliff, too.

A second story tells of a corpulent and crabby chief who had himself carried everywhere in a *manele* (palanquin) borne on the shoulders of four strong men. The chief would decide that he wanted to spend the night at a spot far up in the valley and his attendants would hurry to that place, build a house for the chief to sleep in, and prepare his food. On the way, the chief would change his mind and insist on sleeping and eating somewhere else and was very irritated because things were not ready. Sometimes he would insist on being carried up the Kō‘ula, where his carriers struggled over the moss-covered rocks, then decide to sleep at the top of the ridge above. One evening, as the carriers struggled up the cliff carrying their burden, the chief scolded them unmercifully. Finally, having had enough, the carriers threw their chief—*manele* and all—over the cliff.

[The third story is] when Kaweloleimakua—after he had killed his cousin ‘Aikanaka and had been forced to kill his foster son who had betrayed him—became obsessed with finding and exterminating the children of ‘Aikanaka and scoured the valleys looking for them. Alarmed at such unreasonable anger and obsession, his attendants threw him over the cliff. This event took place about 1700 A.D. [Wichman 1998:29]

4.1.2 The Legend of Kūkona

Wichman (2003) provides an entertaining synopsis of the *mo‘olelo* of Kūkona. This is a very ancient legend dealing with the origins of the first chiefs of Kaua‘i (Kamakau 1991), in particular the battles fought to unite the two kingdoms of Puna and Kona. These two kingdoms (i.e., what archaeologists would probably call “chiefdoms”) had been at war for a century when Kūkona was made *ali‘i nui* (ruling chief) of Puna. Makali‘inukūakawaiea was the Kona chief, and he waged war on Kūkona, only to lose when Kamapua‘a, the half-man half-pig demigod, joined the Puna forces. This victory—in addition to the marriage of Naekapulani (the daughter of Makali‘nuikūakawaiea) to Kūkona’s son (Manokalanipō)—united the two kingdoms.

While this was happening on Kaua‘i, a powerful chief from the island of Hawai‘i named Kalaunui o Hua aspired to become ruler of all the islands. He sailed from island to island taking control of Maui, Moloka‘i, and O‘ahu and then he headed for Kaua‘i. The war that ensued became known as Kawelewelewi, which can be translated as Stripping Flesh from the Bones. According

to the *mo‘olelo*, Kalaunui o Hua had more than a thousand canoes and they covered the beach of the *ahupua‘a* of Māhā‘ulepu. Kūkona allowed Kalaunui o Hua to land, knowing he would lead his men further inland. As the invading men were drawn inland, Kūkona planned his attack from the sea, ordering every canoe on the island to gather in Hanapēpē Bay. Kūkona thus lured Kalaunui o Hua farther from his canoes, appearing and disappearing on ridges, tricking the Hawaiian chief into spreading his army into a thin line. By daylight, Kūkona’s warriors attacked from the hills, simultaneously attacking from the sea so there was no escape for Kalaunui o Hua’s men. “Canoes were upset. Men were hauled into the Kaua‘i canoes by force and killed. Enemies held on to one another and drowned together. Neither side yielded until only a handful of Hawai‘i men were still alive” (Wichman 2003:51).

Although Kūkona did not plan on being the supreme ruler of Kaua‘i, he wanted peace; once Kaua‘i was unified, the focus was more on a strong political system based on *ahupua‘a* land division. This time of peace lasted for more than 500 years until the birth of two boy cousins ‘Aikanaka and Kawelo produced an unfortunate rivalry.

4.2 Early Historic Period

The earliest historical documents describing traditional life in the vicinity of the current study area generally concern Waimea and Hanapēpē. Archibald Menzies, doctor and botanist under Captain Vancouver on one of the earliest English ships visiting the Hawaiian Islands, visited Waimea in 1792 and described a grass fire burning over the plains several miles to the east (which would be in the area of Hanapēpē). Captain Vancouver first supposed it to be a signal of hostilities but was told it was the annual burning to rid the plains of the old shriveled grass (*pili* grass) and stumps so the new grass crop would come up clear and free and such practice would provide the best grass for thatching houses (Menzies 1920:32).

John Weber, an artist on Captain Cook’s third voyage to the Pacific, depicts the thatched houses and natural landscape that characterized villages of the time in Figure 17 (Handy and Handy 1972).

Though Hanapēpē is bordered by the ocean and has a large coastline, Handy and Handy stated, “Hanapepe was relatively unapproachable from the sea” (Handy and Handy 1972:268). They speculated that Hanapēpē and other areas of canyons nearby had a *kua‘āina* or inland population that did not frequent the sea. Handy and Handy (1972) believe these *kua‘āina* utilized the plentiful freshwater resources of the region to develop an abundance of *lo‘i* (irrigated terrace, especially for taro) terraces, portraying a natural landscape that was lush and distinguished by taro cultivation:

Kauai’s areas of canyons (including Makaweli, Olokele, and Hanapepe-Koula, to the eastward of Waimea) possessed in the olden days something not known elsewhere in the Hawaiian Islands except in a very few localities: the anomaly of an inland (literally backland) population which had at best but infrequent contacts with the sea. In Waimea Canyon there was an estimated terrain of about 25 linear miles of varying width along watercourses on which irrigated cultivation was practicable . . . It is characteristic of this, as of other less wild and inaccessible inland areas, that every foot of land that could be leveled by terracing above the floodwater stage, and to which a ditch could bring stream water, was utilized for taro *lo‘i*. It is said today by *kama‘aina* (native ‘old-timers’) that in these upland *lo‘i* the green-stemmed ha‘o-kea, a fast-maturing taro variety adapted to cold stream

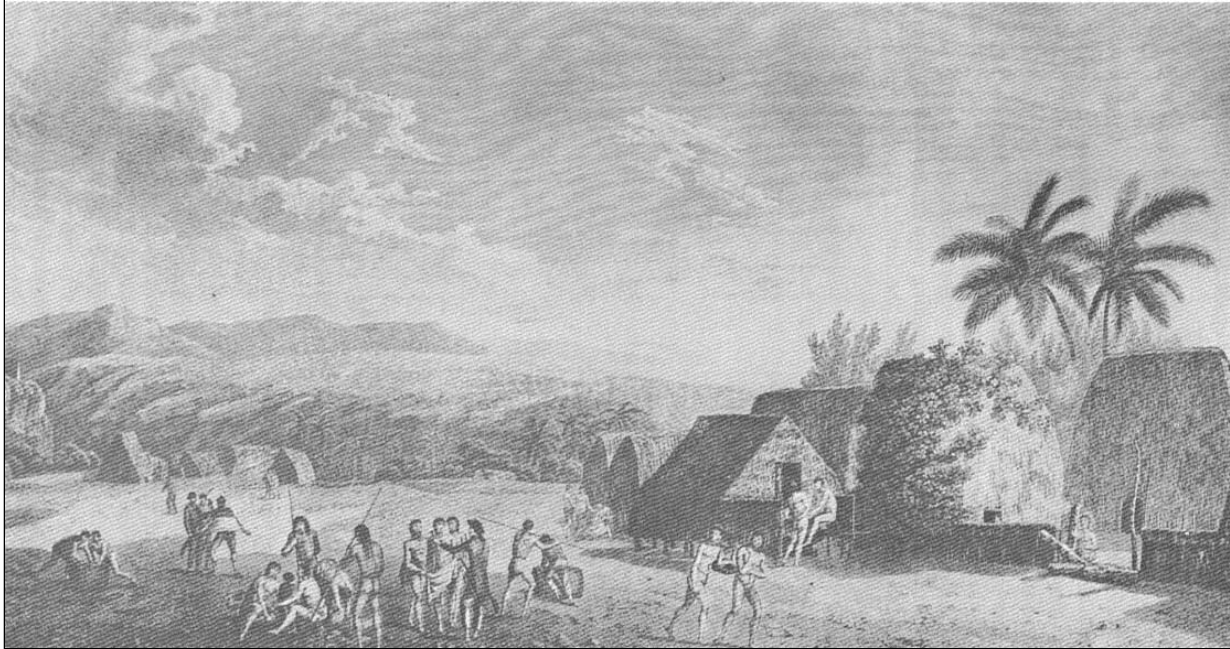


Figure 17. Village at Waimea near Hanapēpē, Kaua'i, depicting thatched houses that characterized villages of the time (Handy and Handy 1972:298)

water and shallow soil, was grown. There is also a wild taro that grows in high inaccessible places in this region, and it is called *na-kalo-a-'Ola*, 'the taro of 'Ola,' who was an *ali'i* anciently ruling all the island, and whose name appears in many of the chants of old Kaua'i. [Handy and Handy 1972:397]

The traditional practice of *pa'akai*, for which Hanapēpē is still famous today, was used by the British fur traders. Ethel Damon describes the bounty at Waimea for the early British fur traders saying, "At Waimea these hardy voyagers 'wooded and watered', and found plenty of pork and salt to cure it (Damon 1931:228)." Salt taken aboard ship at Waimea may well have come from the *'ili* of Ukula in Hanapēpē, as these salt lands were quite large. Damon describes the use of salt by Hawaiians:

Owing to the presence of several salt lakes in the Sandwich Islands, and to the advantage of the longer dry season, the natives here had formed the habit of drying out salt in its crystal form, and storing it carefully and of using it freely in the preservation of fish, as well as directly with their meals. [Damon 1931:228]

Sandalwood also appears in the early historic literature of Hanapēpē in the diary of Georg Scheffer of the Russian American Company, described in *Russia's Hawaiian Adventure 1815-1817* (Pierce 1965). Scheffer was a Russian trader who scouted out sandalwood and other trading goods for his company. He tried to convince Russia to annex Hawai'i and wanted to help Kaumuali'i recapture all the other islands, for which Scheffer would be entitled to all the sandalwood. For several years he was on good terms with the ruling chief Kaumuali'i and his high chiefs. Among the lands he was given by Hawaiian *ali'i* were the *ahupua'a* of Hanalei (renamed Schäfferthal or Scheffer's valley), land in Waimea for plantations and factories, the *'ili* of

Mahinuali in Makaweli, followed shortly thereafter by a gift of the ‘*ili* of Kuiloa in Hanapēpē. In 1816, Scheffer wrote the following:

I spent two days in Hanapepe, where I received for the Company from the chief Obana Platov [Obana Tupigea—Opana Kupikea renamed Platov by Scheffer] a village with eleven families. It lies in the province of Hanapepe on the right bank of the river Don [Hanapepe] and is called Tuiloa Platov [Kuiloa]. [Pierce 1965:185]

Scheffer renamed the chiefs, the rivers, and valleys of Kaua‘i for ones in his homeland. His diary mentions he had scouted out the entire island and had been given much sandalwood. Pierce claims Scheffer evidently relished the enmities between Kamehameha I and Kaumuali‘i and hoped to profit handsomely if the Russians would come to the aid of Kaumuali‘i. Scheffer stated in his diary that he did not care what the islanders did because this “island belongs to the Russian American Company.” Scheffer planned, while cutting sandalwood, to plant new plants and create a permanent supply of sandalwood. He wrote about his ideas of agriculture and noted that, “Cotton should be Russia’s main objective in the Sandwich Islands” as it “yields in a short time more return for a small expenditure and effort than all the fur trade on the Northwest coasts.” He wanted to import people from Hindustan, Africa, or China for their knowledge of how to grow and process it, “so as to teach the Russians, Aleuts, and the natives” (Pierce 1965:191). Scheffer put these ideas to practice as stated a month later in his diary records:

[November] 30 I set out for Hanapepe, inspected the estate of Platov on the river Don, and found it extremely rich in taro fields. I ordered the dry land planted into cotton, tobacco, maize, and also transplanted here sufficient orange, lemon, and olive trees. I delivered there a number of brood sows and assigned two old Aleuts as watchmen. [Pierce 1965:187]

And later:

[December] 23. Taboo, The wives of all the chiefs visited me today. The queen’s sister Taininoa, who previously gave the company land, today transferred also the valley of Mainauri, while Queen Monolau, whom I cured of illness, presented me with land in the Georg (Kainakhil’) Valley in the Hanapepe province. I gave her a piece of silk material. [Pierce 1965:192]

The grant from Chief Obana Platov (Opana Kupikea) for “Tuiloa on the River Don” and “Mainauri” and “Georg” are both dated 1 October 1816 (Pierce 1965:80). “Georg” is described as “a large piece of land nine versts long and fifteen wide between the port of Waimea and Hanapepe, along the seashore where one could gather a great deal of salt” (note: 1 verst = 0.66 miles). This description seems to indicate the area included the ‘*ili* of Ukula, which is southwest of Hanapēpē Bay. Pierce believes Mainauri and the salt land may be in Makaweli, ‘*ili* of Mahinuali, but these salt lands may have included the ‘*ili* of Ukula. The section of salt lands which remains today has been preserved as the Salt Land State Park in Hanapēpē.

In a 1 January 1817 entry, Scheffer talks enthusiastically about the high quality of the cotton he has grown. He notes that taro and maize are two important Sandwich Islands crops that “are unrivaled as foodstuffs, and extremely suitable for transport and for prolonged storage” and he expects a high return of a new crop, little grown in the Islands before his time—tobacco—which is of far better quality than Russian snuff tobacco. Another fortune-making venture he foresees is

for salt, which is plentiful in the Islands. Sugar in the Islands, he says, “is of a height and quality which I have never seen anywhere else.” Scheffer writes of the promise of the fruit of the land:

The oil nut (*kukui*) brings no small return. Grapes grow twice in a year; I have planted enough of one kind which if carefully prepared ought to make wine which should surpass Madeira. I need not mention the fruits of the bread plants, pineapples, coconuts, oranges, lemons, bananas, melons, etc. These items will bring no small price and if correctly handled can upset in one blow the trade of the English and Americans in China, etc.; of this I am convinced. [Pierce 1965:196]

The American traders felt threatened by Scheffer and plotted to put an end to his empire. Edward Joesting's version of the rivalry in 1822 between Scheffer, the Americans, and King Kamehameha, notes the Americans spread word that America and Russia were at war. Scheffer rushed from where he was staying in Hanapēpē to Waimea to protect his ship. The Hawaiians and Americans made him leave Hawai'i immediately without allowing him to take any of his possessions (Joesting 1984:84). Shortly after Scheffer departed, the Ruggles, a missionary family, moved eastward from Waimea in 1822 to establish a mission station at Hanapēpē (Kauai Bicentennial Committee 1978:33). Damon describes the building of housing for these missionaries as “small houses of rough stone laid up in mud mortar were built for the white families, a cellar being a requirement for each dwelling” (Damon 1931:252).

During the early historic period, the Hanapēpē-Wahiawa area was the setting of a battle over control of Kaua'i. This battle was part of a wider civil conflict known as the “Kaua'i Rebellion,” a last ditch effort by supporters of the Kaua'i Island chiefs to resist takeover by Hawai'i Island chiefs. In 1824, Kaumuali'i, the ruling chief of Kaua'i and Ni'ihau, became gravely ill. Nearing death, Kaumuali'i declared “Our 'son'” to be his successor and said: “Let the lands be as they are; those chiefs who have lands to hold them, those who have not to have none” (Kamakau 1961:265). Following his death, Kahalai'a, nephew of Kaumuali'i and chief from Hawai'i Island, was announced as the new ruler over Kaua'i and Ni'ihau. However, the people of Kaua'i, both chiefs and commoners, expected one of Kaumuali'i's sons, Keali'iahonui or Humehume, to be named as successor.

Kahalai'a traveled to Kaua'i and settled at the former Russian Fort at Waimea. Soon after, a hostile sentiment spread among the people of Kaua'i over being ruled by an *ali'i* (chief) from Hawai'i. During this uneasy period, the missionary Hiram Bingham traveled to Wahiawa, leaving the following account:

I visited the disaffected George [Humehume] at his estate—the little secluded Wahiawa. It was a small valley, running back from the sea to the mountains, containing some twenty small habitations, about a hundred souls, and some hundred acres, very little cultivated, yielding a scanty amount of the common productions of arum, bananas, cocoanuts, potatoes, sugar-cane, squashes, melons, and wild apples. At the foot of this valley, I found George living much in the original native style, in a dingy, dirty, thatched house at the sea-side, just where the surf washes a small beach between two rocky cliffs. [Bingham 1847:229]

The Kaua'i warriors, led by Humehume, subsequently rebelled and attacked the fort at Waimea, where the Hawai'i chiefs had gathered. Armed with guns, the men of Hawai'i were able to hold

off the rebels until the arrival of reinforcements from O'ahu. More than ten ships later arrived (Kamakau 1961):

On August 8 [1824] the battle of Wahiawa was fought close to Hanapepe. The Hawai'i men were at Hanapepe, the Kaua'i forces at Wahiawa, where a fort had been hastily erected and a single cannon (named Humehume) mounted as a feeble attempt to hold back the enemy. In the evening there was an advance made, but the forces of Hawai'i retired to Hanapepe for the night . . . Large numbers of Kauai soldiers had gathered on the battleground, but they were unarmed save with wooden spears, digging sticks, and javelins. Many women were there to see the fight. The men acted as if death were but a plaything. It would have been well if the gods had stepped in and stopped the battle. No one was killed on the field, but as they took to flight they were pursued and slain . . . For ten days the soldiers harried the land killing men, women, and children. [Kamakau 1961:268]

The battle of Wahiawa was later known as the “‘Pig eating’ (‘*Aipua‘a*) because the dead were left lying for the wild hogs to devour” (Kamakau 1961:233). The men, women, and children left for wild animals to feast upon were not allowed a burial. Following the battle it was also noted,

A great deal of property was taken, among other things horses and cattle, which had become numerous on Kauai because the foreigners had given many such to Kaumuali'i . . . After the battle the chiefs all came together and Kalanimoku redistributed the lands of Kaua'i . . . The last will of Kaumuali'i, who had the real title to the lands, was not respected . . . It was decided that Kahalai'a should not remain as ruler, but the islands be turned over to the young king [Kauikeaouli, Kamehameha III], and Kaikio'ewa was appointed governor and Kahalai'a recalled . . . The lands were again divided. Soldiers who had been given lands but had returned to Oahu had their lands taken away, chiefs who had large lands were deprived of them, and the loafers and hangers-on (*palaualelo*) of Oahu and Maui obtained the rich lands of Kauai. [Kamakau 1961:268–269]

This defeat of the Kaua'i chiefs marked the end of armed uprisings on Kaua'i against the unification efforts of the Big Island and Maui chiefs. Following the rebellion, queen regent Ka'ahumanu, as she did elsewhere, ordered the old gods, idols and sacred *pōhaku* of Kaua'i to be destroyed. [Wichman 1998:28]

4.3 The Māhele and the Kuleana Act

Prior to 1848, all land belonged to the *akua* (gods), held in trust for them by the paramount chief and managed by subordinate chiefs. In the mid-1800s (1845 and 1846), Kamehameha III decreed a division of lands called the Māhele, which divided land for private land ownership in Hawaiian society (Chinen 1958). In 1848, lands were divided into three portions: crown lands, government lands, and lands set aside for the chiefs. Individual plots, called *kuleana* (Native Hawaiian land rights) awards, were granted within these divided lands to native inhabitants who lived on and farmed these plots and came forward to claim them. The chiefs and *konohiki* (headman of an *ahupua'a* land division under the chief) were required to pay a commutation fee for their lands, usually about one-third the value of any unimproved lands. Awardees usually

“returned” a portion of the lands awarded to pay the commutation fee for the lands they “retained.” The returned lands usually became government lands (Chinen 1958:13).

The Kuleana Act was legislated in 1850, allowing *maka'āinana* (commoners) to own land parcels (fee simple) that they were currently and actively cultivating and/or residing. In theory, this set aside hundreds of thousands of acres as potential *kuleana* parcels; in reality about 10,000 claimants obtained approximately 30,000 acres. The *konohiki*, 252 chiefs, divided up about a million acres. Many Hawaiians were disenfranchised by these acts (Cordy et al. 1991). All Kaua'i claimants for land on Kaua'i presented their claims in the year 1848. Supporting evidence for the claims is found in the Native and Foreign Testimony during the years 1850-1852.

In Hanapēpē Ahupua'a, 92 claims are listed, 66 of which were awarded (Soehren 2010). Land use information provided in the LCA documentation indicates settlement within the Hanapēpē Valley focused on wetland taro cultivation, with ample irrigation from the Hanapēpē River. Approximately 80 *kuleana* claimants listed 131 *'āpana* (sections, lots, or pieces) in use. A total of 56 of the 131 *'āpana* or *'ili* are located along the lower Hanapēpē River bank. These claims mention 528 *lo'i* or taro plots (including 200 claimed by Opae alone, LCA 10458), 29 *kula* (where dryland crops like sweet potatoes were raised), 46 *pāhale* or house lots (many noted as being in villages), ten *mo'o* (land section smaller than an *'ili*) with crops unspecified, ten pastures or *mo'o* specified as pastures, and 16 “other,” described as including gardens, pastures, *loko* (fishponds), a pigpen, and salt lands at Ukula. The majority of *kuleana* lands were located along the lower Hanapēpē River banks and floodplain within the *'ili* of Kaauwaekahi (which includes those of Kalapawai).

Because of the 1827 Kaua'i rebellion, Hawaiians from other islands were awarded lands in Waimea District and in Hanapēpē. Hanapēpē Ahupua'a was part of Kamehameha III's private lands. Eight claimants mention receiving their land at the time of the rebellion. *Ali'i* of the Kamehameha line received Hanapēpē lands at the time of the Māhele Awards in 1848. Queen Kapi'olani received the *'ili* of Kuiloa; LCA 7712 awards to Mataio Kekuanao'a, Governor of O'ahu and Kaua'i, the *'ili* of 'Ele'ele (1,071+/- acres). Kekuanao'a was of the Kamehameha line, a descendant of Lono i Kamakahiki, he married Pauahi and had a daughter, Ruth Keelikolani (McKinzie and Stagner 1983:40). Later he married Kina'u, daughter of Kamehameha I and at this time became Governor of O'ahu. He was also the father of Kamehameha IV and V and Victoria Kamamalu (McKinzie and Stagner 1983:95). He had large land holdings on Hawai'i, O'ahu, and Kaua'i. LCA 8559B is titled to William Lunalilo (later King Lunalilo) for the *'ili* of Manuahi (867 acres).

Māhele Award (M.A. 55) to Paniani (from the Big Island) is for half of the *'ili* of Koula. Two other such awards are listed: M.A. 19B to Kanehiwa for the *'ili* of Kukuilolo and M.A. 29 to Kanunu which is subsequently given in Grant 1151 for half of the *'ili* of Punalau. The majority of claimants profess to have occupied their places of residence or cultivation from 1839 or before (1839 = time of Kaikioewa). Fifteen claimants date their claims to the time when Kaumuali'i was still alive (pre-1824).

Joesting (1983) dates Eliza Sinclair's purchase of Makaweli to 1824 and notes the purchase of Hanapēpē came soon after. The LCAs present testimony of cattle enclosures and sugarcane cultivation by 1848.

Francis Gay's manuscript (1873) has a section where he describes the “*kama'āina*” living in Hanapēpē and he notes some who came originally from the Big Island. This section also provides additional confirmation that by 1873 cattle were being raised in various places in the valley:

J. Kauai and Kamaku, his wife, and Waialoe her mother, they came from Kona, Hawaii. That is, Waialoe was born in Kona of Awahua (k) and Nukee (w) and came to Honolulu as a child and was raised by the chiefs and married Paaniani (k) [Mahele Award 55] and came to Koula with their daughter, then married to J. Kauai of Hana, Maui. (This was copied from old note book) . . . Paanianiani was given the ili of Koula which brought them to Kauai . . . a tall good looking man called Pamaiaulu . . . His wife, Walia, was with him, a tall good looking woman from Laaloa, Hawaii. She died not long after their return to Laaloa and he married again the widow of Makahiaa, Umi (w). [Gay 1873:53–54]

In March 1818, about 150 natives were garrisoned at the fort at Waimea (Corney 1896:88–89). For their subsistence, these government soldiers were allowed use of cultivatable lands nearby—these were the fort lands. One of these soldiers, Commander Paele, claimed land in Waimea, Makaweli, and Hanapēpē. “Though there were only sixteen soldiers at the fort, including Paele, at the time of the Mahele [1848-1852], the previous taking of lands at Kaho'omano may have been the impetus for establishing fort lands elsewhere” (Ida and Hammatt 1993).

Paele describes one claim in Waimea, three in Makaweli, and one in Hanapēpē (which shows on maps in three pieces).

The missionary Reverend George B. Rowell appears to be the only westerner to receive an LCA in Hanapēpē. He is also listed as the scribe for many of the *kuleana* claims in Hanapēpē. Frazier (1979:10) noted Mr. Rowell's “solicitude for the Hawaiian claimants of land, in order that their claims might be approved by the land commission,” in contrast with several cases where Governor Kanoa destroyed claims that were on dirty paper or not properly written. The Boundary Commission (1873) reports and survey maps note Rowell's lands were located in an area called Hanapēpēluna, north of 'Ele'ele and near the border of Wahiawa Ahupua'a.

Another missionary named in the historical literature as living in Hanapēpē in 1822 was Samuel Ruggles, who had a stone house built for him with a cellar. This house was completely ransacked during the rebellion. However, Ruggles had been transferred to Hilo before the 1824 rebellion (Joesting 1984:109).

In addition to a Protestant missionary, Hanapēpē LCAs list a Catholic teacher (presumably a Hawaiian) named Hii claiming land. The Native Testimony recounts that Hii came by his lands through marriage and through his mother (Native Testimony 1847:10332 70-71vll; OHA 2011). Nearly a half century later, historic maps depict a Catholic church within the 'ili of 'Ele'ele.

A total of five *kuleana* claims are situated in the immediate vicinity of the current study area. Figure 18 shows the LCAs near the current study area and Table 1 describes the *kuleana* claims in the immediate vicinity of the study area including the Land Commission Award numbers, the name of the claimant, the name of the land division or 'ili in which the claim was being made, the claim and land use of the claim, and what was awarded to the claimant. Appendix A illustrates Land Commission Awards awarded in the vicinity of the study area.

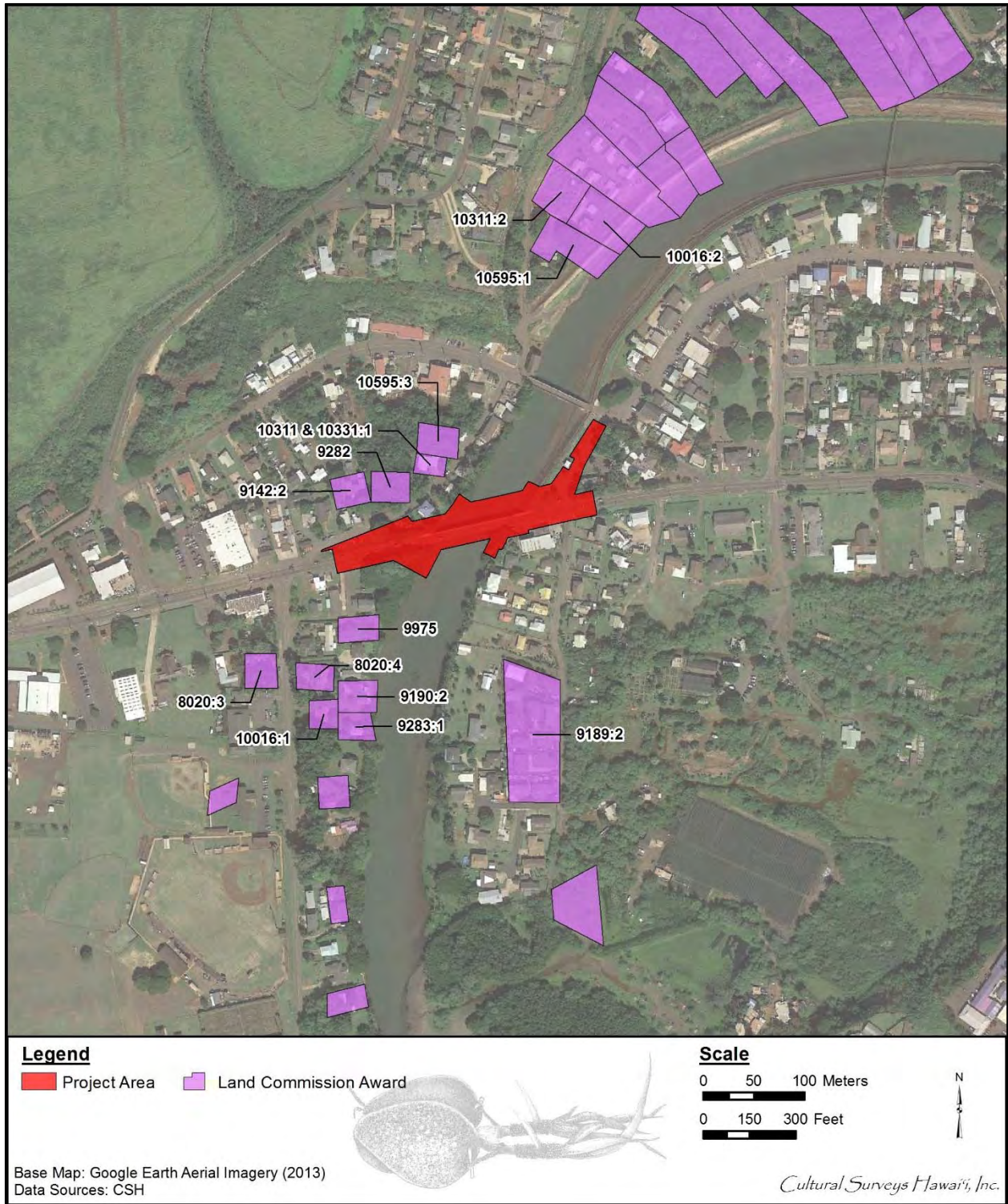


Figure 18. Aerial photograph showing Land Commission Awards in the Hanapēpē Ahupua'a in the vicinity of the study area (Google Earth 2013)

Table 1. Māhele Land Claims in Hanapēpē Ahupua‘a in the Vicinity of the Study Area

LCA #	Claimant	‘Ili	Claim/Land Use	Award
9142	Kapekue	Kaauaekahi	Three <i>lo‘i</i> , <i>kula</i> , and house lot	Two ‘āpana
9282	Kapoanu	Kaauwakahi	<i>Kīhāpai</i> (cultivated patch), <i>muliwai</i> (river), and house lot	One ‘āpana
9975	Lihue/Poopuu	Kaauwaekahi	Three <i>lo‘i</i> and house lot	Two ‘āpana
10311 and 10331	Namoku	Kaauwaekahi	<i>Lo‘i</i> , ditch, <i>kula</i> , and house lot	Two ‘āpana
10595	Puakala	Kaauaekahi	<i>Mo‘o</i> , four <i>lo‘i</i> , <i>kula</i> , and house lot	Three ‘āpana

4.3.1 Boundary Surveys

In the 1870s, the Boundary Commission (1873) was called upon to survey the four largest ‘*ili* within the *ahupua‘a* of Hanapēpē. The Estate of Queen Kapi‘olani requested the survey of the ‘*ili* of Kuiloa (1870); Eliza Sinclair the ‘*ili* of Koula (Ko‘ula) (in 1873 after she bought it from the estate of Victoria Kamamalu); C.R. Bishop the ‘*ili* of Manuahi for King Lunalihō (1873), and John Dominis the ‘*ili* of ‘Ele‘ele on behalf of his late Majesty Kamehameha V (1873). Finally, John Dominis also requested surveys for the entire *ahupua‘a* of Waimea, Hanapēpē, Anahola, and Hanalei as they were Crown Lands (1873). James Gay conducted the survey, but gives no overall acreage for Hanapēpē as the other aforementioned ‘*ili* are within this larger area. Within Hanapēpē there are 21 smaller ‘*ili* in the *ahupua‘a* (Boundary Commission 1873).

4.3.2 James Gay, Surveyor

James Gay, the boundary surveyor mentions several caves by name. He uses the following trees in his surveys (1875): a tamarind, a mango, a Pride of India, a *wiliwili* (*Erythrina sandwicensis*), several *koa* (*Acacia koa*), and a *kukui* grove. He also mentions Maloku Heiau. It is in these boundary surveys that we find many names of rocks or *pōhaku* and Mr. Rowell’s stone wall. He also describes rice fields in Kuiloa and a rice plantation near Keawe’s *kuleana* in ‘Ele‘ele, but he says not much of the land is suitable for rice (Gay 1875).

4.4 Mid- to Late 1800s

4.4.1 Population

A map by Coulter (1931:14) (Figure 19) indicates the population of Hanapēpē and Wahiawā ca. 1853 “was concentrated chiefly on the lower flood plains and delta plains of rivers where wet land taro was raised on the rich alluvial soil.” The map also indicates an estimated population of approximately 1,000 people in the Hanapēpē area. As presented below in Section 4.4.1.1, Bingham’s (1847) accounts of Hanapēpē estimated that Hanapēpē Valley had about 700 inhabitants in 1847.

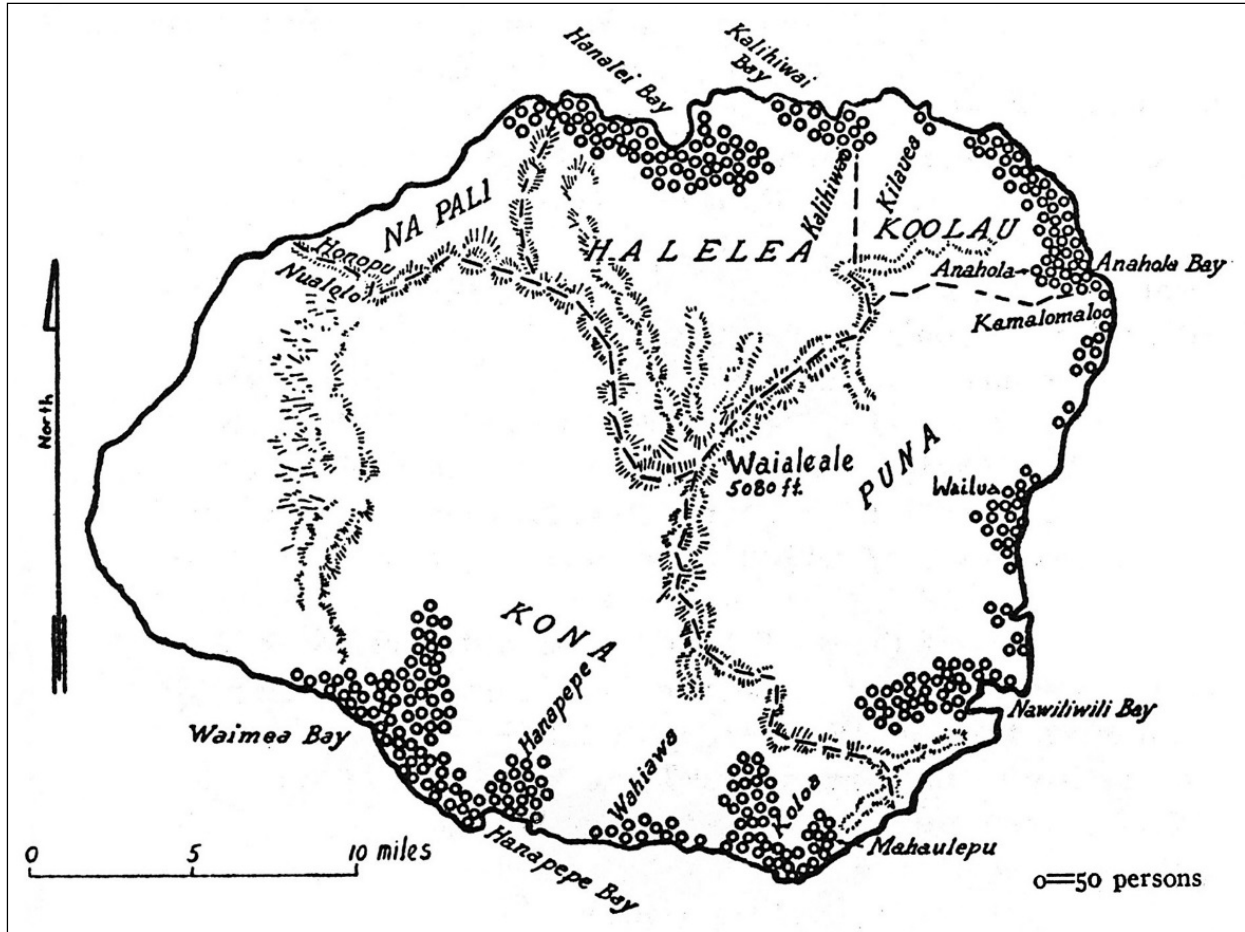


Figure 19. Map showing population estimate for Kaua'i in 1853 (Coulter 1971:16)

4.4.1.1 Early Voyager Descriptions of Hanapēpē Valley

The missionary Hiram Bingham described Hanapēpē in 1847:

[Hanapēpē] lies six or seven miles east of Waimea. It is a pleasant, fertile, well watered valley, about 175 rods in width, along a mile or two from the sea-shore, diminishing in breadth and increasing in depth, as it recedes toward the mountains, till it becomes a very deep and narrow ravine, curving between precipitous and lofty cliffs, and grass-covered hills. A beautiful stream from the mountainous interior leaps down from high basaltic rocks, and forming a high cascade at the head of the valley, flows through it to the sea. Like the Waimea River and others at the islands, it is, at its mouth, obstructed by sand, by which the surf seems incessantly endeavoring to prevent its entrance into the ocean. Where it is thus retarded in its flow, it is from ten to twenty rods in width and three or four feet in depth, where we cross it in a canoe, or on horseback. It escapes by a narrow channel, where it cuts through a sand-bank.

For the first half mile from the sea, the valley seems sterile, and is little cultivated, but has a pleasant grove of cocoanut trees. The rest of the valley, more fertile and more cultivated, is sprinkled with trees and shrubs, embracing a few orange trees, and being walled up on the east and west by bold, precipitous bluffs, rising higher and higher toward the mountains, from fifty feet to fifteen hundred, appears from one of the palis, like an extensive, well-watered plantation, interspersed with kalo beds and one hundred and forty cottages, and furnishes employment and sustenance to some seven hundred inhabitants. The immense and irregular precipices shut in by each other toward the interior, obstruct the vision of the spectator looking up the valley, but beyond the pleasant opening towards the sea, the eye reaches the distant line where the ocean seems to meet the sky.

Near one of these palis, about a mile from the ocean, Mr. Ruggles chose his station and built a temporary cottage, had a house of worship erected, and opened a school, with the expectation of having a preacher from America stationed there permanently . . . Here, for a time, under Kupihea and Kiaimoku, the two chieftains of Hanapepe, Mr. Ruggles, with his wife and two children, resided as the shepherd of the valley, esteemed by many of its seven hundred inhabitants and of the ten thousand of the island. [Bingham 1847:218–219]

In 1849, William D. Alexander, head of the Hawaiian government survey between 1850 and 1869, toured Kaua'i and in his journal he describes his journey to see Hanapēpē Falls.

The Kauai Bicentennial Committee's entry for May 23 states the following:

This morning about ten o'clock we started in company with Dr. Smith's family for Hanapepe. We arrived at noon at the Mission house on this side of the valley. After getting a hasty dinner we set off with Dr. Smith to see the well-known Hanapepe falls. We rode about a mile along the edge of the valley, & then descending a high & steep pali we rode as far up the valley as was practicable for horses. We then hitched our horses, & went on foot. We had to cross the stream 8 times on our way to the falls. The scenery was grand, & beautiful. The sides of the valley were from

300 to 1000 feet high, now rising into abrupt precipices, & now clothed with the richest green. In crossing the stream in one place, I slipped off a rock into deep water, & got a complete ducking. As however I kept warm by exercise, it did me no injury. The scenery in the upper part of the valley is enlivened by many beautiful little cascades, dashing & foaming down its sides. The principal waterfall is at the head of the valley, 4 or 5 miles from the sea. It was concealed by the turn of the valley till we were very near, when it suddenly burst on our view. The stream pours in a jet for 20 feet, when it strikes the rocks, & spreads out like a fan the rest of its descent. The whole fall is about 200 feet in height. We got back to the house about 50-o'clock, & determined to pass the night there. I passed a comfortable night except that I was terribly stung by fleas. [Kauai Bicentennial Committee 1978:133]

Hanapēpē Falls also attracted a William T. Brigham, Bishop Museum's founding director and a botanist visiting Kaua'i in 1864 and 1865. He wrote in his journal:

Tuesday morning I set out for Hanapepe Falls. The path led down the side of the valley over ridges of deep red earth with blocks of imbedded basalt. The walls of the valley were nearly perpendicular, and from four to five hundred feet high, exhibiting in many places an irregular prismatic structure. In one place this was very beautiful where a projecting point had been naturally terraced, the portions between each flow being covered with grass and convolvulus vines which formed a drapery over the cold dark lava. In some places a prismatic vein had been broken through by an irregular mass of clayey lava running across the direction of the valley. The stream was very rocky and as the valley was very narrow and the wall almost perpendicular, the path went from one side to the other and thus crossed the stream eighteen times. Ohias and bananas were abundant; several dykes crossed the walls at various angles, little canyons on either side opened into the gorge showing beautiful cascades at their upper end in almost every variety of form. The Falls as I measured them, were 326 feet high, and I should judge the walls on either side were at least five hundred. The water was not a large stream but fell against the rocks in such a way as to have a very beautiful effect. A branch joined the river just below the Falls, and near by were some fine orange trees. A mist came down in the afternoon. Lobelias were abundant on the hillside; ducks and herons were plentiful, and the latter had carried many seashells onto the rocks to eat; small fish were in the stream which no doubt were food for these birds. [Lydgate 1991:149]

In early correspondence Abner Paki, father of Queen Lili'uokalani, states in a letter to the Minister of Interior that Hanapēpē belongs to the King and that the *akule* (Big-eyed scad fish; *Trachurops crumenophthalmus*) is the taboo fish (letter of 20 April 1852). According to Titcomb this fish is eaten raw, broiled, or cooked in a *ti* (*Cordyline terminalis*) leaf bundle placed over the taro in the *imu* (underground oven), is good for *palu* which she says is used in a relish, and is also a favorite fish for drying (Titcomb and Pukui 1972:62). In discussing fishing taboos, Mary Kawena Pukui noted that "Summer was the time when fish were most abundant and therefore the permitted time for inshore fishing. Salt was gathered at this time, also, and large quantities of fish were dried" (Titcomb and Pukui 1972:14) and she elaborates saying that when the *kahuna* (priest, sorcerer) had decided conditions were favorable for fishing "For several days it remained the right of the chief to have all the sea foods that were gathered, according to his orders, reserved for his use, and

that of his household and retinue. After this, a lesser number of days were the privilege of the *konohiki*. Following this period the area was declared open (*noa*) to the use of all" (Titcomb and Pukui 1972:17).

Another item of traditional Hawaiian practice found in archived correspondence is fishing rights. A Mr. Isaac Hart applied in 1866 for coastal land and rights to include the fishing boundaries for which he offered to pay \$300. He was apparently granted this right; in 1870, J. and F. Sinclair, having leased or bought most of the District of Kona District (Kaua'i) by this time, wrote to Prime Minister J.O. Dominis seeking redress since they believed their original lease included these fishing rights.

Fishing rights belonged to the *konohiki* and could be used by him and often his tenants. Chapter III of the Laws of 1840 described free and prohibited fishing grounds:

His Majesty the King hereby takes the fishing grounds from those who now possess them from Hawaii to Kauai, and gives one portion of them to the common people, another portion to landlords, and a portion he reserves to himself.

These are the fishing grounds which His Majesty the King takes and gives to the people: the fishing grounds without the coral reef, viz: the Kilohee grounds, the Luhee ground, the Malolo ground, together with the ocean beyond.

But the fishing grounds from the coral reef to the sea beach are for the landlords and for the tenants of their several lands, but not for others. But if that species of fish which the landlord selects as his own personal portion, should go on to the grounds which are given to the common people, then that species of fish and that only is taboo. [Kosaki 1954:31]

In *Sandwich Island Notes*. By a *Haole*, an early traveler to Hawai'i, George Bates, spent the year in 1853 visiting various islands and wrote his book which "purports to give an account of what the author saw and heard" (Kuykendall 1968:1:419). Bates describes that, "Hanapepe Valley was dotted with numerous plantations of taro, small cocoa-nut groves and native dwellings" (Coulter 1931:15).

By 1864, in a letter from Valdemer Knudsen, an early Norwegian settler in Waimea, Kaua'i, to J.O. Dominis, Prime Minister for King Kamehameha III, Knudsen requested the right to raise the rents on Hanapēpē leased lands "since the King owns little *kalo* (taro; *Colocasia esculenta*) or rice land in Waimea, but a lot in Hanapēpē, and there is not one idle patch in Waimea, but only a few are planted at Hanapēpē" and he mentioned that "the people there hula from morning to night" (Archive correspondence Hanapēpē 1 November 1864 in Creed et al. 1995). In 1865, Knudsen was appointed *konohiki* of Hanapēpē Ahupua'a and a year later he leased Hanapēpē from the King for \$500 a year for 25 years (Archive letter 9 July 1866 in Creed et al. 1995). Knudsen's complaint not only emphasizes that a substantial amount of *kalo* and rice land existed in Hanapēpē, but also indicates the practice of *hula* was being seriously pursued, and by some sizeable number of persons despite missionary efforts to discourage it. Carol Ramelb, in her small pamphlet on the hula, records that for Hawaiian people "[b]efore a written language, the hulas and the chants accompanying them were their history and poetry" (Ramelb 1976:3). She also notes that after the coming of Christianity "In distant villages, some continued to dance behind closed doors" (Ramelb 1976:5). Hula was not officially revived until the 1870s during King Kalākaua's reign. Another

impetus for its practice, besides the traditional religious commitment, was for the entertainment of sailors of the whaling and trading ships. The roadstead of Waimea, as a nearby center of shipping interests, may have helped keep the traditions alive at Hanapēpē; the presence of strong Hawaiian traditionalists within the region, may have also contributed to the perpetuation of the hula. Under the cultural influence of King Kalākaua, hula became “seen as the lone surviving art of an ancient people” (Ramelb 1976:6). The people of Hanapēpē helped to keep the art alive.

Eric Knudsen, son of Valdemer Knudsen, mentions passing by Hanapēpē on his first trip around the island of Kaua'i in 1895. “We rode through the Makaweli Plantation and soon entered the beautiful valley of Hanapēpē and the town of the same name—in those days it was only a small village” (Knudsen 1991:150).

4.4.1.2 Sinclair-Robinson-Gay-Knudsen Clan Records

Because the Sinclair-Robinson-Gay-Knudsen clan in early historic times owned most of the district of Waimea and began ranching and sugarcane plantations throughout the area, a brief family history here describes their ties to the area.

Settlers in New Zealand, the Sinclair family was comprised of Captain Francis Sinclair, his wife Eliza, oldest daughter Jean and her husband Captain Thomas Gay (previously a widower with a 5-year-old son) and their four children, a second daughter Helen (married but separated from Charles B. Robinson) and her son Aubrey, their youngest daughter Annie, and two other sons, Francis and James Sinclair. The family originally came from Scotland. Captain Sinclair and the eldest son were lost at sea sometime while the family was living in New Zealand. Mrs. Eliza Sinclair and all the rest of the family decided to immigrate to British Columbia but then moved on to Hawai'i in 1863. They bought the island of Ni'ihau for \$10,000. The youngest daughter, Annie, married Valdemer Knudsen, living across the channel at Waiawa and Eliza Sinclair, “wanting to provide an inheritance for her two elder daughters and their children,” bought the *ahupua'a* of Makaweli in 1865 from Victoria Kamamalu for \$10,000. Makaweli had become the property of Kamehameha at the time of the 1824 Kaua'i revolt. At the time of the Māhele it was the property of Victoria Kamamalu. After they bought Makaweli, the Sinclair clan bought the adjoining district of Hanapēpē (Joesting 1983:190–199) and by 1873 had the entire Kona district in their possession; they still own much of the same land today. By 1873, the young men of the family were beginning to raise cattle. This remarkable clan was known for its love of literature, botany, art, music, exploring, and recording information about the Hawaiian Islands so it comes as no surprise that the early preservation of place names, stories about places, and *kama'āina* was done by one family member, Francis (Francois) Gay.

Gay describes the uplands of Hanapēpē and Makaweli (in 1873):

The road to Pulilehua came up to Kuapoo through Kaluaalaea Valleys, to Halulu and Keolomea and up to Olonawehi Ridge. Other road was on the other side of Manuahi Valley, up Kawaipuna to Kuahua (junction of Kepani and Manuahi Ridges) to Makaopihi and to Puulehua, to the three bird lands of Makaweli, Manuahi and Koula. Kamakaopihi or Kealaokaopihi was on the west side of Makalalua. At mauka end of ridge notches were cut in the soil of the cliff, making steps down to the saddle of said ridge. Mauka of this was a water filled hollow where people camped in going to Puulehua by way of Nakalalua. [Gay 1873:28]

4.4.2 Other Information about Early Hanapēpē

Wendell Clark Bennett's survey of Kaua'i in 1928-1929 found evidence of habitation in the upper canyon area and its side valleys including house sites, caves, terraces, burials, an 'ulu maika (Hawaiian bowling) court, and 'auwai (ditch) (Bennett 1931:108–110).

Francis Gay mentions Kapuhili Cave. In James Gay's survey of 'Ele'ele, he mentions there is a cave at the southeast boundary between Hanapēpē and Wahiawa. Robert L. Spear located a cave in his archaeological study (Spear 1992) up in the valley but the map shown in his work does not seem far enough into the *ahupua'a* to be in the 'ili of Kō'ula where Francis Gay's Papoahaku caves are, nor as far as Poakua cave, which Gay describes as on a ridge looking into Manuahi Valley.

James Gay, the boundary surveyor, also mentions a cave named Nihowana, near the boundary of Keawe's *kuleana* and a cave called Heana near the north corner of Kuiloa.

Francis Gay mentions several trails going *mauka* into the mountains and a government road is mentioned in several LCAs and shown on early maps. This government road is seen on early maps in its customary location near the shore. Before the twentieth century, the Hanapēpē River had to be forded when traveling between Waimea and the east. But by 1919 several Hanapēpē River bridges are apparent on maps (Figure 20), including the railway bridge. Trails into the mountains, to Halulu and Hanapēpē Falls, are also present on the early maps.

Handy and Handy explain that inhabitants of the far inland areas were called *kua'āina* or "backlanders." They theorize they had little or infrequent contact with the coastal area and its resources (Handy and Handy 1972:397–398). It appears from the Gay map (1873) that the inhabitants were familiar with the uppermost reaches of the valley as each nook and cranny has a name.

During Cook's Third Voyage visit to Waimea, Kaua'i (January 1778), besides inspecting a large *heiau* in Waimea, he describes a feather cape and helmet he received and took to England; today they are in the British Museum in "as good a state of preservation as the day they were obtained" (Cook 1993:350). Feathers were collected in the uplands of Waimea, Makaweli, and Hanapēpē:

Amongst the articles which they brought to barter this day, we could not help taking notice of a particular sort of cloak and cap. The first are nearly of the size and shape of the short cloaks worn by the women in England. The ground of them is a network, upon which the most beautiful red and yellow feathers are so closely fixed, that the surface might be compared to the thickest and richest velvet, which they resemble, both as to the feel and the glossy appearance.

The cap is made almost exactly like a helmet, with the middle part or crest sometimes of a hand's breadth, and it sits very close upon the head, having notches to admit the ears. It is a frame of twigs and osiers covered with a network, into which are wrought feathers in the same manner as upon the cloaks, though rather closer and less diversified. These probably complete the dress with the cloaks, for the natives sometimes appeared in both together. [Gay 1875]

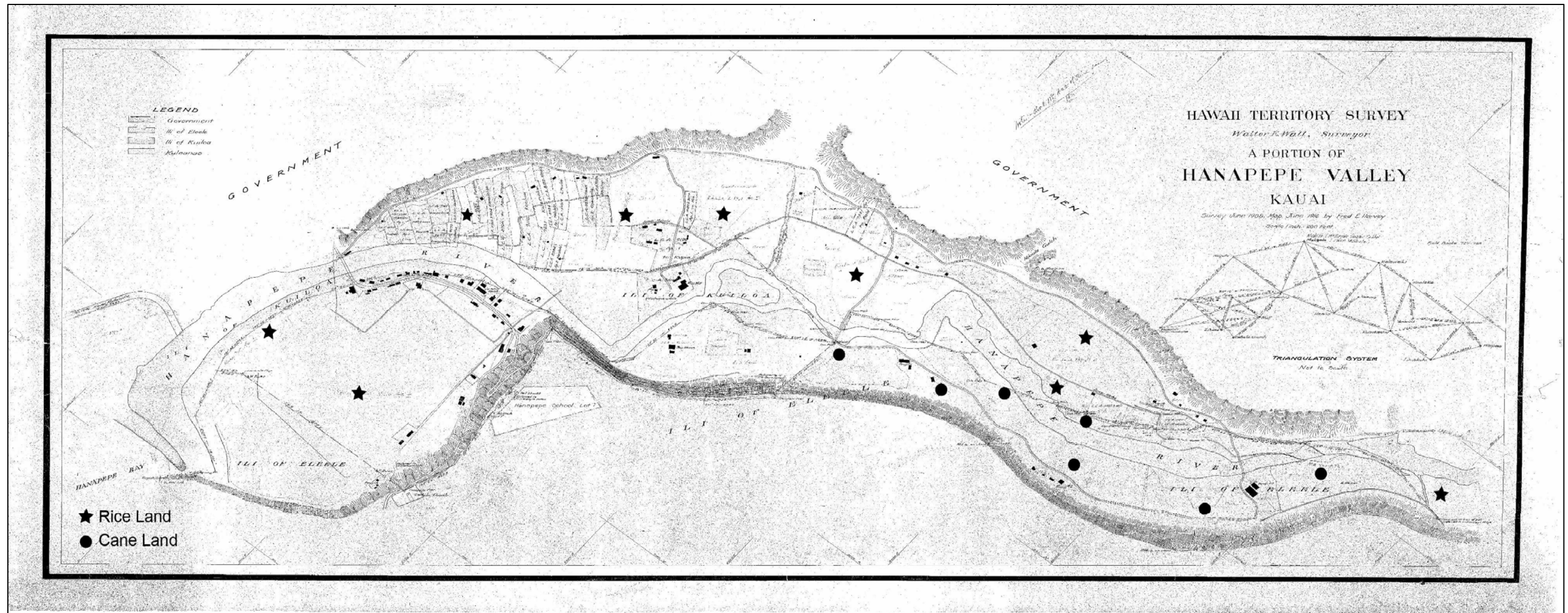


Figure 20. 1916 Fred E. Harvey map of Hanapēpe Valley showing rice and cane lands (resized map)

While the origin of the feathers of this cape and cap is not known, it is not inconceivable that some may have come from Hanapēpē. This upland region of the bird catchers is described by Francis Gay:

Puu-lehua [Lehua hill—A peak at head of this ridge is the highest part of Waialeale, 4775 feet. Junction of all ridges from Olokele to Kahili range Koloa, Puukui is peak makai of Puulehua. This peak, Puulehua divides the land where birds are found at Olokele, Manuahi, Puulehua. Puulehua is the upper end of Manuahi. It is on the upper end of the ili of Manuahi. Above this, Olokele and Koula join to the top of Kawaikini which is the face of cliff of Kawaikini, facing Koula. [Gay 1875:end of first section]

Two other entries by Gay for Hanapēpē also describe bird-related activities:

1. Kapohakukilomanu [(Ka-pohaku-kilo-manu) Stone from which to watch the birds—Valley and stone at Puhi, a branch of Manuahi Valley.
2. Kilo-manu [Watch for birds]—A stone look out for birds. Top of ascent on Manawai ridge. Puhi is the mauka part of Manawai ridge to Puuonanahu [Koula].

Finally, the most touchingly lyric mention of birds can be found in a Land Commission Award for upper Hanapēpē valley (LCA 10349):

The description of the house lot is: the land is Kapewa, with the breadfruit before your eyes, and the bunches of bananas hanging in the dooryard of the house, and the milo tree; on the east is the hill of Holeinui, on the west is a noni grove, a rocky section is to the north; a heaped up row of palis is on the west of me. The /trees/ bearing the ripened fruit eaten by the O'u bird, the lo'is where lives the landshell, chirping in the dawn, the split /fruits of/ the whiteflowered 'ohia, food for the O'o bird, are on the south (Nakapa). [Waihona 'Aina 2000]

4.4.2.1 School

The Protestant missionary Ruggles introduced schooling to Hanapēpē shortly before the Kaua'i Rebellion. Twenty-five years later in the LCA claims, the school *pā* (enclosure) is mentioned, but only once (LCA 8020). However, the Hanapēpē Public School lot of half an acre was not granted until 1 June 1888, and again half a century later Executive Order (#82) established the Teachers Cottage Lot and Ag Garden for 2.7 acres (7 June 1919).

4.4.2.2 Early Diseases

During the time of the Māhele and Kuleana Act, the first influenza epidemic took island lives in May 1848 and generally weakened the population (Thrum 1918:33). People of Hanapēpē also died from leprosy, the measles, and smallpox epidemics of 1898 and 1852, and one man went crazy and died (Gay 1873).

4.4.2.3 Rice Cultivation

Rice cultivation began in Waimea Valley in the 1860s and peaked in the 1890s. Most of the crop was grown by Chinese farmers who continued production on the valley floor well into the 1930s (Handy and Handy 1972:405; Joesting 1984:206–207). On a survey map by Fred E. Harvey

(1916) (see Figure 20) we can see a large rice mill in LCA 3284 (to Wahineaea) in the *'ili* of Kuiloa in Hanapēpē. The two grants to Ah Pai and Chang may refer to two of these Chinese farmers. Many of the first Hanapēpē Town lots were in the form of grants to inhabitants of Japanese or Chinese ancestry around 1921. “Much taro land was converted to rice during this period, not only at Waimea but in other areas of the island causing a taro shortage for a time” (Ida and Hammatt 1993). Harvey’s 1916 map of Hanapēpē Valley shows 118+ acres of rice land on both sides of the river (see Figure 20). These areas were probably formerly used for taro *lo'i*. Also in 1918 official correspondence notes 78 applications for homesteading in Hanapēpē (Archive correspondence of 24 May 1918 in Creed et al. 1995).

4.4.2.4 The Plantation Era—Olokele Sugar Company, Eleele Plantation, McBryde Sugar Company, and Kauai Railway Company

Major foreign interests began to invest in *'Ele'ele*, Wahiawa, and surrounding areas of Hanapēpē in the mid- to late nineteenth century, following acts allowing foreigners to own lands in Hawai'i. The development of large-scale agricultural ventures was also stimulated by the Reciprocity Treaty of 1875 governing trade between the Kingdom of Hawai'i and the United States. The Reciprocity Treaty allowed for certain goods, including sugar, to be exported duty free to the U.S.

The Hawaiian Sugar Company (the present Olokele Sugar Company, also known as Makaweli Plantation, named for Olokele Valley in Makaweli Ahupua'a) is shown on present-day TMK maps on the Waimea (west) side of the lower Hanapēpē Valley and in Makaweli Valley. A.S. Chaney’s 1923 “Hanapepe Cane Lands” map (Figure 21) shows cane growing from the sea coast to the *'ili* of Manuahi in Hanapēpē.

Duncan McBryde relocated to Wahiawa from his estate in Wailua around 1860 (Damon 1931). McBryde developed the extensive Wahiawa Ranch and ventured into sugarcane cultivation in Wahiawa and surrounding lands by 1870 (Damon 1931) (Figure 22). McBryde died in 1878 and his wife, Mrs. Elizabeth McBryde, and August Drier (the manager) entered into a partnership forming the Eleele Sugar Plantation when they bought land from Bernice Pauahi Bishop.

The expansion of the sugar industry necessitated the importation of Japanese, Chinese, Filipino, and Portuguese laborers beginning in the mid-1800s (Armstrong 1983). With a declining Native Hawaiian population, labor importation permanently created a multi-ethnic population.

The McBryde Sugar Company resulted from annexation of Hawai'i to the United States (1898) rather than the Reciprocity Treaty (1876) that exchanged favorable Hawai'i sugar prices for use of Pearl Harbor as a U.S. naval base. The McBryde Sugar Company was the consolidation of three estates: Koloa Agricultural Company, Eleele Plantation, and the Wahiawa Ranch. It was promoted by Benjamin F. Dillingham with Theo. H. Davies & Company as agents. The company’s 1899 prospectus described it thus:

The plantation extends continuously eight miles along the sea coast, and this space is being connected up with a 30 lb. 30 inch gauge railway running parallel to the sea and about ½ mile distant from it. This road keeps to an elevation of about 200 feet, except at either end and crossing the Lawai Valley, where it drops down close to sea level. The mill is located on the line of the road in open level land about one third of the way across the plantation from its west end. A spur from the main track

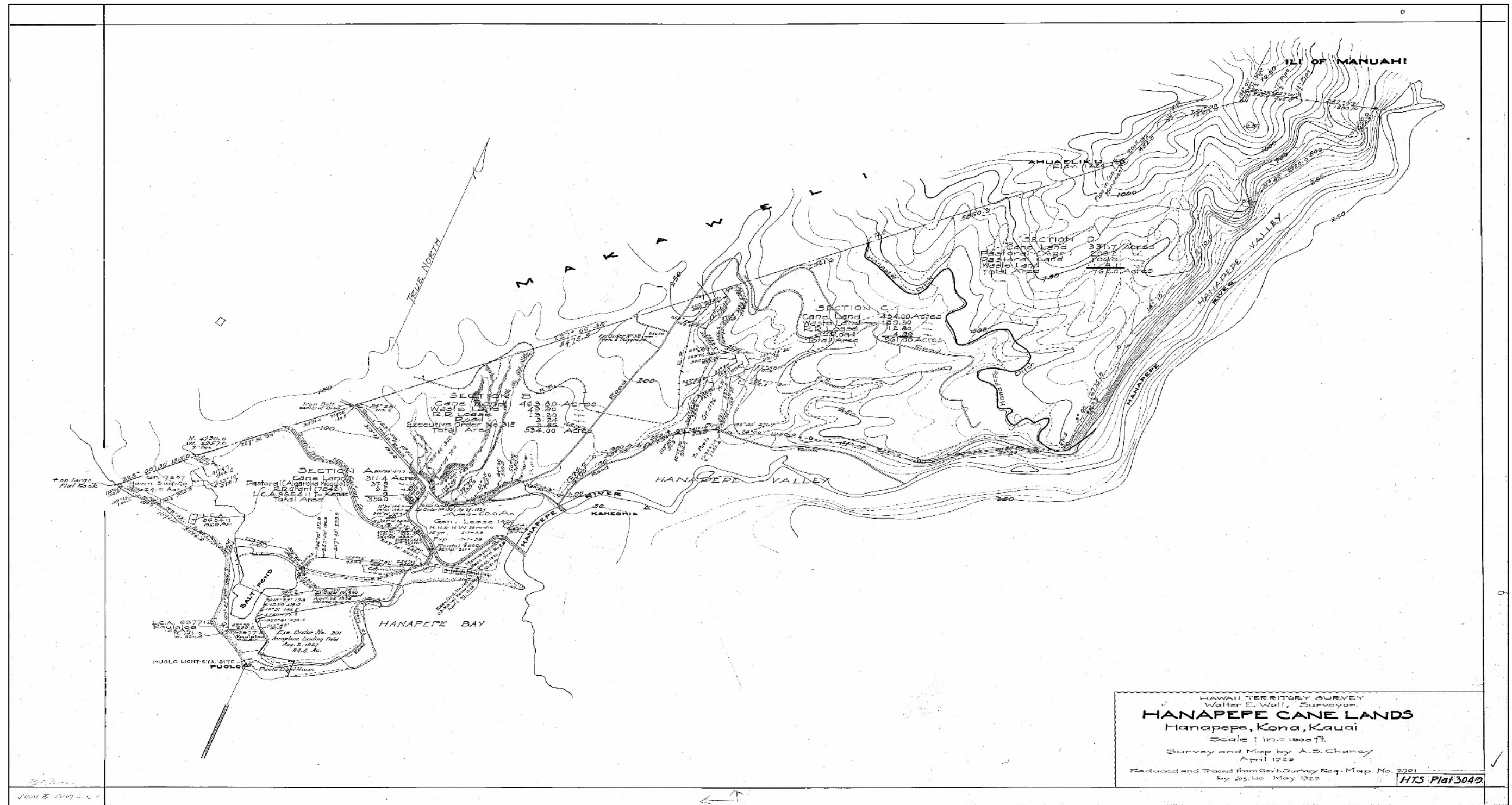


Figure 21. 1923 A.S. Chaney map showing Hanapēpē cane lands

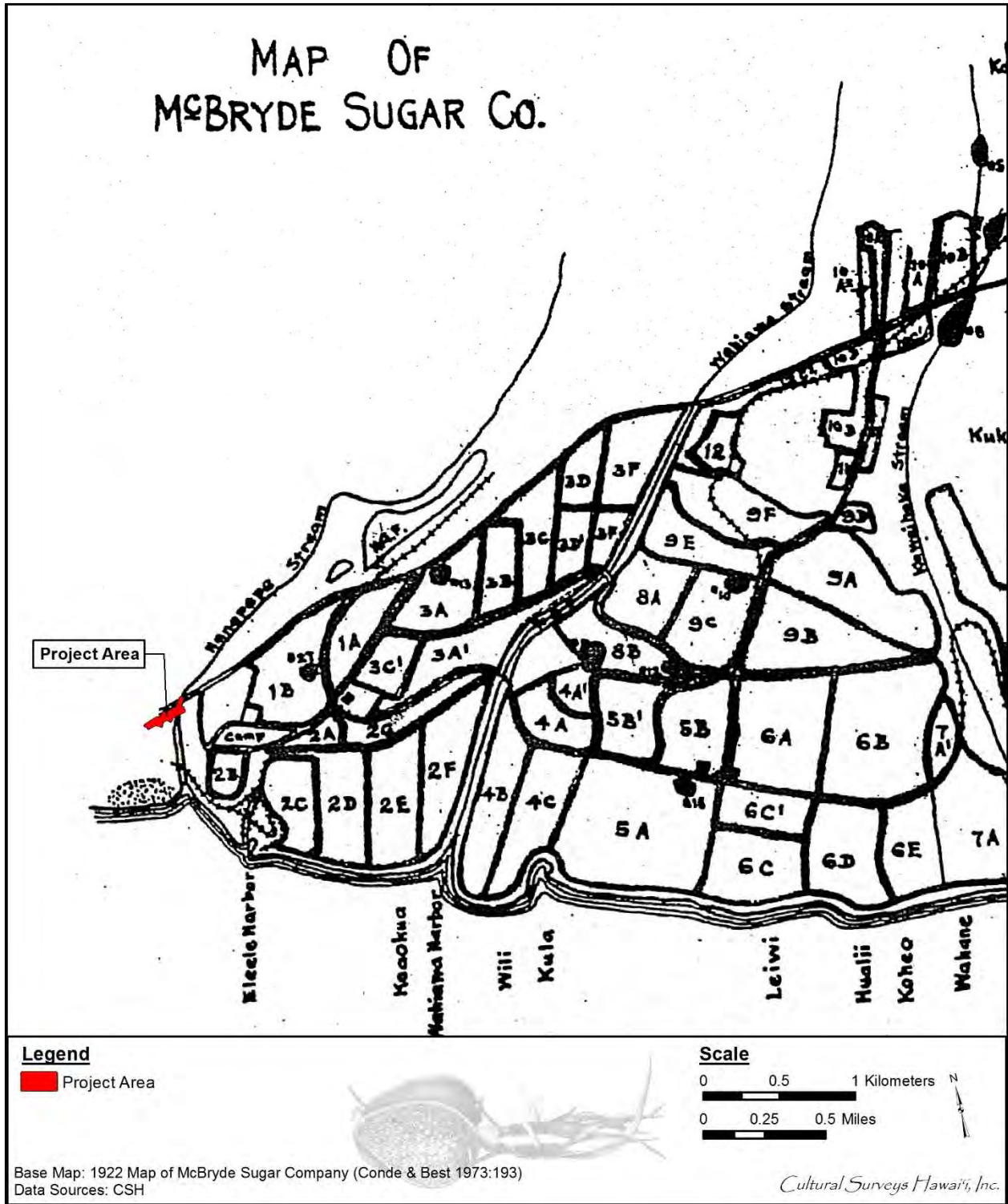


Figure 22. Portion of a 1922 field map of McBryde Sugar Company (Condé and Best 1973:191)

runs along the edge of the Hanapepe Valley to drop coal to the pumping stations in the valley below. [Condé and Best 1973:191]

The Hawaiian Sugar Company of Makaweli was right next door (west) to the McBryde Plantation as shown on the field maps of these two plantations (see Figure 22 and Figure 23). The Hawaiian Sugar Company plantation preceded the later Olokele Plantation and extended from the sea 7 miles to the 1,000 ft elevation. Hawaiian Sugar Company was founded in 1891; Alexander and Baldwin (A & B) took over the plantation in 1889. The company worked out a shipping agreement in 1908 with Kauai Railroad, extending the rail line to 'Ele'ele Landing and building a substantial bridge across the Hanapēpē River.

4.4.2.5 Coffee Industry

Historic coffee commercial ventures on the island of Kaua'i started in 1836 and by 1845 they ended in failure. Only 248 pounds were grown on both Kaua'i and Hawai'i Island according to the first records of production in 1845 (Wikipedia 2014).

4.4.3 1900s

4.4.3.1 Sugar Plantation Continues

In 1906, the plantation-sponsored Kauai Railway company was incorporated. It started business in 1907 with the McBryde Plantation handling the entire operation. In 1909, Alexander and Baldwin took over the railroad. In 1909, Hawaiian Sugar Company contracted to also use it and the company extended its tracks to the 'Ele'ele Landing. By 1910 it had 8 miles of track and by 1920, 19.22 miles of track. Substantial repairs were made to the railway bridge in 1911, 1912, and 1913 (Condé and Best 1973:135).

Eleele Plantation was a nearby sugar plantation east of the Hanapēpē River and northeast of Hanapēpē Bay. The plantation had its own mill and its own landing at what later became Port Allen. Eleele Plantation was considered to have "the most fertile lands in the district and an ample supply of water" (Condé and Best 1973:197). The predominance of sugarcane in the area was evidenced by cane fields and railroad tracks that traversed the landscape. The *Honolulu Advertiser* in a 1949 column labelled "50 Years Ago" noted that the first electric locomotive in the Hawaiian Islands was built and operated at the Eleele Plantation, Kaua'i in 1899 (Condé and Best 1973).

In 1941, when the Kauai Railway liquidated, they had six steam locomotives and 704 cane cars plus others (Condé and Best 1973:135). There is a monument to Baldwin near the place where Kuwiliwili Heiau is thought to have stood. The sugar mill in 'Ele'ele is shown in Figure 24. The McBryde Mill is shown in Figure 25.

Sugarcane cultivation continued to dominate land use in the Hanapēpē and 'Ele'ele areas through the mid-1900s. A 1977 USGS orthophotograph (Figure 26) shows the continued widespread cultivation of sugarcane within and in the vicinity of the study area.

In 1985, the McBryde Sugar Company ranked as Hawai'i's eighth largest sugar plantation. However, sugar plantations soon became unprofitable, bringing an end to McBryde's sugar production in 1996. Much of the former McBryde sugar lands were converted into coffee production, with the Kaua'i Coffee Company replacing the McBryde Sugar Company. Today, remnants of the plantation era can be seen through the architecture and layout of the town, and

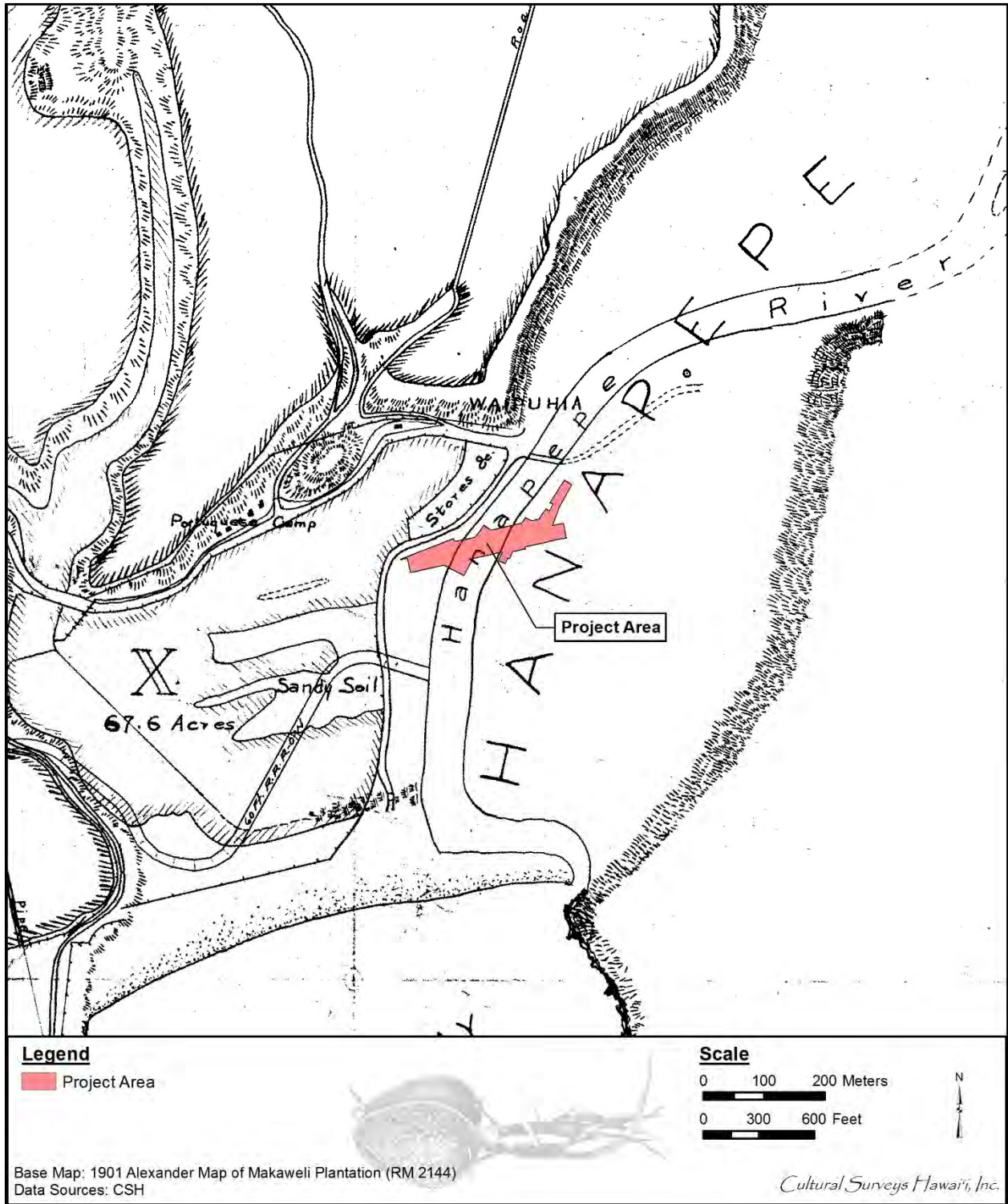


Figure 23. A portion of a 1901 Alexander map showing Makaweli Plantation



Figure 24. Photo of sugar mill in 'Ele'ele, ca. 1885 (Post Office in Paradise 2014)

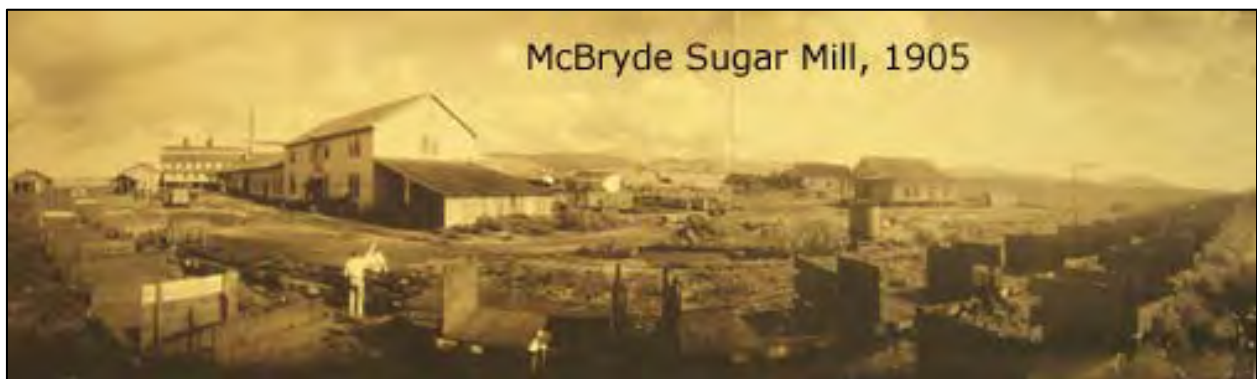


Figure 25. Photo of McBryde Sugar Mill in 1905 (Post Office in Paradise 2014)

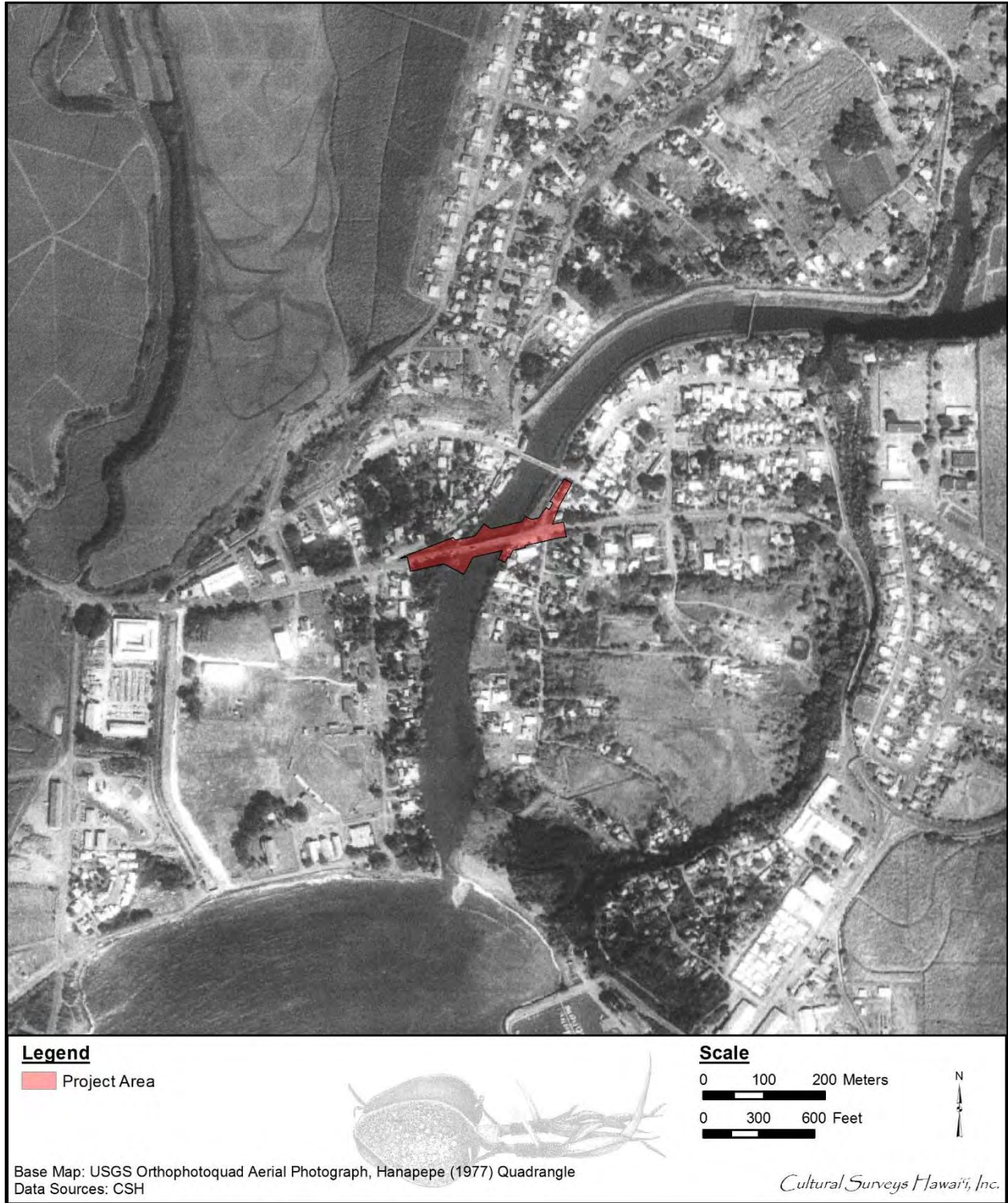


Figure 26. Portion of a 1977 USGS orthophoto of Hanapepe Quadrangle showing study area

these combined with its unique cultural features have turned Hanapēpē into one of Kaua'i Island's most popular tourist attractions.

4.4.3.2 Battle of Hanapēpē or the Massacre at Hanapēpē, 1924

The Battle of Hanapēpē, sometimes referred to as the Massacre at Hanapēpē, occurred on 9 September 1924, killing 16 Filipino workers and four Kaua'i policemen. The massacre came at the end of an eight-month attempt by more than 3,000 workers on four islands to raise the wages of Filipino sugar workers to \$2 a day, as well as improve work and living conditions (Chang 2006a, b; Gordon 2006; Reinecke 1996). In Kaua'i, the 1924 strike attracted 300 Visayan workers out of a potential 10,000 Filipino workers, and it occurred with the help of labor leader Pablo Manlapit (Sobeleski 2006).

This was a relatively small number compared to the 1920 sugar strike organized by Manlapit involving more than 8,300 Japanese and Filipinos as well as Puerto Rican and Spanish workers. The strikers' punishment was swift: they were evicted from their company homes, strikebreakers were hired, and strike leaders prosecuted. Manlapit was subsequently portrayed in the media as an "extortionist" (Gordon 2006:1).

With only an elementary education, Manlapit had come to Hawai'i along with other Filipinos as a sugarcane field worker, where he and others faced 10 hours of daily back-breaking work, six days a week for about 77 cents a day, "being paid less than other nationalities for the same work, with poor housing and lack of opportunities for advancement adding to their plight" (Soboleski 2006:1). Meanwhile, "in 1924, the ten leading sugar companies listed on the Stock Exchange paid dividends averaging 17 percent. From 1913 to 1923 eleven leading sugar companies paid cash dividends of 172.45 percent and in addition most of them issued large stock dividends" (Center for Labor Education and Research, quoting Talbot 1925).

Although he had arrived in Hawai'i as a sugarcane field worker, Manlapit studied at night and eventually became a lawyer, organizing the Filipino Labor Union (Sobeleski 2006). Although Manlapit was not present during the Hanapēpē massacre, he was subsequently blamed and imprisoned.

The chain of events that ended as a massacre began when two potential strikebreakers, Filipinos of Ilocano descent, were seized by the strikers as they passed the camp. When Kaua'i policemen came to free the two men, the strikers followed the group. The strikers were mostly armed with homemade weapons and knives, and in one account, they urged the policemen to fight them (Reinecke 1996:77). It is not clear who shot the first bullet, or who made the first attack, but the following is what is known:

The Hanapepe Massacre took place just before the road that went uphill to Camp 2 (just east of today's intersection at Hanapepe and Moi roads), and during a furious melee that lasted five minutes, two policemen climbed a small bluff (that still exists) and fired into the crowd with their rifles, killing many strikers as they fled into a nearby banana patch. [Soboleski 2006:2]

In addition to the dead, there were nine strikers wounded along with three policemen who were injured by knives (Sobeleski 2006:2). The men who made up the "policemen" were mostly cowboys and hunters; in another account, there were three cowboys who took their places above the road and shot at the strikers as they approached Sheriff Crowell and his deputies (Reinecke

1996:78). After the melee, 101 strikers from the Hanapēpē Camp were arrested the same day, followed by 29 strikers the following day. They were all squeezed into the Līhu‘e and Waimea jails, while their children and wives were housed in the old school building (Reinecke 1996:78). Even those workers who were not present in the camp were arrested and charged with “dangerous and disorderly conduct” and Filipinos were forbidden to go across Wailua Bridge toward Līhu‘e and Hanapēpē (Reinecke 1996:79).

The massacre has not been discussed much by succeeding generations, mostly due to Filipinos wanting to forget or hide their embarrassment (Chang 2006b:1). According to an interview with a Filipino-Hawaiian reporter, Emme Tomimbang, “This was a hush-hush thing . . . They just wanted to bury the incident in the way they buried the men (in a mass grave site said to be by a Catholic church in Hanapepe)” (Chang 2006a:1). The Hawaiian Sugar Planters’ Association (HSPA) made it a point to reimburse the families of each slain policeman \$500, while in contrast, the Filipino community contributed \$82.35 for the funeral of the strikers and \$75.95 for their bereaved families (Reinecke 1996:80).

The Battle at Hanapēpē succeeded in pressuring the plantations into a more progressive mode with changes in recruiting, labor, and management (Reinecke 1996). It also strengthened unionization efforts and aided in the creation of the first union in Hawai‘i, the International Longshore and Warehouse Union (ILWU) (Chang 2006a:3).

4.4.3.3 Kauai Coffee Company

The Kauai Coffee Company was originally the McBryde Sugar Company Plantation. When Alexander & Baldwin (A & B) took over in 1987, they began to grow coffee alongside sugarcane. The transformation from McBryde Sugar to Kauai Coffee represented Hawai‘i’s largest diversified agricultural business in the last 50 years (Kauai Coffee 2014). From 1987 to 1992, Kauai Coffee was a joint venture of A & B and Hills Bros. (Beat of Hawaii 2014). In 1992, Hurricane Iniki caused damage to the coffee crops, about \$8.5 million worth, and Hills Bros. withdrew from the partnership. In 1995, the sugar industry started to phase out for A & B and by 1996, the amount of coffee harvested on Kaua‘i exceeded the amount of coffee produced on Hawai‘i Island for the first time in coffee history (Hawaii for Visitors 2014; Kauai Coffee 2014).

4.4.4 Modern Land Use

At the close of the twentieth century, two of Kaua‘i’s three sugar plantations shut down, Kekaha and Lihue plantations, ending the sugar plantation era on the southeast and east sides of the island. Less than ten years later, the last vestige of Kaua‘i’s sugar plantation era came to an end with the closing of Olokele Plantation in 2009.

With the closing of sugar plantations and the opening of the cane lands, agribusiness companies (also known as seed companies) started to migrate to the Hawaiian Islands to utilize the plantation fields and some of their infrastructure. Four major agribusiness companies currently operate on Kaua‘i: BASF Plant Science, Dow AgroSciences, DuPont Pioneer, and Syngenta.

In general, Hanapēpē Ahupua‘a has seen few changes in land use, with the exception of small areas of commercial development near Port Allen in ‘Ele‘ele. A few residential self-help homes are being built. Several acres of land between the Hanapēpē and Wahiawa Ahupua‘a are being utilized for renewable energy with the construction of solar power panels.

Within the current study area, very little change has occurred within the last 50 years. As historic records indicate, the area around the Hanapēpē bridges consisted of LCAs and cane lands during the plantation era. During the later historic period, as more people started to migrate to Hanapēpē, cane lands within the vicinity of the study area phased out as more residential and commercial buildings were being built.

On a 1963 Hanapēpē USGS topographic map, the Kaumuali'i Highway and Hanapēpē Road are shown in their present form with relatively little change evident between the 1963 and 1996 Hanapepe USGS topographic maps (compare Figure 27 and Figure 1).



Figure 27. Portion of the 1963 Hanapepe USGS topographic quadrangle showing the location of the study area

4.5 Previous Archaeological Research

Few archaeological studies have been conducted in the vicinity of the study area. The locations of previous archaeological studies conducted within a 0.8-km (0.5-mile) radius of the study area are shown in Figure 28 and listed in Table 2. Previously identified historic properties in the vicinity of the study area are shown in Figure 29 and listed in Table 3. These studies are discussed in detail in the following paragraphs.

4.5.1 Thrum 1907; Bennett 1931

Thomas G. Thrum (1907) recorded seven *heiau* in Hanapēpē: Nihoana, Makaole, Pualu, Kuwiliwili, Kauakahinunu, Moloku, and a *heiau* with no name. Wendell Bennett conducted an archaeological survey of Kaua‘i Island years later (1931) and located five of Thrum’s *heiau*: Makaole, Pualu, Kuwiliwili, Kauakahinunu, and Moloku. The following section describes *heiau* in the *ahupua‘a* of Hanapēpē in more detail.

4.5.1.1 Nihoana Heiau

Nihoana is described as a low-walled, small *heiau*, about 20 by 30 ft in ‘Ele‘ele. It is recorded to have been destroyed (Thrum 1907:37). Bennett made no mention of this site.

4.5.1.2 Makole Heiau

Thrum describes Makole Heiau as a small *heiau* of platform character. It is said to have been on Makole Bluff in Hanapēpē and destroyed in the 1860s. A portion of the wall is said to be still seen (Thrum 1907:37). Bennett, in his 1931 island-wide survey could not confirm the walls of this *heiau* (Site 54) (Bennett 1931:113).

4.5.1.3 Pualu Heiau

Pualu, located in Kapahili Hanapēpē is a partly walled paved *heiau* at the base of a hill, built up some 6 ft in front and filled in with stones. Thrum reports the *heiau* is of the *po‘okanaka* (another word referring to a *luakini heiau*, human sacrificial *heiau*) class of which Kāne was its deity. It is described to be in greatly disturbed condition—its front badly fallen away in places. The rear wall stands 4 ft above the *heiau* floor in good state though not over 4 ft thick. It measures 135 ft straight on the back and on the west end 40 ft, curving on the front so as to give 54 ft at the middle and rounding off to a point at the east end (Thrum 1907:37). During his 1931 island survey around Kaua‘i, Bennett confirmed this *heiau* (Site 55) and identified new features that Thrum did not and concluded they could have been built after Thrum’s survey. Bennett also closely examined the shape of the *heiau* and concluded that originally the *heiau* had more the shape of a rectangle with a square taken out of the corner (Bennett 1931:113).

4.5.1.4 Kuwiliwili Heiau

Kuwiliwili Heiau is of the *po‘okanaka* class in Hanapēpē Valley. It is now destroyed but it was a large high-walled enclosure (Thrum 1907:38). By the time Bennett surveyed the area, this *heiau* (Site 48) was no longer in existence (Bennett 1931:112).

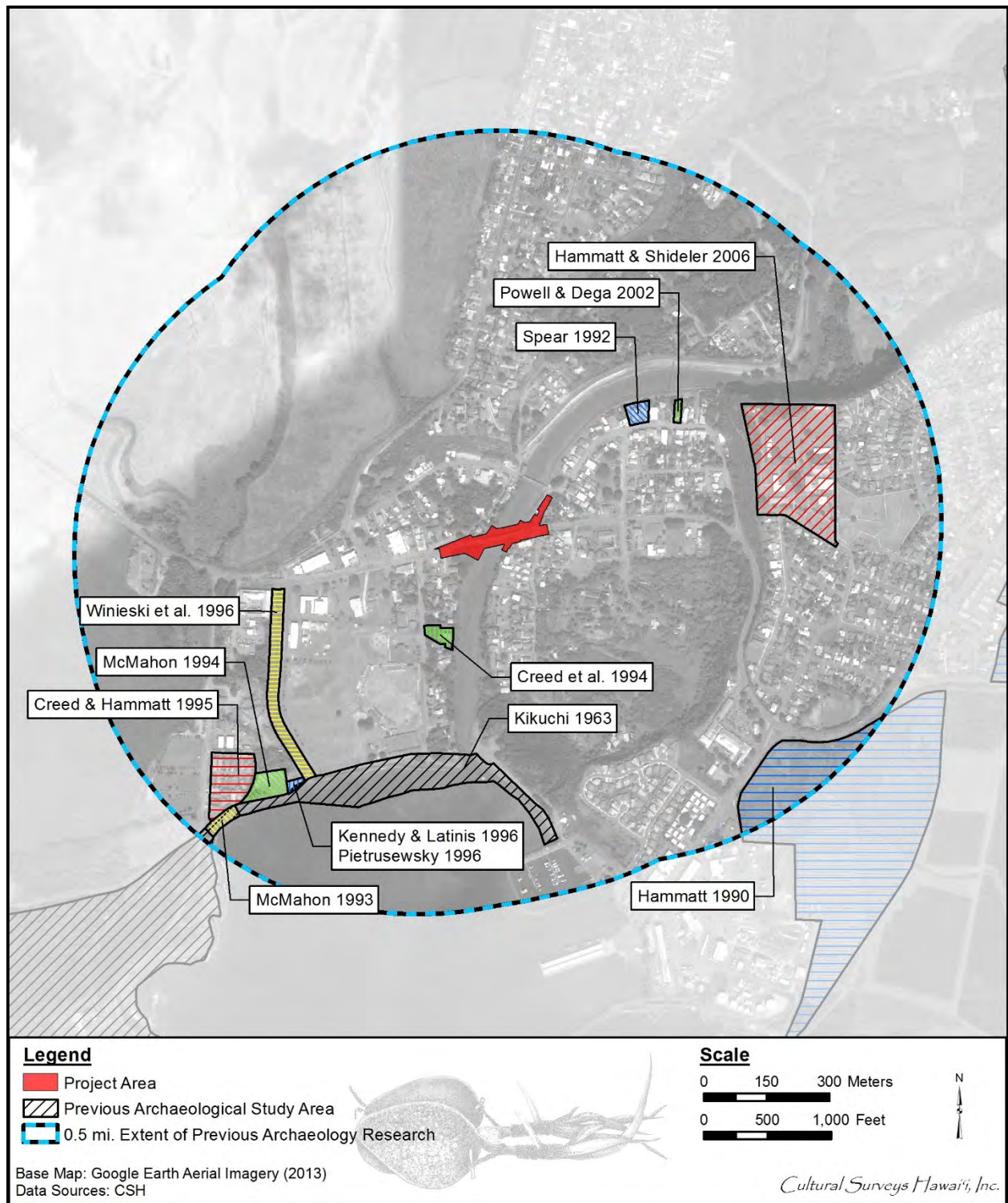


Figure 28. 2013 aerial photograph showing locations of previous archaeological studies within a 0.8-km (0.5-mile) radius of the study area; Thrum 1907, Bennett 1931, and Kikuchi and Remoaldo 1992 not depicted (Google Earth 2013)

Table 2. Previous Archaeological Studies within a 0.8-km (0.5-mile) Radius of the Study Area

Reference	Type of Study	Location	Results (SIHP # 50-30-09-xxxx)
Thrum 1907	Listing of <i>heiau</i>	Island-wide	Recorded seven <i>heiau</i> in Hanapēpē consisting of Nihoana, Makaole, Pualu, Kuwiliwili, Kauakahinunu, Moloku, and a <i>heiau</i> with no name (not shown on Figure 27)
Bennett 1931	Archaeology of Kaua'i	Island-wide	Located five of Thrum's <i>heiau</i> ; Nihoana and Moloku <i>heiau</i> not identified (not shown on Figure 27)
Kikuchi 1963	Archaeological inventory survey	Kona District	Examined caves in Hanapēpē Valley (SIHP # -3037); identified Salt Pond Beach Park, Site 3 (SIHP # -3038)
Hammatt 1990	Archaeological reconnaissance	72 acres, Hanapēpē, TMKs: [4] 2-1-001 and 2-1-001:027	No archaeological sites identified
Kikuchi and Remoaldo 1992	Cemeteries of Kaua'i	Island-wide	Identified six cemeteries in Hanapēpē (SIHP #s -0497, -0603, -0604, -0607, -0608, and -0651) (not shown on Figure 27)
Spear 1992	Archaeological inventory survey	Hanapēpē First United Church of Christ, TMK: [4] 1-9-004:011	Recorded three burial plots on church grounds; also conducted six test units, five features identified during survey: Feature 1 (trash pit), Feature 2 (cat burial), and Features 3–5 (burial plots)
McMahon 1993	Inadvertent burial discovery	Hanapēpē Bay, TMK: [4] 1-8-008:003	Site 53, two burial site areas
Creed et al. 1994	Archaeological inventory survey	House lot in Hanapēpē, TMKs: [4] 1-9-010:002 and 003	Eight backhoe trenches, historic cultural deposit present in four trenches, SIHP #s -0704 and -0705 (human burials) identified in two trenches
McMahon 1994	Inadvertent burial discovery	Hanapēpē Japanese Cemetery, TMK: [4] 1-8-008:014	SIHP # -0651, inadvertent discovery of single human remain

Reference	Type of Study	Location	Results (SIHP # 50-30-09-xxxx)
Creed and Hammatt 1995	Archaeological inventory survey and subsurface testing	3.246-acre parcel for Self-Help Housing, TMK: [4] 1-8-008:019	Five backhoe trenches completed; no cultural resources identified
Kennedy and Latinis 1996	Burial treatment plan and archaeological treatment of an inadvertent burial	Pu'olo Rd	Possible burial may be a feature of Bennett Site 53
Pietruszewsky 1996	Skeletal analysis	Pu'olo Rd	50-59-year-old male; probable Polynesian (Hawaiian) ancestry
Winieski et al. 1996	Archaeological monitoring	Hanapēpē Drainage Improvement project, TMK: [4] 1-9-008:045	SIHP # -1987 (coffin burial) and several fragments of human burials encountered
Powell and Dega 2002	Burial treatment of human remains	Old Hanapēpē Pool Hall, TMK: [4] 1-9-004:008	Documentation and recovered human skeletal remains, SIHP # -1710
Hammatt and Shideler 2006	Archaeological literature review and field check	'Ele'ele Elementary School, 4750 Uliuli Rd	No indications of archaeological concerns at 'Ele'ele Elementary School; no further work recommended

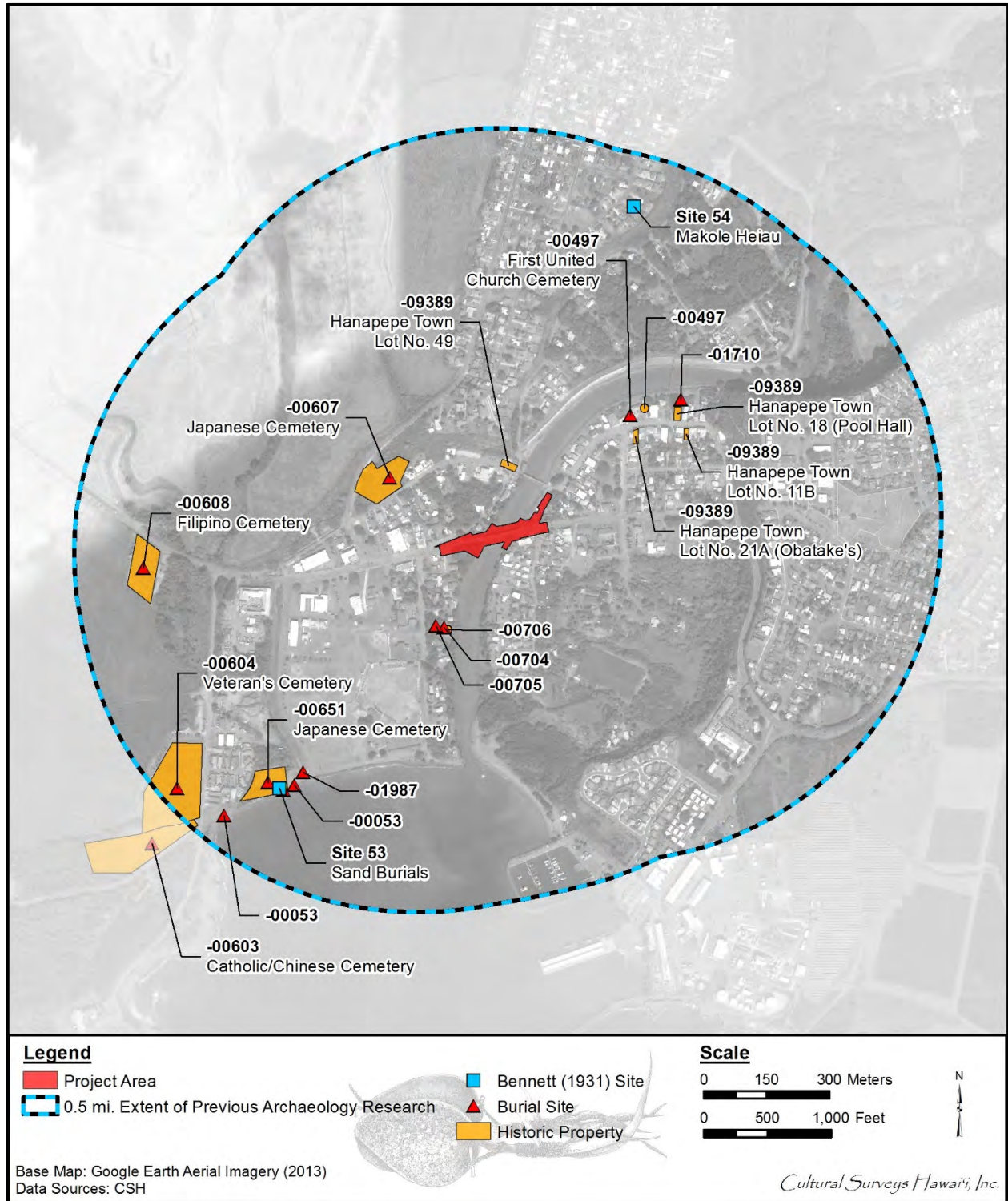


Figure 29. Aerial photograph showing locations of previously identified historic and archaeological sites within a 0.8-km (0.5-mile) radius of the study area

Table 3. Previously Identified Historic Properties within a 0.8-km (0.5-mile) Radius of the Study Area

Site #	Site Type/Name	Location	Reference
53	Sand burials	Located in sand on northwest side of Hanapēpē Bay	Bennett 1931:112
54	Makole Heiau	Makole Bluff	Thrum 1906, Bennett 1931:113
-0497, B012	Pre-Contact cultural deposit	Southeast corner of proposed building for Hanapēpē First United Church of Christ (TMK: [4] 1-9-004:011)	Spear 1992:3, Kikuchi and Remoaldo 1992:195–197
-0603, B004	Catholic/Chinese Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0604, B005	Veteran's Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0607, B008	Hanapēpē Heights Japanese Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0608, B003	Filipino Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0651	Hanapēpē Cemetery	Hanapēpē	Kikuchi and Remoaldo 1992:195
-0704	Burial	Near Hanapēpē River south of Kaumuali'i Hwy	Creed et al. 1994:66
-0705	Burial	Near Hanapēpē River south of Kaumuali'i Hwy	Creed et al. 1994:66
-0706	Cultural deposits	Near Hanapēpē River south of Kaumuali'i Hwy	Creed et al. 1994:66
-1710	Historic burial	Located within SIHP # -9389 Lot No. 18 (TMK: [4] 1-9-004:008)	Powell and Dega 2002
-1987	Primary coffin burial	Western bank of drainage canal near Japanese Cemetery	Winieski et al. 1996:55
-9389 Lot No. 11B	Building	TMK: [4] 1-9-005:053	—
-9389 Lot No. 18	Building (former pool hall)	TMK: [4] 1-9-004: 008	—
-9389 Lot No. 21A	Building (Obatake's)	TMK: [4] 1-9-005:041	—
-9389 Lot No. 49	Building	TMK: [4] 1-9-011:008	—

4.5.1.5 Kauakahinunu Heiau

This *heiau* is of an unknown class and recorded by Thrum as still standing at the shores of Puolo Point. It is a walled *heiau* of medium size with part of the walls still standing. The *heiau* was dedicated to Kāne and Kanaloa (Thrum 1907:38). Bennett makes no mention of this site.

4.5.1.6 Moloku Heiau

This *heiau* is located near the peak of Kuopoo Ridge at a junction with Kahalau. It is described by Thrum as an open platform in fair condition (Thrum 1907:38). Bennett mentions this *heiau* (Site 59) in his island-wide survey (1931:114).

4.5.1.7 Unknown/Akawai Heiau

During Thrum's survey, he described this *heiau* as a small paved *heiau* of about 50 ft located at Akowai and said to have been erected by Kaumuali'i. It is of an unknown class and destroyed in 1865 (Thrum 1907:38). No name was mentioned for this *heiau* in Thrum's study. Bennett reidentified this site in his 1931 island-wide survey and referred to it as Akowai Heiau (Site 56), most likely due to the *heiau* being located as he describes it "at a place called Akowai on the steeply sloping side of a bluff" (1931:113). He also mentions there were a number of house sites (Site 57) and a jumbled mass of wall that might have been the *heiau* (Bennett 1931:113). The house sites were labeled Site 57.

4.5.1.8 Kuikahi Heiau

Kuikahi Heiau is mentioned in Martha Beckwith's *Hawaiian Mythology* in a prayer given by Kāne when he began to offer prayer in the *heiau* of Kuikahi at Hanapēpē, Kaua'i, near the stream of Manawai-o-puna, which calls upon the lesser Kāne gods to do their duty and aid him (Beckwith 1970:53). Manawaiopuna Stream is in the *'ili* of Ko'ula, far up the valley.

4.5.1.9 Hauola Heiau

In the legend of 'Ola, the *menehune* help 'Ola to build the *heiau* of Hauola. As stated by Beckwith, "these people [menehune] also build the *heiau* of Hauola named after the famous city of refuge of his father at Kekaha" (Beckwith 1970:328).

4.5.2 Bennett 1931

The first systematic archaeological survey of Kaua'i was conducted by Bennett (1931), in which he documented several historic properties in Hanapēpē. Historic property locations were generally limited to areas along the coast and within stream valleys. It should be noted that Bennett's work was conducted after commercial sugarcane cultivation and other historic activities had destroyed or damaged many historic properties. Also, most of the historic properties documented by Bennett were relatively easy to access and relatively conspicuous and obvious.

Bennett (1931) documented five historic properties along the Hanapēpē shoreline. Historic properties located near Puolo Point included salt pans (Site 49), house sites (Site 50), Kauakahinunu Heiau (Site 51), and a house site or fishing shrine (Site 52). Bennett noted damage to the historic properties in the area due to construction of an airport. Site 53 consisted of a burial ground in the sand at the northwestern side of Hanapēpē Bay. All five sites are near the study area, particularly Site 53. Bennett (1931) recorded several historic properties within Hanapēpē Valley, including Sites 56 and 57 in the *makai* portion of the valley. Site 56 was Akowai Heiau, noted by Thrum

(1907) to have been destroyed ca. 1865. Site 57 consisted of house sites at the former location of Akowai Heiau.

4.5.3 Kikuchi 1963

Kikuchi (1963) conducted an archaeological survey of the Kona District of Kaua'i, where he revisited historic properties identified by Bennett and recorded additional historic properties. Historic properties identified in Hanapēpē included burial caves in Hanapēpē Valley (SIHP # -3037) and a subsurface cultural layer (SIHP # -3038) located along the Hanapēpē shoreline. Both historic properties are outside the study area though SIHP # -3038 is closer to the study area near the coast.

4.5.4 'Ele'ele/Port Allen (Hammatt 1990)

Hammatt (1990) conducted an archaeological reconnaissance survey of 72 acres at 'Ele'ele/Port Allen, located in the *'ili* of 'Ele'ele, outside the modern *ahupua'a* boundary of Hanapēpē. No historic properties were identified within the study area. The report did note the location of a Japanese cemetery along the shoreline.

4.5.5 Kikuchi and Remoaldo 1992

Kikuchi and Remoaldo (1992) conducted a survey and inventory of the cemeteries on Kaua'i. The Hanapēpē cemeteries include the Hanapēpē First United Church of Christ (SIHP # -0497, B012), the Catholic/Chinese Cemetery (SIHP # -0603, B004), the Veteran's Cemetery (SIHP # -0604, B005), the Hanapēpē Heights Japanese Cemetery (SIHP # -0607, B008), the Filipino Cemetery (SIHP # -0608, B003), and the Hanapēpē Cemetery (SIHP # -0651).

4.5.6 Hanapēpē First United Church of Christ (Spear 1992)

Spear (1992) conducted an archaeological inventory survey of the Hanapēpē First United Church of Christ, located along the eastern bank of the Hanapēpē River. Subsurface testing revealed a pre-Contact cultural deposit (SIHP # -0497). Three marked graves within the church parcel were also included in the SIHP historic property designation.

4.5.7 Old Puolo Road (McMahon 1993)

In 1993, Nancy McMahon investigated an inadvertent burial (Site 53) discovered beneath the old Puolo Road. The burial was discovered approximately 90 cm below the old road surface. A long bone and the lower half of a jaw bone was observed (McMahon 1993).

4.5.8 Hanapēpē Japanese Cemetery (McMahon 1994)

In 1994, an inadvertent burial discovery was made near the Hanapēpē Japanese Cemetery (SIHP # -0651) (McMahon 1994). Due to the extremely low tide, a humerus was exposed at the edge of the corner of the cemetery. No ethnic determination could be made on the single human remain.

4.5.9 Creed et al. 1994

Creed et al. (1994) conducted an archaeological inventory survey of a house lot located along the western bank of the Hanapēpē River. Subsurface testing revealed two human burials (SIHP #s -0704 and -0705) and a subsurface cultural deposit (SIHP # -0706). Radiocarbon dating of charcoal from the cultural deposit yielded a date range of AD 1811-1927.

4.5.10 Hanapēpē Self-Help Housing Project (Creed and Hammatt 1995)

Creed and Hammatt (1995) conducted an archaeological inventory survey for the Hanapēpē Self-Help Housing project, located along the northwest portion of Hanapēpē Bay. No surface historic properties were observed and subsurface testing did not reveal buried cultural deposits.

4.5.11 Puolo Road (Kennedy and Latinis 1996; Pietrusewsky 1996; Winieski et al. 1996)

Kennedy and Latinis (1996) reported on the treatment of an inadvertent burial discovery located on Puolo Road fronting Hanapēpē Bay. The remains were determined to be of likely Polynesian ancestry and were included as a component of the Bennett (1931) Site 53 burial ground. Pietrusewsky did the skeletal analysis report for the inadvertent burial discovery (Pietrusewsky 1996). Winieski et al. (1996) also conducted a survey near the study area but no historic properties were found.

4.5.12 Hawai'i Inter-Island DOE Cesspool Project (Hammatt and Shideler 2006)

In 2006, CSH conducted an archaeological literature review and field check study of eight DOE Schools on the island of Kaua'i for the Hawai'i Inter-Island DOE Cesspool project (Hammatt and Shideler 2006). In Hanapēpē, the study area included the 'Ele'ele Elementary School. Background research, along with a field check, gave no indications of archaeological concerns at 'Ele'ele Elementary School. No further work was recommended.

Section 5 Community Consultation

5.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua'a* of Hanapēpē. CSH initiated its outreach effort in August 2015 through letters, email, telephone calls, and in-person contact. CSH completed the community consultation in December 2015. However, approval of interview transcriptions and summaries are still pending.

5.2 Community Contact Letter

In the majority of cases, letters (Figure 30 and Figure 31) along with a map and an aerial photograph of the project were mailed with the following text:

At the request of CH2M HILL and on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), Cultural Surveys Hawai'i, Inc. (CSH) is conducting a Cultural Impact Assessment (CIA) for the Hanapēpē River Bridge Replacement Project, Hanapēpē Ahupua'a, Waimea District, Kaua'i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) contract DTFH68-13-R-00027, TMKS: [4] 1-9-007:001 (Hanapēpē Canal), 013, and 034 por.; and [4] 1-9-010:014, 015, 046, and 050 por. Kaumuali'i Highway and Iona Road Rights-of-Way. The proposed project is located along Kaumuali'i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The project area encompasses the Hanapēpē River Bridge over Hanapēpē River, a portion of Kaumuali'i Highway, areas on either side of Kaumuali'i Highway, and Hanapēpē River. The project area is depicted on a portion of the 1996 U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle and a 2013 aerial photograph (see attachments) and covers an area of approximately 2.75 acres.

The purpose of the project is to replace the existing deficient Hanapēpē Bridge to meet current design standards for roadway width, load capacity, bridge railing and transitions, bridge approaches, and to mitigate the effects of scour. The existing bridge was constructed in 1938 and is a reinforced concrete T-beam structure. The bridge has a length of approximately 275 ft.

The purpose of the CIA is to gather information about the study area and its surroundings through research and interviews with individuals that are knowledgeable about this area. The research and interviews assist us when assessing potential impacts to the cultural resources, cultural practices, and beliefs identified as a result of the planned project. We are seeking your *kōkua* (assistance) and guidance regarding the following aspects of our study:

- **General history and present and past land use of the project area.**

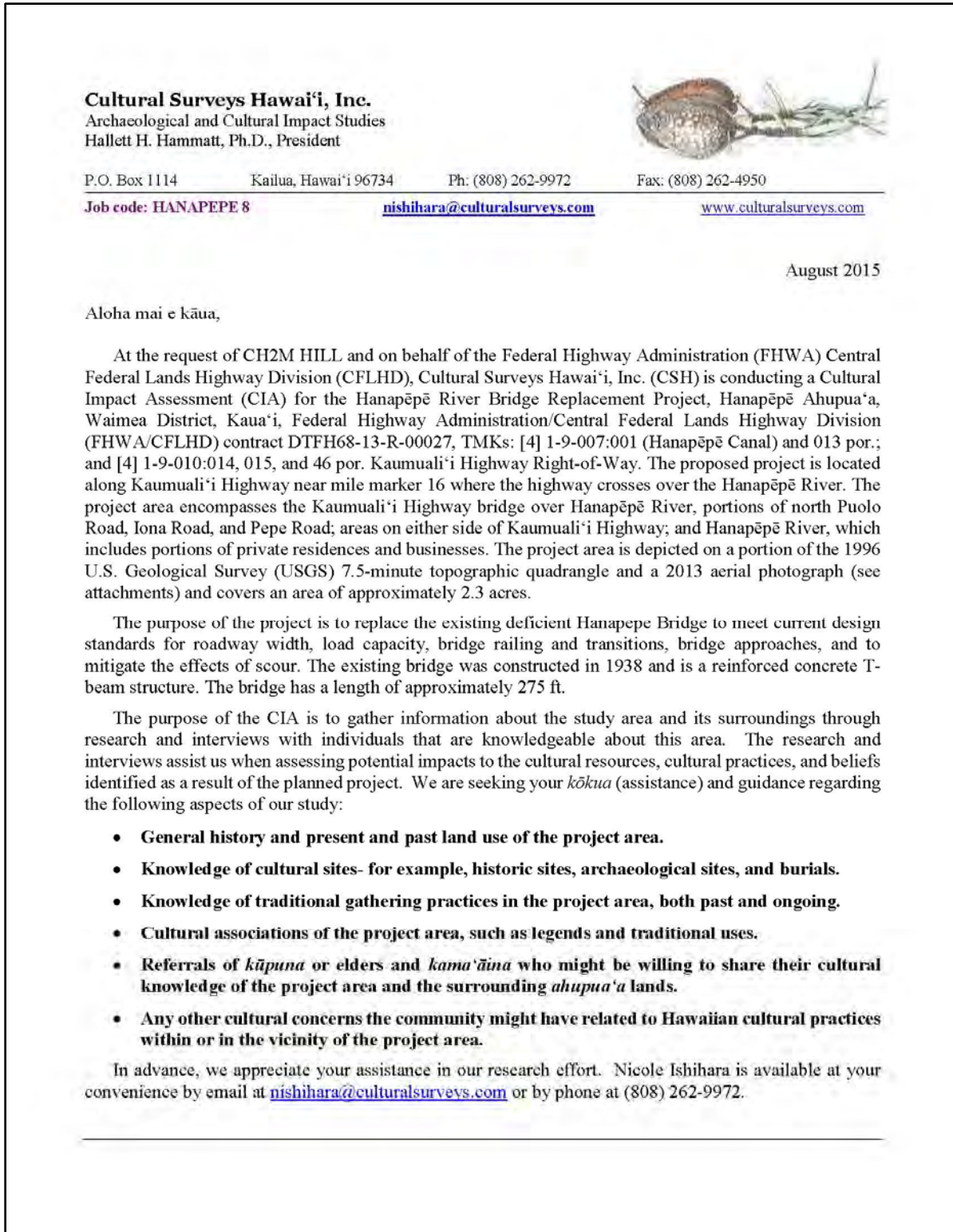


Figure 30. Community consultation letter, page one

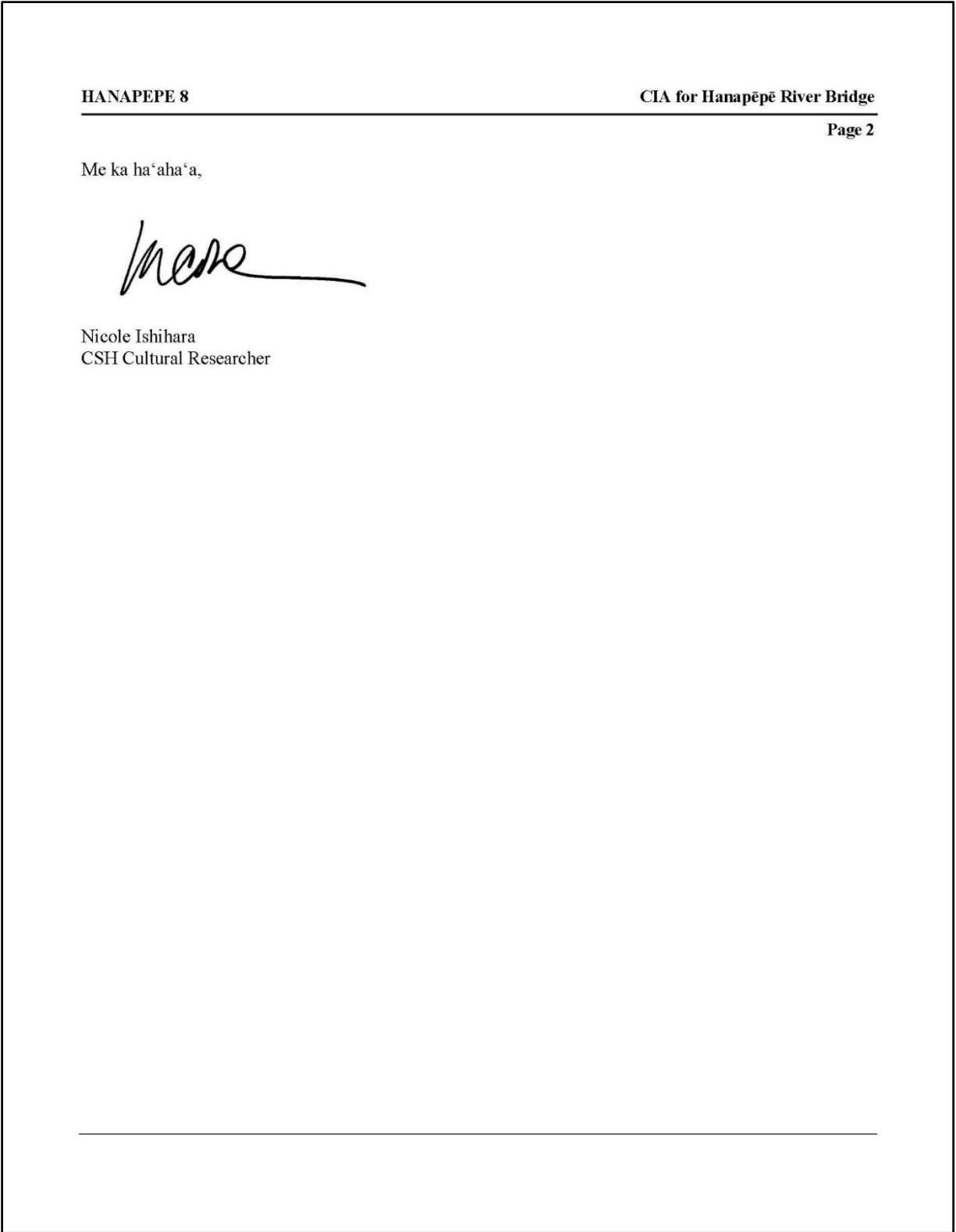


Figure 31. Community consultation letter, page two

- **Knowledge of cultural sites- for example, historic sites, archaeological sites, and burials.**
- **Knowledge of traditional gathering practices in the project area, both past and ongoing.**
- **Cultural associations of the project area, such as legends and traditional uses.**
- **Referrals of *kūpuna* or elders and *kama'āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.**
- **Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.**

In March 2016, CSH was contacted by CH2M HILL, acting on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), regarding a change to the project area. The original project area included approximately 2.75 acres, the new project area, however, was enlarged to include approximately 2.9 acres. This represents a total change of approximately 0.15 acre to the total project area. The project area remains located along Kaumuali'i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The study area still encompasses the two bridges over Hanapēpē River, portions of north and south Puolo Road, a portion of Iona Road, Pepe Road, Hanapēpē Road, Hana Road, areas on either side of Kaumuali'i Highway, and Hanapēpē River, which includes portions of private residences and businesses, all within Kōloa, Ahupua'a, Kōloa District, Kaua'i Island. All individuals who had participated in CSH's *Kama'āina* Interviews (Section 5.4) were contacted by phone and/or by email regarding this change. Letters along with aerial photographs and TMK maps of both the old and the new project area were either emailed or mailed with the following text (Figure 32):

In recent months, Cultural Surveys Hawai'i (CSH) at the request of CH2M HILL, and on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD) has reached out to you regarding a cultural impact assessment report for the Hanapēpē River Bridge Replacement project, Hanapēpē Ahupua'a, Waimea District, Kaua'i, Federal Highway Administration/Central Federal Lands Highway Division (FHWA/CFLHD) contract DTFH68-13-R-00027, TMKs: [4] 1-8-008, 1-9-007, 010, and 011. We would once again like to thank you for all your assistance and your valuable *mana'o* on this project. However, in recent days, CSH has been notified regarding a change to the project area. This change to the project area is depicted in the attached figures (please refer to figures noting 'Original Project Area' and 'New Project Area as of March 18, 2016' to observe the changes to the project area). The original project area included approximately 2.75 acres, the new project area, however, includes approximately 2.9 acres; this represents a total change of approximately .15 acre to the total project area. We would like to inform you of these changes, and kindly ask again for your *kokua* and guidance in this matter. Please do not hesitate to contact us by telephone or email if your *mana'o* has changed or been affected by the changes to the project area.

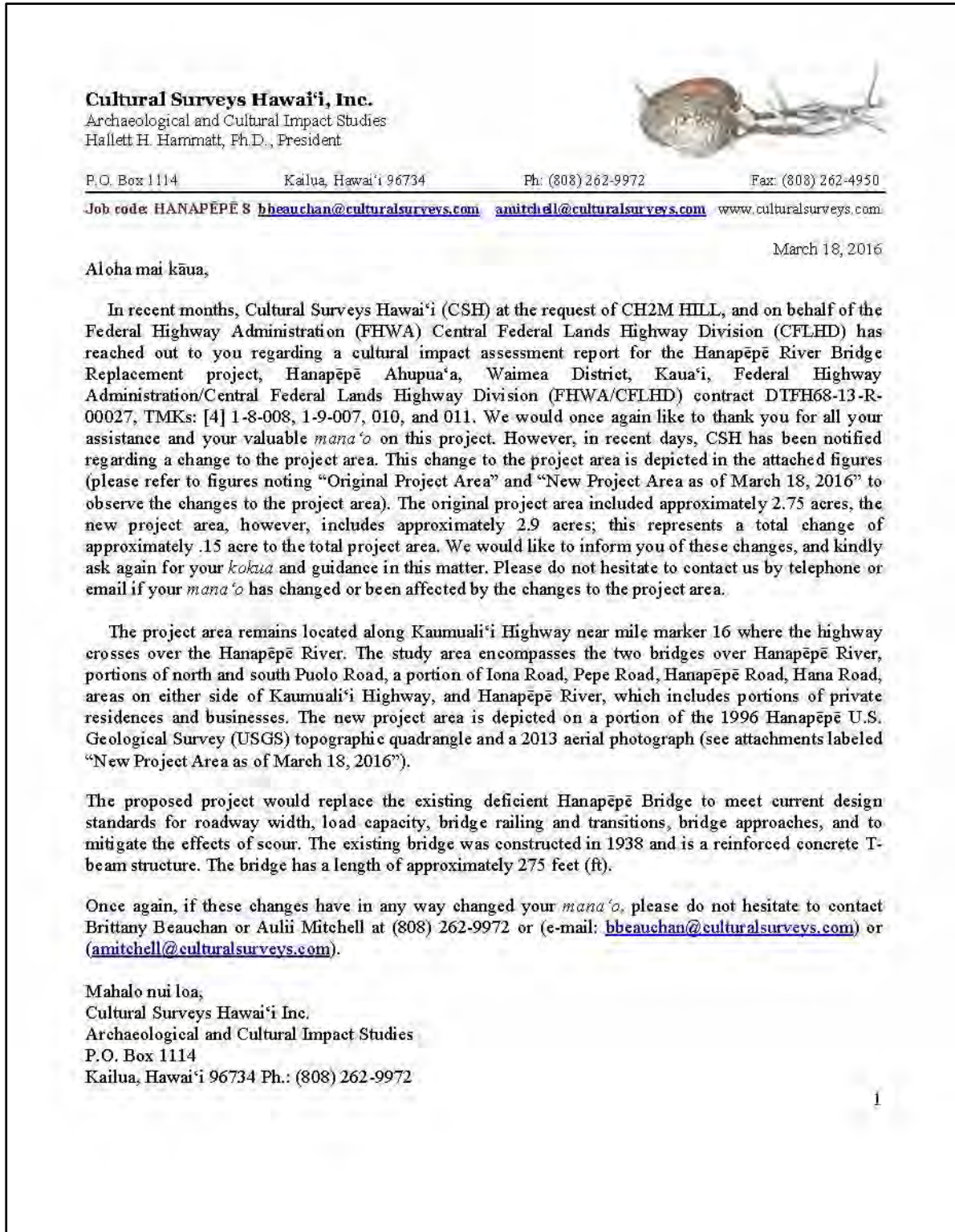


Figure 32. Community consultation letter discussing change to project area

The project area remains located along Kaumuali‘i Highway near mile marker 16 where the highway crosses over the Hanapēpē River. The study area encompasses the two bridges over Hanapēpē River, portions of north and south Puolo Road, a portion of Iona Road, Pepe Road, Hanapēpē Road, Hana Road, areas on either side of Kaumuali‘i Highway, and Hanapēpē River, which includes portions of private residences and businesses. The new project area is depicted on a portion of the 1996 Hanapēpē U.S. Geological Survey (USGS) topographic quadrangle and a 2013 aerial photograph (see attachments labeled ‘New Project Area as of March 18, 2016’).

The proposed project would replace the existing deficient Hanapēpē Bridge to meet current design standards for roadway width, load capacity, bridge railing and transitions, bridge approaches, and to mitigate the effects of scour. The existing bridge was constructed in 1938 and is a reinforced concrete T-beam structure. The bridge has a length of approximately 275 feet (ft).

5.3 Community Contact Table

Below in Table 4 are names, affiliations, dates of contact, and comments from NHOs, individuals, organizations, and agencies contacted for the project. Results are presented below in alphabetical order.

Table 4. Results of Community Consultation

Name	Affiliation	Comments
Crabbe, Kamana‘opono	<i>Ka Pouhana</i> (Chief Executive Officer), Office of Hawaiian Affairs (OHA)	Letter and figures sent via U.S. Postal Service (USPS) 12 August 2015 Client revised letter and figures sent via USPS 31 August 2015 CSH received a letter from Mr. Crabbe on 6 October 2015; OHA recommended consultation to be initiated with the following parties: families from Hanapēpē Salt Pond; Frank Santos, salt maker and practitioner; Sarah Peters, Kaumuali‘i Hawaiian Civic Club member; and Wilma Holi, Kaumakani resident and cultural practitioner. In addition, OHA requests assurance that “should iwi kūpuna or Native Hawaiian cultural deposits be identified during ground altering activities, all work will immediately cease and he [<i>sic</i>] appropriate agencies, including OHA, will be contacted pursuant to applicable law.”

Name	Affiliation	Comments
		See Appendix B for letter from OHA. Mailed revised letter and figures via USPS notifying of change to project area on 21 March 2016.
Hanapēpē Economic Alliance		Letter and figures sent via USPS 12 August 2015 Client revised letter and figures sent via USPS 31 August 2015 Second letter and figures sent via USPS 30 October 2015
Hashimoto, Thomas	<i>Po'o</i> for Kaua'i, Aha Moku Advisory Council	Client revised letters and figures sent via email 31 August 2015
Holi, Wilma	<i>Kupuna, kama'āina</i> Director of Hanapēpē Bay Community Association	Letter and figures sent via USPS 12 August 2015; returned 17 August 2015 Letter and figures sent via email 19 August 2015 Ms. Holi responded to CSH via email on 25 August 2015 with the following: <i>Thank you for contacting me. Are you scheduling any consultation sessions?</i> CSH responded to Ms. Holi via email on 25 August 2015 stating that we could set up a phone interview or fly to Kaua'i to meet with her. CSH emailed Ms. Holi 31 August 2015 with client revised consultation letter and figures
Hilo, Regina	Kaua'i Island Burial Sites Specialist, Department of Land and Natural Resources (DLNR) – State Historic Preservation Division (SHPD)	Letter and figures sent via email 17 August 2015
Kaleohano, Betty	<i>Kupuna</i>	Letter and figures sent via USPS 18 August 2015 Client revised letter and figures sent via USPS 31 August 2015 Second letter and figures sent via USPS 30 October 2015
Kanahele, Helene	<i>Kupuna</i>	Letter and figures sent USPS 18 August 2015

Name	Affiliation	Comments
		Client revised letter and figures sent via USPS 31 August 2015 Second letter and figures sent via USPS 30 October 2015
Kaua'i Historic Preservation Committee		Letter and figures sent via USPS 12 August 2015 Client revised letter and figures sent via USPS 31 August 2015 Second letter and figures sent via USPS 30 October 2015
Libre, Rhoda	Founder, Kaua'i Westside Watershed Council Kauai Culture, Arts, and Technology Center Hanakaumaka Pu'uhonua	Interviewed and signed authorization form on 16 December 2015 CSH contacted Ms. Libre by phone and email on 21 March 2016, notifying her of revised project area and requesting edits or final approval of interview transcription and summary. Ms. Libre responded via email on 22 March 2016 with summary edits and added: <i>Please add at the end "the o'opu and limu n their migration, feeding, habitat n nursery grounds are vital indicators to the integrity of the waters that lead to the shoreline n reefs n surrounding waters n biota of this bridge. Turbidity, pollution, foreign matter introductions of biological, chemical, or physical is important to consider as well as native gathering n practices. There is no commercial activities or kayaks, motor powered vehicles, paddle boards or any intrusions to native habitat n migration n practices. Please keep me abreast of any actions in regards to this project or any developments it consultations in the kona moku. Your considerations are appreciated and thank you kindly for consulting the lineal n cultural regional maka'ainana of the Hanapepe area. These waters n areas are sensitive n fragile</i>

Name	Affiliation	Comments
		<p><i>environment n quite beloved n revered by our people of this Ahupua'a (that includes air, ocean, muli wai, and activities). Mahalo loa.</i></p> <p>CSH emailed Ms. Libre copies of revised letter and figures discussing change to project area on 4 April 2016.</p> <p>Ms. Libre responded via email on 5 April 2016: <i>Mahalo a Nui loa. I'm work on this today n meeting with watershed council on their mana'o. Will there be any additions to lanes (ie . . . Car, bike, walk path) and has an assessment to the damages made by Monsanto containers during past flood that hit both bridges n spilled chemicals into waters n soil n reefs? Irrevocable injuries to bridges, food supplies, practices, and habitat were evident n should addressed. Mahalo for your considerations n look forward in seeing your reply to the concerns.</i></p> <p><i>R. Makanani Libre</i></p> <p><i>Kauai Westside watershed council</i></p> <p><i>Kauai culture, arts n technology center</i></p> <p><i>Hanakaumaka Pu'uhonua</i></p> <p>CSH emailed reply to Ms. Libre on 5 April 2016: <i>Aloha e Makanani,</i></p> <p><i>Fantastic! Thank you so much for all your help, kala mai, I don't think I am the best person to answer all your questions, but I have forwarded to the appropriate individuals (project managers who will pass on these questions to CH2M Hill), and I will make sure these questions are included in your completed interview summary,</i></p>

Name	Affiliation	Comments
		<p><i>and also included in the Impacts and Recommendations section within the report. I can add a bullet point in this section noting that additional measures should occur to remediate damage done to the watershed and bridge by previous Monsanto containers. Once again, mahalo for your kokua and guidance throughout this report.</i></p> <p>CSH contacted via text message on 12 April 2016 asking if Ms. Libre still interested in participating in the project and/or has additional edits for summary/transcription.</p> <p>Ms. Libre replied via email, providing edits to summary and transcription, and giving final authorization of her statements on 13 April 2016.</p> <p>Ms. Libre reiterated her concerns via email, requesting answers to a few of her questions regarding the project:</p> <p><i>Aloha,</i></p> <p><i>Yes, we are still participating . . . We'd like to see the best job possible to restore our precious historical bridge n our native practices n cultural values preserved. Thank you for your kind considerations n keeping us in the ground floor.</i></p> <p>Ms. Libre provided edits, and the following questions in her email:</p> <p><i>Will it remain jus two lanes?</i></p> <p><i>Is this annual maintenance or natural disaster damages repairs, or damages from Monsanto container? What's the portion of liabilities?</i></p> <p><i>Will historic integrity be maintained?</i></p> <p><i>Any lane additions or walk ways?</i></p>

Name	Affiliation	Comments
		<p><i>How big R buffer or conservation zones? Who will maintain these areas?</i></p> <p><i>How long is work n will there b a cultural consultant or assessor b present during work or at various times?</i></p> <p><i>Will there b monitoring of water n habitat integrity (ie . . . turbidity, salinity, migration impairment, community notification of events work, practices interruptions, pollution...)?</i></p> <p>CSH replied on 13 April 2016 to Ms. Libre:</p> <p><i>Aloha e Rhoda,</i></p> <p><i>Thank you so much for sending us the corrections to the summary and transcription. Kala mai i'au, I noticed in my previous email I said edits to 'summary' too, I should've said 'transcription' only instead! I'm so sorry for the confusion, and you had to send summary edits again. But I finished all the edits to both the summary and transcription, and I will be including all your concerns in the 'Impacts and Recommendations' section of the report. Once again, mahalo . . . Aulii and I both truly appreciate all your guidance and all the help you have provided us!</i></p> <p>CSH forwarded Ms. Libre's questions to CH2M HILL on 13 April 2016.</p>
Pa'akai	Traditional salt making organization in Hanapēpē	<p>Left contact information on website 11 August 2015</p> <p>Client revised letter and figures sent via USPS 31 August 2015</p>
Rodrigues, Hinano	Branch Chief of History and Culture, DLNR – SHPD	<p>Letter and figures sent via email 17 August 2015</p>
Santos, Frank and Abby	Traditional salt maker in Hanapēpē	<p>Letter and figures sent via USPS 12 August 2015</p>

Name	Affiliation	Comments
		<p>Client revised letter and figures sent via USPS 31 August 2015</p> <p>Interviewed and authorization form signed on 14 December 2015</p> <p>Mailed revised letter and figures via USPS, notifying of change to project area on 21 March 2016</p> <p>Emailed drafts of transcription and summary for edits or final approval on 22 March 2016–24 March 2016.</p> <p>Emailed copies of revised letter and figures discussing change to project area on 4 April 2016; requested edits/approval of transcription and summary</p>
Santos, Kaliko	Community Relations Specialist, OHA Nā Kuleana o Kānaka ʻŌiwi (NHO)	<p>Letter and figures sent via USPS 12 August 2015 to both organizations</p> <p>Client revised letter and figures sent via USPS 31 August 2015 to both organizations</p> <p>Second letter and figures sent via USPS 30 October 2015 to both organizations</p>
Trask, Mauna Kea	Kōloa Representative, Kauaʻi-Niʻihau Island Burial Council (KNIBC)	<p>Letter and figures sent via USPS 12 August 2015</p> <p>Client revised letter and figures sent via USPS 31 August 2015</p> <p>Second letter and figures sent via USPS 30 October 2015</p>
Yap, Keith	Chair, KNIBC	<p>Letter and figures sent via email 17 August 2015</p> <p>Client revised letter and figures sent via email 31 August 2015</p>

5.4 *Kamaʻāina* Interviews

The authors and researchers of this report extend our deep appreciation to everyone who took time to speak and share their *manaʻo* and *ʻike* with CSH whether in interviews or brief consultations. We request that if these interviews are used in future documents, the words of contributors are reproduced accurately and in no way altered, and that if large excerpts from interviews are used, report preparers obtain the express written consent of the interviewee/s.

5.4.1 Summary of Frank and Abby Santos Interview

Mr. Frank and Abigail Santos participated in a “talk story” session recorded and conducted by Aulii Mitchell of Cultural Surveys Hawai‘i Inc., on 15 December 2015. This “talk story” session focused on cultural impact assessment (CIA) for the Hanapēpē River Bridge Replacement project, Hanapēpē Ahupua‘a, Waimea District, Kaua‘i. The following is a summary of the interview conducted in 2015, and a follow-up made in 2016:

CSH was graciously hosted at the office of No Ka Oi Landscape Services owned by Mr. Frank and Abigail Santos in Hanapēpē just *makai* of historic Hanapēpē Town. Born in 1948, Mr. Santos was born in ‘Ele‘ele to Frank Santos and Sarah Loa. His father is from Kaua‘i and his mother is from the Loa family of Hilo, Moku Ola or Coconut Island as it is referred to today.

Frank is a landscape contractor and the owner of No Ka ‘Oi Landscape Services in Hanapēpē. Mr. Santos is *kama‘āina* to the lands of ‘Ele‘ele. He raised his family on the lands of both ‘Ele‘ele and Hanapēpē. His father worked for the Kauai Commercial Company out of Port Allen. Kauai Commercial ran the biggest trucking company out of Port Allen. His father was a truck driver for Kauai Commercial. Port Allen was also the biggest port on Kaua‘i during the mid-twentieth century. His father’s time with Kauai Commercial at Port Allen was a busy one, as all the boats docked in Port Allen. While Hanapēpē may be considered by some a little country town, in reality the town was a hive of activity, especially due to boat traffic generated by nearby Port Allen. Mr. Santos considers Hanapēpē the biggest little town on the island. Hanapēpē Town was known for having an active night life scene with two movie theatres, a skating rink, dance halls, laundromats, two pool bars, and many drinking bars. In many ways, Hanapēpē was the capitol of Kaua‘i in those days.

Mr. Santos recalled there were always people on the bridges at that time; one of the first hotels in Hanapēpē was located near the bridge, generating additional foot traffic in the area. The Santos ‘Ohana attended the Mormon Church near the bridge. Mr. Santos acknowledged that the bridge was always an active thoroughfare, used to go to and from the family home, park, beach and church. Mr. Santos shared the following words on what changed in Hanapēpē Town:

Well what happened is in those days Līhu‘e merchants had to pay all these trucking fees from Hanapēpē to Līhu‘e, so they wanted to change that so they wanted a new dock open in Līhu‘e, so when they got the new dock in Līhu‘e open most of the boats transferred to centralize in Līhu‘e so it was easy for the trucking to distribute between the island itself, Kapa‘a, Hanalei it became more centralized so most of the shipping moved to Līhu‘e so Hanapēpē started to dye [*sic*] out as far as activities, people [...] there was not much night life already because of the harbor closing down. We also had the airstrip in those days, Burnfields, so we had all this plane traffic coming into Hanapēpē and this boat traffic coming into Hanapēpē, so Hanapēpē was the biggest city of the island in those days with a lot of activities going on in that area.

The conversation led to Mr. Santos sharing past or present land use that he has witnessed or experienced in his lifetime. He mentioned that the bridge is the main highway connecting the westside with the eastside. The bridge itself served as a gathering place for the old fishermen and they would throw net off the bridge to catch *moi* (threadfish; *Polydactylus sexfilis*) and mullet. The bridge was the favorite spot for the mullet fisherman. Every day the fisherman could be seen with

their throw nets, waiting for the mullet to run under the bridge. The bridge was also used to catch crab. Mr. Santos noted that people still crab off the bridge, catching Samoan crab (*Scylla serrata*). Children of *kama'āina* families are known to set their crab nets, go home and come back to check the nets. Mr. Santos shared the type of net used by the children, a readily available and affordable round-mesh crabbing net. Both the swinging bridge and river bridge in Hanapēpē were utilized to catch the prized Samoan crab.

The vegetation along the rivermouth consists mainly of invasive mangrove (*Rhizophora*). According to Mr. Santos, the mangrove is starting to take over the river banks. He recalled there was nothing along the banks before the mangrove. Mr. Santos continued to share that in those days, paddle canoes were used to go up river, and they all knew the good crabbing areas along the bridge and up the river. Mr. Santos was a good fisherman and recalled the varieties of fish he would catch in and around the mouth of the Hanapēpē River:

I was one good fisherman. I used to catch *āholehole* [Hawaiian flagtail; *Kuhlia sandvicensis*] and *moili'i* [baby *moi*] and *papio* [juvenile crevalle, jack, or pompano] all in Hanapēpē River. All through from the river mouth and back up the river mouth is not even a mile or so from the bridge, so a lot of fish can come in through river and spawn in the river and go back out so that was our fishing area right there during when I grew up, Hanapēpē. In those days the ball park was right down the road so we had to walk over the bridge practically over the bridge every day you would try check if you can see some fish or crab you know from the height of the bridge was a good look out advantage area and looking at the fish coming up the river. Yeah that was a good advantage point looking down the river or up the river which way the fish was traveling. You know the bridge was like a playground for us we always had a look over the bridge and check the fish.

According to Abigail Santos, the Hanapēpē Bridge was built in 1933. Mr. Santos commented that there was always a unique historic look to the bridge. At one time it had lamps that lit up at the entrances. It was very eye catching at night time and looked beautiful lit up in the evening. People often fished at night off the bridge in the early years. It was also mentioned that in those days numerous activities revolved around the ocean and the river. Mr. Santos remembers there used to be populations of *'opae* (general name for shrimp), *āholehole* and *'o'opu* (general name for fishes included in the families *Eleotridae*, *Gobiidae*, and *Blennidae*); the river played an important role in daily family life, especially their childhood years. His mother loved her Hawaiian food from the ocean and river, so her son, Mr. Frank Santos, would walk with a one-gallon can and fill it with enough food for the day. His prolific catches were attributable to his knowledge of the whereabouts of abundant fishing grounds; Mr. Santos shared about his fishing *ko'a* (fishing grounds):

I used to go with my bread and feed the fish off the bridge, feed the *āholehole* to train them. I had my spots where I would go there to feed them every day and then when I go back there I would catch enough, five, go somewhere else catch five more.

We all had a chuckle as Mr. Santos recalled he once made a roof iron canoe, with *hau* (beach hibiscus; *Hibiscus tiliaceus*) wood from the *hau* tree to paddle up the river. The real humor is that

if it had a leak, one just used tar to patch it up. Many others also had canoes in those days to travel up river and set crab nets.

Frank had learned cultural practices as a child. In his youth he was very in tune with many of the old Hawaiians and learned the culture through them. Frank has always been attracted by the ocean. Another cultural fishing practice witnessed by Mr. Santos was the *hukilau* (seine). In those days, the *hukilau* was practiced in Hanapēpē Harbor. At the *hukilau* they caught *akule*, and in Frank's time the *akule* were dried down the beach on the clotheslines. Drying lines were stretched from coconut tree to coconut tree and with the salted *akule* on the top; there would also be *opelu* and *halalū* drying on the lines as well. He explained that in those days, all families came together and would *hukilau*. Everybody would go down to the river mouth where the boat launch was and set their nets. Although he was a small boy in the days of the *hukilau*, he remembers it was a lot of fun with all of the people helping each other out, and sharing in the traditional way.

Mr. Santos mentioned that in those days in Hanapēpē, the Japanese fishermen owned the Namashi Fishing boats. They would sail the boats off from the bay and the sand bar. The boats had long lines that the fishermen would set out, sailing the harbor and dragging hooks on the line, trolling for fish. Frank also spoke about night fishing:

You know, in those days, no TV, so everyone would go down to the big pier and set up their area for the night and wait for something to bite, weoweo [*sic*], when they came in, had a lot of *opelu*, you know, *akule* [was] caught from the big pier. Those were the old days when Hanapēpē Bay was all sampans, the old boats was all the sampans. The sampans would come up the river. Had a couple of guys who lived up the river and they could drive their sampan all the way up the river and park along the river and close to their house area. The sampan can travel under the bridge all the way up the river to the swinging bridge.

The consultation with Mr. and Mrs. Santos also included a discussion of the resource gathering practices that are still continued today, especially in the vicinity of the Hanapēpē Bridge. Mr. Santos advised that people in the community still use the waterways for catching crab, using throw nets and the flat boats, waiting for the fish and looking for different areas to throw their nets. He mentioned that even though the river gets shallow at times, people still use boats to navigate up the river, and many stand-up paddle board riders practice up the river. He added that a local canoe club is also based at the end of the river.

The focus of conversation shifted to the salt ponds of Hanapēpē. Mr. Santos has been a salt maker at the salt ponds in Hanapēpē for over 60 years. He was taught by his parents and the old *kūpuna*. Utilizing a portion of the 1996 Hanapepe USGS 7.5-minute topographic map as a reference point (see Figure 1), Mr. and Mrs. Santos presented the following *mo'olelo*, describing his family's history and association with the salt ponds of Hanapēpē:

We have been doing that you know. There is 23 original families that have areas in there, *kuleana*. Right here, this water area right there (pointing to USGS map), so all the families have little areas in there and we do that every summer when the dry season, [it] dries it up. We all go in there and work our little areas up. In the winter it is all wet. So the areas will all be passed down within the families, like my areas will be passed down to my kids, and then my grandkids will inherit that, so it stays within the families.

The history to the salt patch, it goes way back. The story to that is it was shown to a little girl who was fishing in the area and she caught so much fish over there at salt pond and she didn't know what to do with her fish, so this old lady seen her one day and told her don't cry and I'll show you what to do with your fish so she dug a hole in the ground over there and told the girl to put her fish in the water and when she did that, then the water turned into salt so it preserved the fish, so the lady was Madame Pele. She taught her that area had salt and from there that is how the salt ponds grew. The old Hawaiians started to expand the area and [started] making beds. We actually get the water from underground, the water comes out in wells and we take that water out of the ground and we do beds above ground, which is made from clay that is found only in that one area.

So the clay . . . we work the clay to make clay ponds and back the ponds in the sun, then we add the water to that and the water ferments and crystalize and settle on the bottoms of the pond that is how we get the salt it accumulates and then we harvest the salts. It is a farming method in doing the salt making, and that is the only area in the whole state of Hawai'i that does it like that. As the summer goes through, the water content gets real salty that this water has this brine shrimp that lay their eggs in there and the shrimp hatches. The opae that is the secret in the Hawaiian salt it makes the salt sweet, it changes the salt to a sweet taste. It is not really a salt it has more of a sweet taste to it and that is Hawaiian salt. So the salt, we do it in the same traditional method, we use stones to rub the clay we use all our hands. Then the salt all what we make we give away. We no sale nothing, we give everything away. At the end of the year I no more nothing, I give it all away and that is the part in sharing that.

So now I still do it. I teach all my kids how to do it, and taught all my grandkids how to do it, and I'm still teaching other people who willing to learn and come listen to us and work the ground and work the 'aina in doing it. I was taught by my dad to share that because if you don't share that you lose the culture, you lose how to do it. Now there is a lot of people there [where] the kids [are] coming back now, trying to identify themselves and their 'āina and don't know how to do it, because nobody taught them, nobody wanted to teach them so they lost that, you know. And to preserve the area you need to teach. The only way to preserve there is to teach other people how to do it and the importance of it and then they understand why you should preserve and protect it, and what we trying to do is to educate more people and have them to learn and how to preserve that. So that is a real important part in my Hawaiian culture right here in Hanapēpē. The salt is so important. What we make, we send it all over the world, we share it to all kind people. Tourist come and they come to that place and say, 'Oh I need some salt to take back with me.' When you give Hawaiians they say, 'Oh this is gold!' In the old days you get the sour poi on the table and a little bit *pa'akai* and everything else taste good.

After the above discussion, Mr. Santos continued to share that Hanapēpē was also famous for agriculture. He recalled a time when Hanapēpē was well-known for its rice patties. The Chinese who had immigrated to Hawai'i in the mid-nineteenth century had used the whole valley, cutting the banks along the river to grow rice. Hawaiian families also used these irrigated terraces to grow

kalo. Mrs. Santos interjected during the discussion of agriculture, asking Frank to talk about agricultural history in the vicinity of the Hanapēpē Bridge, and include discussion of chickens, pigs, and now the nursery. Mr. Santos quickly responded, sharing that there used to be a chicken farm within the area. According to Mr. Santos, beginning in the 1930s and 1940s, and continuing into the 1960s, there was a pig farm (in the location of the current Kauai Nursery). He also mentioned that watermelons were once cultivated in the area as well.

Discussions also turned to the old train railroad used to move sugar from the plantations. Frank shared that the main train track used to run over the bridge, and eventually connected to the pier, where the processed sugar could then be shipped. In the early years, the train would run all the way back to the harbor. All the bags were put on the trains, they would run on the west side down to the harbor, and then be loaded on the boats anchored in the harbor. Mr. Santos described the sugar bags being unloaded at the harbor, as 100-pound burlap bags. There once stood a facility for storing the processed raw sugar, and from there it would be taken down to smaller boats, and then taken out to the bigger boats. Young Brothers and many other longshoreman came to Port Allen, as it was the major port at that time, and moved goods such as sugar onto the boats.

As the “talk story” session moved forward, the topic of surfing surfaced. In his early years, Mr. Santos was a surfer. He explained that before the fiberglass boards came out, surfers used plywood surfboards, surfing by the river mouth and at breaks further out in the bay for bigger waves. Surfing was a big thing in the early days of Hanapēpē Harbor.

Mr. Santos explained that today, due to tourism, the harbor has changed, becoming a much larger port over time. Within the past 15 to 20 years, Mr. Santos has observed the tourism industry pick up on Kaua‘i, with the tourist charters now going to the Nāpali Coast. As a result, these chartered boats must dock at Port Allen Harbor, per safety regulations.

Discussion moved on to the possibility of any cultural or archaeological sites being impacted by the proposed Hanapēpē River Bridge project. Mr. and Mrs. Santos shared that anything of importance would be *mauka* of the bridge project. Mr. Santos shared his *mana‘o*:

Along this hillslope is all burial caves, yeah (pointing and marking on map). Well this is the Hanapēpē cliffs, the Heights right here, this is the valley along this cliff line this was all burials, that is going up Moi Road. This road goes up the hill. The caves are right on top the *pali*, right here this is the top of the Heights and this Hanapēpē Valley down here. Going up the Hanapēpē Valley there are a lot of burials within the cliffs all the little caves are in the cliffs there. So all this mountain range right here [referring to USGS Map]. I remember when I was a kid had this Irish guy who lived right here who married a Hawaiian lady. It was right up here on the road and he worked for the county and he was a grave digger, you know he went through a lot of the graves dig out a lot of the Hawaiian graves and he had a collection of Hawaiian artifacts, poi pounders and all kind stuff in his house right there. Back in the 60s we had a big flood, Hanapēpē River flooded and the flood went around all the house [...] came by his house and took his house out, and everything went down the river. It took everything from him, and then went down the river. He died earlier than his wife. I remember that guy, Uncle Ray Koa.

The Santos family purchased a piece of property near the nursery where their children and grandchildren enjoy spending their weekends, oftentimes fishing and crabbing in the river.

Another cultural site was mentioned in relation to the salt pond area, at Puolo Point. This site was described as being a *leina* or place where the spirits of the deceased leapt into the next world. The only trails mentioned in the discussion were those that led up into the valley interior. Nearing the end of the “talk story” session, Mr. and Mrs. Santos voiced their concerns and recommendations for the proposed Hanapēpē Bridge project:

We have so much traffic going through the west side now. The west side grew so much [that] the traffic [...] that even [...] we have to pull out on the road. It is dangerous. It is hard to pull out on the road it is so dangerous, especially right here, there is a four way going right here in town. It is hard to do that because of the traffic coming from the west side. Well, you know the gas pump right there [Waimea side of Hanapēpē]. Everybody pulls into that gas station right there on this (west) side of the bridge, right there get one gas station, right by the bridge. That is a confusion area when people pull out and pull in the gas station right there. We get this back road, Aiona Road that comes out too and it is so hard to pull out right there on Aiona Road, the road right before the gas station. The road comes right into our property in the back here. With this bridge now it is really hard to enter on to the highway cause of the traffic. You really have to wait and wait and wait for all the cars to go on to it is safe just to pull on to the highway right there. The line of sight is poor, when you come out because it is like a little slope thing there. People are driving too fast through Hanapēpē, everyone is in a big rush to drive through Hanapēpē. If you put a bigger bridge it will make it worse. People just drive so fast.

Right over here by the library and church that comes into this property here. There is a cross walk for people cross from the library into the town right there so if a car stops there to let the people cross, people pass around the car. That is very dangerous. You can get banged. All these other roads lead on to the main highway so it is dangerous pulling on to this main highway. Before it was okay was less traffic, but now there's so much traffic going Waimea and so much agriculture farmers from Waimea that let out traffic. There is the small area here where there is four way intersection there is so much activity here because the library is there and they have expanded the library and of course the community has grown and there is more people using the library and across it the church. The church has the Tūtū and me program and they have the hula there. There is so much activity coming in and out of this parking lot and it is actually a road, between when you go out you will see. On the right hand side is the library and the left hand side is the church and in the middle is supposed to be a road called Kona Road, but the county is not claiming it, and the state is not claiming it and there is a big pot hole in the middle of it so nobody, the state won't repave it or strip it, neither will the county, but it is really a road, so that is an issue.

Another problem is that when you leave and you want to turn left there is a bus stop right on the left and so when you are trying to leave and you want to turn left and if there is a bus there it is a huge blind spot, so it really unsafe. So once they start construction on bridge and it is not planned out for this particular area with going into Hanapēpē Town with all the Tūtū and me and the hula and the library where

they lecture all the time, so there is a lot of people drawn into the area for those lectures, it is just super, super dangerous. So when they do construction on the bridge the traffic is going to back up in either way. So then the local guys go through the town bridge, and rush through the town to the old bridge trying to get around the bridge traffic. They know the construction going be here so they going to take the town road around the construction but then it still will jam up everything.

We recommend they work at night. Once they do it with a temporary bridge it is going to be a small bridge so that traffic is going to be backed up to the other lights and even back to other light here. One thing is the speed limit with the people driving on the new bridge on this highway right here to slow down more getting through Hanapēpē and more, better signage maybe. We still want to see it have some kind of historic quality to it.

The cross walk doesn't even have lights in front of the library. Traffic has always been a nightmare when they work on this bridge. So the temporary bridge I don't know how they are going to do that but that is going to be even worse. They have to keep the look of the old bridge. You know there is the sides of the bridge they are so beautiful for them to incorporate that into the design. I think when people drive from Līhu'e and they start to come to the west side it just gets quieter and people do start to feel that, and people do start to slow down. Once you past the bridge your eyes are automatically attracted to the river, look out the ocean.

The “talk story” session concluded with CSH thanking the Santos family for sharing their knowledge, concerns and recommendations. We were reminded that this kind of “talk story” is important not only for the CIA and the proposed project area, but for the current and future descendants of Mr. and Mrs. Santos. It was recommended that the summary conclude with a final thought and recommendation from the Santos *'ohana*:

A final recommendation is to keep that view [...] open; when they make the new bridge, the view plane from mountain to sea. It is such a beautiful view. That would be so sad if you lose that. [...] Because the rails of the bridge is so low, in the car you can see the river mouth and the ocean, and that is why you want to keep that because Hanapēpē is still rustic, it still has that country look, you want to still be country look. It is still a nice community.

5.4.2 Summary of Rhoda Makaanani Libre Interview

Ms. Rhoda Makaanani Libre participated in a “talk story” session with CSH on 16 December 2015 at the Kaua'i Beach Resort (KBR) in Līhu'e on the island of Kaua'i. Her willingness to share her *mana'o* and concerns was greatly appreciated. The following is a summary of her interview, highlighting information on culture, history, and her concerns regarding the Hanapēpē River Bridge project. Today, Makaanani serves on the board for the Marine and Coastal Advisory for the State of Hawai'i.

Mr. Felix Albarado Libre and Mrs. Fely Guerrero Libre gave birth to a daughter, Rhoda Libre. On the third day of her birth, her parents brought her to their home in the lands of Kaumakani, officially known as Makaweli. Ms. Rhoda Libre was raised in the *makai* and *mauka* regions of Kaumakani, Makaweli, and Kō'ula, in the district of Waimea. Rhoda's mother, Fely Guerrero

Libre was born at home in Kaumakani and her father, Felix Albarado Libre was born in the lands of Kekaha. Her ancestral heritage stems from the Philippines, China, Spain and Italy. Rhoda Makanani's ancestry is evident in her beautiful features. On her mother's side, Makanani's grandfather came to Hawai'i at the age of 14 years old and worked at the Olokele Sugar Mill in Kaumakani. Her father's side is from the Visayas tribe of the Philippines.

Traditional practices came natural to Makanani while growing up in Kaumakani. Her family is connected to the mountain and the sea. The *mauka* regions were used for the gathering of medicinal plants she referred to as *lā'au lapa'au* (Hawaiian healing medicine) and, she chuckled while adding that the *makai* region was utilized for fishing and traditional *ho'okupu* (growth). Taking care of the land was always a part of her life because her grandfather was in charge of all the water, including the diversion dams and the *'auwai*. Makanani learned, as westernization began to impede on the natural resources, food sources and habitat, the *maka'āīnana* still held and maintained the resources by adhering to cultural practices and protocol. Her family utilized resources from the *mauka* and *makai* regions of Hanapēpē. Along the river, up into the valleys, Makanani and her family would gather *'a'ama* (black crab; *Grapsus grapsus tenuicrustatus*) and *'ōpae*. The family often ventured upland to collect *laukahi* and various ferns. Makanani pointed out the importance of the presence of *'o'opu* and *'ōpae* in the river water. Their presence is the primal indicators of a healthy and functioning watershed. Other marine and aquatic life included Samoan crab, mullet, *akule*, and *'ōpelu* (mackerel scad; *Decapterus pinnulatus*). Round nets were used to catch crab, and a fishing pole was used to catch mullet. She recalled that it took three or four people to gather from the sea; often she would accompany her grandfather, grandmother and their many friends, such as Mr. Kanahēle. Makanani remembered,

I remember Kaumakani, Hanapēpē, and Pakala, guys would get together with the *i'a* [fish or any marine animal]. Over here was a different type of caring because it was all sacred area. As a place of healing, and over here the stream. Over here had one more stream and they killed it all. If you look at DAR [Division of Aquatics] and USGS, the older ones, you will find water. You know the tributaries whether they're perennial, whether their annual, nonetheless the tributaries that added towards that *ahupua'a* which have evidence, historical evidence, to which *kānaka* [human being] had villages, or point of fisherman's point, right over here [pointing to the map], and fisherman's point over here cause if you look over here you can see all the way down here so you know that's how they communicate.

Makanani quickly followed with a statement regarding food supply. Food supply is key to sustainability, including the maintenance of nurseries of *limu* (seaweed) in the coastal waters. As a member of the Marine and Coastal Zone Advisory Council for the State, Makanani stated,

We already identified that already it's all hot zone especially here and some portions of Kaumakani. Hot zone, dead zone and then roof and pyramids already registered. And so now we already registered some native species with their numbers near decimation. You know, so we working with DAR and um UH, under DLNR. So we work pretty much lateral consistency as far as *ahupua'a*. Where Kauai Westside Watershed comes in. We have been doing this since 1992 after the hurricane when I came home from the mainland, and going to college and the *kūpuna* came because I am from over here, Kaumakani, right here. Coming from

here that's my house, 86 [laughter] and so our *kuleana* is all over here, and our house, we have another house over here, Hanapēpē, Kō'ula Road.

According to Makanani, the community has always had problems with commercial boats, and commercialization has always been an impediment. In her lifetime she has witnessed various agricultural and conservational efforts within the area. She refers to the greenway, a kind of buffer zone, that is especially important to have when dealing with environmental science and hydrology, and serves as a protective corridor when river levels fluctuate. She recalled the corridor was usually 1,000 feet, and from the ocean, it was located a 1,000 yards from offshore fringing reefs and/or migratory stops (for migratory bird species). Makanani points out that the greenway has already been impeded upon by the placement of rocks. She noted they have not restored the buffer, and there has been no remediation since the Federal government's most recent work in the area. Since 1992, there has been at least three attempts to commercialize the river area.

Regarding conservation, she believes stability needs to be engaged with; stabilization of the river environment cannot occur while obstructions such as the impeding the migration of native species, and the failure to fully evaluate the impacts of development on native species, water quality, and cultural practices, are allowed to remain. Makanani reiterated that cultural practices are still ongoing in the area. These ongoing practices involve *lawai'a* (fisherman) and *mahi'ai* (farmer). Makanani shared that the *lo'i kalo* (taro terrace) are still present. The problem lies in the illegal diversion of water, so now the 'o'opu numbers have dropped, a direct result of less water in their nurseries. She recalled in her youth watching great runs of juvenile 'o'opu, also called *hinana* (young of 'o'opu):

That's why we have big numbers, I mean, overwhelming numbers. You stand from the back bridge and you just watch in the shadows. We would stand over here. Here is the gas station and the gas station used to be. There is a gas station and they lived before they sold them to Kaikapu, was Japanese and then my grandfather's good friend and I was good friends with that boy over there he lived in that first two houses, the grandmother and grandfather, and we got the little boat and we can see all the *hinana* runs so we would go up there and go fishing, crabbing, and come back down.

Makanani passed on stories from her father and grandfather, describing how in their time, the river was much wider and deeper and they used sampans to navigate up river. Makanani remembers how much cleaner the water was, and the long black/dark green *limu 'ele'ele* that once thrived in those waters. She also mentioned there were two kinds of *limu*, one which is fatter, and the other which is more round. The family gathered a lot of *limu* because they knew when the season was coming. Different varieties of *limu* were gathered by her family; such *limu* was a favorite of her family. They gathered sustainably from more than one place, assuring that each area could then reproduce for the next year. 'Opihi (limpets; *Cellana talcosa*, *C. Sandwicensis*, *C. exarata*) was also gathered at specific time of the year, and is still gathered today.

Makanani mentioned other cultural practices, such as *he'e nalu* (surfing), and an occasional surfer might be seen from time to time. The practice of *hula* is still ongoing throughout the district of Kona. She also mentioned knowledge of *heiau* dedicated to the *hula*, and these can still be found in the forest lands. Makanani is a *hula* student of *kumu hula* Joseph Kahaulilio and *kumu hula* Roselle Bailey, but today, here in Hanapēpē, the known *kumu hula* is Kapu Kinimaka Alquiza.

CSH was enlightened on the formation of the Kaua'i Westside Watershed Council. The Council meets every Tuesday night at Hanapēpē Library. Makanani shared,

We have an agenda, you know instead of adding always to new business it's a target to accomplish all the old business which is the master plan. The master *ahupua'a* plan, which has thousands and thousands of hours of meetings and thousands of lives ready. It was founded by our *kūpuna* and my tenure was only in the 90's actually from the 60's because the *maka'āinana* mines is Kaumakani to the salt pond over here. It is cared for by my sister-in-law's family.

Makanani advised CSH, during the conversation regarding legends, that such legends are best heard from the *kūpuna*, especially about the *hula*. Makanani did recall there was a *hula* platform near an old rare *wiliwili* tree that a particular Hawaiian man used to care for, using the seeds and trying to plant them.

During the discussion, the topic of trails reminded Makenani of gathering for particular *lā'au lapa'au* that had led her *mauka* to *makai*. She mentioned the possibility that these trails were ancient in age, for these trails are still cared for today. After the discussion of any trails that might be considered ancient, the session soon focused on community concerns and some recommendations Makenani had for the proposed project:

Well we would like to be on the ground floor with the planning and whatever we can be of assistance because the integrity of the water is held upmost, [relates] to the integrity of the *ahupua'a*. And that is our mission statement to make sure and maintain the integrity of the habitat. It is very important that the Kaua'i Westside Watershed Council should be informed. We are an intergovernmental and interagency cultural protocol. We represent the Hanakaumaka Pu'uhonua.

It is so important to [en]sure their conservation plan is congruent to watershed practices, yes, *ahupua'a*. When you are building you need to consider the weather. All of that. What kind of materials will be placed in there? What kind of time, and consideration for the traffic flow, because it's on time, issues in the morning and the afternoon and especially in the late afternoon. Then work time, and then the triviality and the solemnity, and the impact to the depth not only on top, within, and below, but in that area besides the cultural practices and the safety mostly. Now my question would be with this one, is this just maintenance, or is this enhancement, or is this a repair to the past 200 year flood that we had to which a container from down hit the bridge then hit that big bridge and went out to sea? There were two containers and one in, I am not sure if it is still in there and I am not sure if they pulled it out, but that one we witnessed hitting the bridge. We were all there and all the cops were there. Because we are a small community you know Brittany and I, and my sister-in-law and all of us went and we saw that.

We would like to see the historic look of the bridge kept with the enhancement of preservation. The view plains [*sic*] are very beautiful, our view plains [*sic*] are protected and preserved. One can stand on the bridge and see the 'o'opu and 'ōpae migration and making the quality of water very important. Another item very important is to build a formula and the balance of the chemical formation of the biota from top to bottom. Consistency is really important because they are born and

raised up there and they are coming down, they are born and raised and they are heading back up. It needs to be consistent because if everything is all natural and good and holistic as it should be. With the amount of numbers you see shadows now, you never see anything. You see a little thing, ooh! The numbers! That's not even 100.

In Makanani's parent's time, culture was a little bit different due to the practice of cultural assimilation; many locals wanted to be more American. If a family had five children, sometimes only one of the children would adhere to full *ahupua'a* practices and full cultural protocol, instead of the prevailing western ways. Her grandparents adhered to cultural practices due to a belief, whether Filipino, Hawaiian, Chinese, or Polynesian, of a commonality of the most holistic paradise which is *momona nā mea 'ai*. Makanani was taught that it is all universal. Whatever environment one is surrounded by, whether water, mountains, or land, everyone is an island, for that is what she was taught. She was taught to take care and replant when gathering from the mountains and while gathering *limu* from the sea. As children they were taught to only take what was needed, not to overfish, and that is the way of the *maka 'āinana*.

At the end of the discussion, the conversation shifted to the concerns of the community during the proposed replacement of the bridge. Makanani hopes it will not lead to any contamination of river water or the sea. She voiced the need for a conservation plan consistent with the current water quality. She explains,

As a laymen it depends on how you build it and what you put, right? For example, if you put things that are porous or are readily impacted by water or temperature you know that will impact the water or when the people can't go over there and fish. But then you know, the thing is when CH2M Hill does all of that of course we are going to be aware on what is needed.

Makanani concluded with the following:

The 'o'opu and *limu* and their migration, feeding, habitat and nursery grounds are vital indicators to the integrity of the waters that lead to the shoreline and reefs, and surrounding waters and biota of this bridge. Turbidity, pollution, foreign matter introductions of biological, chemical, or physical [in type], is important to consider, as well as native gathering and practices. There is no commercial activities or kayaks, motor powered vehicles, paddle boards or any intrusions to native habitat [...] migration, and practices. Please keep me abreast of any actions in regards to this project or any developments in consultations in the Kona Moku. Your considerations are appreciated, and thank you kindly for consulting the lineal and cultural, regional *maka 'āinana* of the Hanapēpē area. These waters and areas are sensitive and fragile environment[s], [...] quite beloved and revered by our people of this *ahupua'a* (that includes air, ocean, *muliwai*, and activities). *Mahalo loa*.

During additional consultation with Makanani regarding the 0.15-acre change to the project area, she voiced additional concerns:

Will there be any additions to lanes (i.e. car, bike, walk path) and has an assessment to the damages made by Monsanto containers during past flood that hit both bridges [and] spilled chemicals into waters [and] soil [and] reefs? Irrevocable injuries to

bridges, food supplies, practices, and habitat were evident [and] should [be] addressed.

While providing final authorization of her summary, Makaanani reiterated her concerns via email, requesting answers to a few of her questions regarding the project. The list of additional questions were as follows:

Will it remain just two lanes?

Is this annual maintenance or natural disaster damages repairs, or damages from Monsanto container? What's the portion of liabilities?

Will historic integrity be maintained?

Any lane additions or walk ways?

How big [are] buffer or conservation zones? Who will maintain these areas?

How long is work and will there be a cultural consultant or assessor present during work or at various times?

Will there be monitoring of water and habitat integrity (ie . . . turbidity, salinity, migration impairment, community notification of events work, practices interruptions, pollution)?

Rhoda Makaanani Libre's, as well as the Kaua'i Westside Watershed Council's concerns were forwarded to CH2M HILL (acting on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD) to be addressed.

5.5 Summary of *Kama'āina* Interviews

Based on the Santos 'ohana and Rhoda Makaanani Libre's reviewed and approved summaries, the following is a synthesis of findings within Hanapēpē Ahupua'a. All project consultants were notified regarding the change to the project area on 21 March 2016. The approximate 0.15-acre change to the project area had no effect on their *mana'o*; concerns and questions remained the same as those brought forth during previous consultation efforts.

Mr. Frank Santos and Mrs. Abby Santos were interviewed by CSH on 15 December 2015 at No Ka 'Oi Nursery, Hanapēpē. CSH followed up with Mr. and Mrs. Santos in a series of telephone calls on 22 March 2016. During these consultations the Santos 'ohana reiterated their concerns for maintaining the historical integrity of the Hanapēpē River Bridge, and for the full evaluation of safety risks and traffic impacts to the community at large, especially for those individuals and families who live and work in the vicinity of the bridge.

As a producer of *pa'akai* and an on-going cultural practitioner, Mr. Santos is acutely aware of resource gathering practices in the vicinity of Hanapēpē River Bridge. While discussing Hanapēpē River, Mr. Santos listed the varieties of fish and water resources he had gathered from the river or nearby *muliwai*. These included *āholehole*, 'o'opu, and 'ōpae. Mr. Santos explained that he had been a successful *lawai'a*, with knowledge of *ko'a*, favored fishing spots replete with *āholehole*. Mr. Santos additionally shared that many fisherman and young children utilize the bridge still, harvesting an assortment of fish and freshwater invertebrates. Local youth frequent the bridge to

catch the Samoan crab, an introduced species prized by *kama'āina* for eating. Mr. Santos advised CSH that the Hanapēpē community is still very much connected to the bridge and the waterway.

Fishing remains an important practice in Hanapēpē, however, it is just one of many cultural practices that continue to thrive in the *ahupua'a*. The Santos *'ohana* discussed their *kuleana* with CSH; they have been guardians of a salt pond in Hanapēpē for over 60 years. As *kia'i* (guardians) of this cultural site and cultural resource, they have over the years become familiar with many *mo'olelo*, and historical sites in Hanapēpē. They are not only *kia'i* for the salt pond, but for preserving *'ike* and *mana'o* regarding Hanapēpē Ahupua'a. Mr. Santos shared with CSH his *mana'o*, discussing the possibility of sites in the vicinity of the project area. Both Mr. and Mrs. Santos noted that sites, specifically burial caves, would be located *mauka* of the current project area. They also mentioned that a *leina 'o ka 'uhane* exists at Puolo Point.

Mr. and Mrs. Santos discussed their concerns regarding the project, particularly those regarding traffic, and the increased likelihood of pedestrian and motor vehicle accidents with the widening of the bridge. They noted there exists a tendency among drivers to travel at an unsafe and high rate of speed across the bridge. They fear that enlarging the bridge would only exacerbate the matter. The nearby library and church generate additional foot traffic, with many Hanapēpē residents required to traverse the area surrounding the bridge to attend cultural activities such as *hula* practice, and the "Tūtū and Me" program located at the church. Both Mr. and Mrs. Santos believe the bridge project may result in increased motor vehicle traffic. Increased motor vehicle traffic coupled with high levels of pedestrian traffic may result in accidents and/or roadway fatalities. They recommended work to proceed at night in order to avoid increased levels of motor vehicle traffic, and decrease the likelihood of pedestrian and/or motor vehicle collisions. Mr. and Mrs. Santos also recommended that the view remain preserved. They noted the view is not only beautiful, but is iconic for Hanapēpē, allowing residents to look on the river, *muliwai*, and ocean, and connect with the town's rustic, country roots.

Ms. Rhoda Libre was interviewed by CSH on 16 December 2015 at the Kaua'i Beach Resort in Līhu'e. CSH followed up with Ms. Libre in a series of telephone calls and emails on 18 March 2016 through 28 March 2016. During these consultations Ms. Libre reiterated concerns very similar to those of the Santos *'ohana* regarding the historic aesthetic of the bridge, and the view planes. However, Ms. Libre also added that work should proceed only if there has been full consideration of weather, materials, traffic flow, and safety, and the effects of construction work on the environment and cultural practices.

As a cultural practitioner, Ms. Libre is knowledgeable of gathering practices (of both plant and ocean resources) in the vicinity of Hanapēpē River Bridge, in Hanapēpē Ahupua'a, and in Waimea District. Ms. Libre recalled gathering many of the same river and ocean species described by Mr. Santos; she recalled gathering from the river and *muliwai*, collecting *'o'opu* and *'ōpae*. A species mentioned by Ms. Libre, but not mentioned by Mr. Santos, was the *hinana*. The Waimea District was renowned for this species of fish, prized for eating. From the nearby coastline both *'opihi* and *limu* were gathered, with nurseries of dark *limu 'ele'ele* near the river mouth. In addition to gathering ocean and/or river resources, Ms. Libre gathered *la'au* herbs, and plants for *ho'okupu* in both the *mauka* and *makai* regions of Hanapēpē Ahupua'a.

As Ms. Libre had made clear during consultation, traditional gathering practices continue in Hanapēpē. Fishing and gathering for *lā'au lapa'au* are but two of the cultural practices that

continue to thrive in the *ahupua'a*. Ms. Libre discussed the importance of *hula* within the area, including the presence of a *heiau* dedicated to the art form. Ms. Libre is currently a student of *kumu hula* Joseph Kahaulilio and *kumu hula* Roselle Bailey. It is most often the *halau hula* (schools of *hula*) that are among the most committed to the local ecosystems, understanding that the slightest change within the environment can have serious implications. The *haumana* (students) of these *halau* engage in resource management (through responsible sourcing of resources for costumes and adornment), and in so doing, develop a deep affinity for environmental conservation, binding them to *'āina* and *pana* (celebrate place). This affinity for preservation is held by Ms. Libre, and has inspired her work with the Kaua'i Westside Watershed Council. Ms. Libre has played a key leadership role with the Kaua'i Westside Watershed Council, influencing its formation in 1993, and now currently serves as *po'o* (chairperson) of the organization.

The Kaua'i Westside Watershed Council describes their responsibilities as follows:

Improv[ing] the conditions of watersheds in [Kaua'i, Kona District]. [...] represent[ing] the interests in the basin and be[ing] balanced in their makeup. Bring[ing...] together local stakeholders from private, [...] state, and federal interests in[to] a partnership [...] plan [for] watershed protection, restoration, and remediation strategies in a holistic way—from ridge top to ridge top, and from headwaters to mouth. [Watershed boundaries and responsibilities extend] to coastal areas [...] beyond the mouth of rivers entering into the sea. [...] Much of our natural resources extend to the coral reefs, wherever they may be in relationship to the coastal areas, as well as to the depths of the land mass under the ocean wherein mineral resources may be deposited. Through watershed partnerships, watershed councils can collaborate to identify issues, promote cooperative solutions, focus resources, and agree on goals for watershed protection and enhancement, and foster communication among all watershed interests. [Kaua'i Westside Watershed Council 2012]

As a concerned *kama'āina* who is keenly aware of environmental issues and cultural sites, Ms. Libre expressed her concerns regarding the project, particularly those concerns regarding construction materials, traffic flow, cultural practices, environmental impacts, and community safety. Ms. Libre additionally requested that the Kaua'i Westside Watershed Council be on the ground floor of planning, and that work should proceed only if there has been appropriate mitigation measures taken, including the full consideration of the impacts of bridge construction on the surrounding environment and community. She added that it should be made clear to the community and stakeholders the reason for bridge work, if it is merely maintenance, enhancement, or mitigation for a nearly 200-year problem with flooding in the area. Ms. Libre shared a few of the concerns of the Santos *'ohana*, mentioning that the “historic look” of the bridge should be maintained, and that views of the ocean should remain unobstructed. In follow-ups with Ms. Libre in March 2016, she stressed the interconnection of environment health and the continuation of traditional practices. During consultation she had lamented the loss of cultural practices through cultural assimilation as well as environmental degradation. The responsible management and safeguarding of the environment was of paramount importance to Ms. Libre; interconnections between environment and culture were inferred from Ms Libre's consultation. She concluded that only through environmental viability can the culture too, remain viable: “These waters and areas are sensitive and fragile environment[s], and quite beloved and revered by our people of this

ahupua'a (that includes air, ocean, *muliwai*, and activities)." Ms. Libre had numerous concerns and questions regarding the project. Her concerns included the following:

Will there be any additions to lanes (i.e. car, bike, walk path) and has an assessment to the damages made by Monsanto containers during past flood that hit both bridges [and] spilled chemicals into waters [and] soil [and] reefs? Irrevocable injuries to bridges, food supplies, practices, and habitat were evident [and] should [be] addressed.

During consultation follow-ups in April 2016 Makaanani reiterated her questions and concerns:

Will it remain just two lanes?

Is this annual maintenance or natural disaster damages repairs, or damages from Monsanto container? What's the portion of liabilities?

Will historic integrity be maintained?

Any lane additions or walk ways?

How big [are] buffer or conservation zones? Who will maintain these areas?

How long is work and will there be a cultural consultant or assessor present during work or at various times?

Will there be monitoring of water and habitat integrity (ie . . . turbidity, salinity, migration impairment, community notification of events work, practices interruptions, pollution)?

Her concerns were forwarded to CH2M HILL representatives (acting on behalf of the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD) to be addressed.

Section 6 Traditional Cultural Practices

6.1 Habitation and Gathering of Plant and Ocean Resources

Hanapēpē Ahupua'a is a land rich in freshwater resources with many streams and valleys that run *mauka* to *makai*. The Hanapēpē River empties into the sea almost immediately adjacent to the current study area and is the third longest river on Kaua'i.

Early historical documents describing traditional Native Hawaiian life give insight to habitation and settlement patterns. In 1792, Archibald Menzies, a doctor and botanist under Captain George Vancouver, described the grass fire burning in Hanapēpē. Captain Vancouver thought it was a sign of hostile behavior, but later learned it was an annual ritual to clear the plains of old *pili* grass so a new crop could sprout up. *Pili* grass was considered the best grass for thatching houses. John Weber, an artist on Captain Cook's third voyage to the Pacific, depicted thatched homes and villagers congregating (see Figure 17).

In 1972, anthropologists E.S Craighill Handy and his wife Elizabeth Handy, conducted a study of Native Hawaiian cultivation practices, beliefs, rituals, language, and culture. The team chronicled life in Hanapēpē Ahupua'a including speculation that the canyons of the area had a population of *kua'āina* (country people) who did not frequent the shoreline. Handy and Handy (1972:397) believed these *kua'āina* utilized the freshwater resources of the uplands and developed *lo'i* cultivation in the far reaches of Hanapēpē Mauka.

In the *makai* region of Hanapēpē Ahupua'a, the traditional practice of *pa'akai* or salt making took place. Hanapēpē Ahupua'a is still famous today for its salt pans; the Santos 'ohana still actively produce *pa'akai* in the traditional manner. Early recollections of Waimea Moku indicate the salt was used to cure meats, which were later taken onboard ships. Sandalwood was also traded to foreigners.

In addition to the production of *pa'akai*, the *makai* region provided a variety of fish and ocean invertebrates for consumption. Such species for consumption included *āholehole*, 'o'opu, and 'ōpae. The juvenile 'o'opu, known as *hinana* were renowned within Waimea Moku and throughout the Hawaiian Islands. Ms. Libre described netting numerous *hinana* during their great upstream runs in the Hanapēpē River. According to Titcomb and Pukui in *Native Use of Fish in Hawaii* (1972):

By the mouth of the river of Waimea, Kauai, was a multitude of men and women along the banks, for those were good days in which to catch *hinana* in nets. The fish were as plentiful as rubbish in that land when the *hinana* season came. The natives there call it 'ke i'a ili kanaka o Waimea' (the fish of Waimea that touches the skin of man). [Titcomb and Pukui 1972:122]

According to Māhele documents, 92 claims are listed for land claims in Hanapēpē Ahupua'a. However, only 66 claims were awarded (Soehren 2010). LCA documentation indicates settlement within Hanapēpē Valley, focusing on wetland taro cultivation given the ample irrigation stemming from Hanapēpē River. The majority of land was being utilized for *lo'i*. In addition, *pāhale*, *kula* lands (used for dryland crops such as sweet potatoes), *mo'o* with unspecified usage, pastures, gardens, *loko*, salt lands, and a pigpen were documented in LCA claims. Land claims indicate Hanapēpē Ahupua'a was an agriculturally productive area.

Rice cultivation began in Waimea Valley in the 1860s and peaked in the 1890s. Most of the rice crops were cultivated by Chinese farmers who continued to grow rice well into the 1930s (Handy and Handy 1972:405; Joesting 1984:206–207). A 1916 survey map by Fred E. Harvey depicts a large rice mill in LCA 3284 in the ‘*ili* of Kuiloa in Hanapēpē Ahupua‘a. Many taro lands were converted to rice fields, which resulted in a shortage of *kalo*.

6.2 Burials

According to Wendell Clark Bennett’s survey of Kaua‘i in 1928 and 1929, he found evidence of habitation in the upper canyon area and its side valleys which included house sites, caves, terraces, burials, an ‘*ulu maika* court, and ‘*auwai* (Bennett 1931:108–110). Previous archaeological studies indicate burials have been found *mauka* and *makai* of the project area within a 0.5-mile radius. In 1994, an archaeological survey (Creed et al. 1994) of a house lot in Hanapēpē yielded a historic cultural deposit (SIHP # -00706) and two burials (SIHP #s -0704 and -0705). The same year, an inadvertent burial (SIHP # -0651) was found within the Hanapēpē Japanese Cemetery (McMahon 1994). In 1996, a coffin burial and several fragments of human burials (SIHP # -1987) were encountered during archaeological monitoring for the Hanapēpē Drainage Improvement project (Winieski et al. 1996). At the old Hanapēpē Pool Hall, human skeletal remains were recovered and documented under SIHP # -1710 (Powell and Dega 2002). In 1992, a survey was conducted for the cemeteries of Kaua‘i (Kikuchi and Remoaldo 1992). Six cemeteries were identified within Hanapēpē. Burials were found within the Filipino Cemetery (SIHP # -0608); a Japanese Cemetery in Hanapēpē Mauka (SIHP # -0607); Veteran’s Cemetery (SIHP # -604); and First United Church Cemetery (SIHP # -0497). A cluster of burials were found near Bennett Site 53, a burial ground located on the northwest side of Hanapēpē Bay (Bennett 1931; McMahon 1993; Kennedy and Latinis 1996). During consultation with the Santos ‘*ohana*, Mr. Santos disclosed to CSH that *iwi kūpuna* were most likely located more *mauka*, in burial caves within the mountains.

6.3 Wahi Pana

Hanapēpē literally translates to “crushed bay,” possibly referring to the frequent landslides of the area (Pukui et al. 1974). According to Wichman, the name “crushed bay” is thought to have derived from the appearance of the cliffs of the area from the sea (Wichman 1998:30). Hanapēpē is also the name of a honeycreeper known as the *nuku pu‘u* on the other Hawaiian Islands. Halulu Falls empties into the Koula River. Halulu or “rumbling” was named for the noise of the waterfall echoing from the cliffs (Wichman 1998:27). Near Halulu is Maka‘opihi or “eye of the ‘*opihi*.” Maka‘opihi is a cave in which Kawelo-‘ai-kanaka lived after he was defeated by his cousin, Kawelo-lei-makua. Manuahi Valley runs northwest along Hanapēpē Ahupua‘a. Manuahi means “firebird,” which refers to the endemic gallinule bird. According to Wichman, the Manuahi “had the secret of fire. The demigod Māui got the secret of fire from the bird and burned the top of the [bird’s] head in revenge for its many lies. Since then, the dark gray bird always has a fiery red streak on the top of its head” (Wichman 1998:28). Holiwi, “traveling bones,” is located on the west side of Hanapēpē Ahupua‘a and is a cliff where *ali‘i* were thrown over by *maka‘āinana*. A *ka-leina-‘o-ka-‘uhane* or “leaping place of the soul” is located along the eastern cliffs directly across from Holiwi. It is said this is where the souls of the dead enter the spirit world.

6.4 *Hula*

Stagner, utilizing George Kanahele's description of Hawaiian values, describes *hula* as that body of dances uniquely done for or by Hawaiians with themes, contents, and purposes wrapped up in values that have historically been important to people calling themselves Hawaiians (Stagner 1985:3; Kanahele 1986). According to Kanahele:

The rites of the halau hula as well as many sacred hula are derived from the Pele and Hi'iaka cycle of poems. Significantly, at the request of Pele, Hi'iaka and her friend Hopoe performed the first hula at Nanahuki beach in Puna; at least this is said to be the earliest mention of the hula in the poem cycle. Thereafter, the presentation of every sacred hula is but a ritual repetition of that primal performance. Hula schools were established and conducted by the gods, such as the famous halau at Ha'ena, Kaua'i, and accordingly became the models for halau set up by mortals. [Kanahele 1986:106]

Mary Kawena Pukui is noted for discussing the significance of *hula* on Kaua'i. In *Hula: Historical Perspectives* (Barrère et al. 1980) she notes the following:

I have not heard of heiaus dedicated to Laka, the patron deity of the hula, outside of Kauai. The two whose sites were pointed out to me by Keahi Lauhine Sylvester were Ka-ulu-o-Lono at Wahiawa and Ke-ahu-a-Laka beyond Haena. The plants used on the kuahu, or altar, the dregs of awa used in daily offerings to Laka, the remains of ceremonial feasts connected with the hula, and the skirts and leis worn at graduation were deposited in these heiaus. [Barrère et al. 1980:70]

Ms. Rhoda Libre recalled a *hula* platform near an old rare *wiliwili* tree; the platform and tree were cared for by an older Hawaiian man who harvested and attempted to sow the *wiliwili* seeds. The platform is believed to be a part of a *heiau* dedicated to the *hula*. She also mentioned the presence of ancient trails nearby, still utilized for the gathering of plant resources. Plant resources were especially important within *hula* practice, with the gathering of plants for the *hula* altar considered a sacred rite. According to Pukui, the gatherer started at dawn, in silence, uttering prayers while collecting the necessary sacred plants (Barrère et al. 1980:71). Ms. Libre was taught by *kumu hula* Joseph Kahaulilio and *kumu hula* Roselle Bailey, while the current *kumu* for Hanapēpē is *kumu* Kapu Kinimaka-Alquiza of Na Hula O Kaohikukapulani. The Santos 'ohana also mentioned that hula practice still occurs at the church located in the vicinity of the Hanapēpē River Bridge.

6.5 Trails

Francis Gay mentions several trails heading *mauka* in Hanapēpē Ahupua'a. Trails could also be found along the shoreline and along streams. A government road was later constructed near the shoreline. However, prior to the twentieth century, the Hanapēpē River needed to be forded when traveling between Waimea and the eastern portion of Kaua'i. Trails into the mountains to Halulu and Hanapēpē Falls can be seen on early maps. Mr. Santos recalled trails were utilized as a means of accessing the interior of Hanapēpē Valley. Ms. Libre added that ancient Hawaiian trails are still cared for today, utilized by cultural practitioners for various activities including the gathering of *lā'au* herbs and *ho'okupu*. Trails were also found going to Mount Wai'ale'ale and beyond.

Section 7 Summary and Recommendations

CSH undertook this CIA at the request of CH2M HILL and on behalf of the FHWA/CFLHD. The research broadly covered the entire *ahupua‘a* of Hanapēpē, including the current project area.

7.1 Results of Background Research

Background research for this study yielded the following results:

1. Hanapēpē literally translates to “crushed bay,” possibly referring to the frequent landslides of the area (Pukui et al. 1974). According to Wichman, the name “crushed bay” is thought to have derived from the appearance of the cliffs of the area from the sea (Wichman 1998:30). Hanapēpē is also the name of a honeycreeper known as the *nuku pu‘u* on the other Hawaiian Islands.
2. The current project area spans the Hanapēpē River, which empties into the sea almost immediately east. The Hanapēpē River is the third longest river on Kaua‘i beginning at the confluence of Kō‘ula and Manuahi streams, approximately halfway up the length of the *ahupua‘a* (Wichman 1998:27).
3. Māhele documentation indicates Hanapēpē Ahupua‘a was rich in agricultural resources. Approximately 92 claims were filed for the area, however, only 66 claims were awarded. The majority of land was being planted in *lo‘i kalo*. In addition, house sites, *kula* lands (used for dryland crops such as sweet potatoes), *mo‘o* with unspecified usage, pasture, gardens, *loko*, salt lands, and a pigpen were documented in LCA claims.
4. Trails could be found along the shorelines, streams, and leading to the uplands of Hanapēpē Ahupua‘a. Prior to the twentieth century, the Hanapēpē River needed to be forded when traveling between Waimea and to east Kaua‘i. Trails could also be found going to Mount Wai‘ale‘ale and beyond.
5. Foreign interests began to invest in the surrounding lands of Hanapēpē including ‘Ele‘ele and Wahiawa during the mid- to late nineteenth century. The development of large-scale agricultural ventures stimulated by the Reciprocity Treaty of 1875 allowed for certain goods such as sugar to be exported duty-free to the United States. The Hawaiian Sugar Company located on the west side of lower Hanapēpē Valley and the McBryde Sugar Company in Wahiawa were two major sugar companies in the area.
6. In 1906, a plantation-sponsored Kauai Railway was constructed. The rail line built a bridge across the Hanapēpē River extending to ‘Ele‘ele Landing. Eleele Plantation had its own mill and landing popularly known as Port Allen. The Kauai Railway liquidated in 1941.
7. According to previous archaeology, several burial sites can be found *mauka* and *makai* of the current project area. *Mauka* of the project area are three burials: SIHP # -0607, a burial in the Japanese Cemetery; SIHP # -0497, a burial in First United Church Cemetery; and SIHP # -1710, a coffin burial and several fragments of human burials. *Makai* of the project area are several burials including SIHP # -0608, burial within the Filipino Cemetery; SIHPs # -0704 and -0705, two human burials found in the vicinity of a historic cultural deposit; SIHP # -0604, burial in the Veteran’s Cemetery; SIHP # -0651, burial in the Japanese Cemetery; and a cluster of burials found within Bennett’s Site 53 (burial ground northwest of Hanapēpē Bay) including SIHP #s -0053 and -01987.

7.2 Results of Community Consultations

CSH attempted to contact NHOs, agencies, and community members. Below is a list of individuals who shared their *mana‘o* and *‘ike* about the project area and Hanapēpē Ahupua‘a.

1. Kamana‘opono Crabbe, *Ka Pouhana* at OHA
2. Rhoda Libre, Founder of Kaua‘i Westside Watershed Council
3. Frank and Abby Santos, traditional salt maker in Hanapēpē

7.3 Non-Cultural Community Concerns and Recommendations

Based on information gathered from the community consultation, participants voiced the following concerns not related to the cultural context.

1. A community concern expressed during consultations included the impacts of construction on traffic, pedestrians, and motorists. The community recommended that parties involved with the project make a full consideration of the impacts of construction on traffic, and the safety of pedestrians and motorists. It was recommended that work proceed at night or during times of low traffic volume, and that clear signage stating the speed limit be posted throughout the project area.

7.4 Impacts and Recommendations

Based on information gathered from the cultural and historic background, the proposed project may potentially impact undetected *iwi kūpuna* (ancestral bones). CSH identifies potential impacts and makes the following preliminary recommendations.

1. Māhele documents indicate the vicinity of the study area was once under habitation and cultivation by Native Hawaiians. Previous archaeology conducted *mauka* and *makai* of the project have yielded *iwi kūpuna* (ancestral bones) including SIHP #s -0607 (burial in the Japanese Cemetery) and -0704 and -0705 (two burials found in the vicinity of a historic cultural deposit). All three burials have been found within a 0.5-mile radius of the current project area. No archaeology projects have been conducted within the current project area. Based on these findings, there is a possibility *iwi kūpuna* may be present within or in the vicinity of the project area and that land-disturbing activities during construction may uncover presently undetected burials or other cultural finds. Should burials (or other cultural finds) be encountered during ground disturbance or via construction activities, all work should cease immediately and the appropriate agencies should be notified pursuant to applicable law, HRS §6E.
2. A community concern expressed regards the effects of construction on the “historic look” of the bridge. The community agrees the “historic look” of the bridge is iconic to historic Hanapēpē Town. In addition to preserving the historic look, the community recommends the current “view planes” from the bridge (an unobstructed view of the ocean) remain intact, as these views are also iconic and emblematic of historic Hanapēpē Town.
3. Another community concern regards the impacts of construction on the water quality and ecosystem health of Hanapēpē River (whereby disturbances to river quality may impact cultural practitioners such as *lawai‘a* [fisherman] and/or paddlers). It was recommended that the Kaua‘i Westside Watershed Council remain on the “ground-floor of planning.” Specifically, the community recommended that community members, the Kaua‘i Westside

Watershed Council, and various stakeholders be actively involved in discussions and planning prior to construction. In addition to the involvement of the community and various stakeholders during planning stages, questions were brought forth regarding the presence of cultural monitors, consultants, and assessors, and if they will be present during ground disturbance.

4. A final concern brought forth by the Kaua'i Westside Watershed Council regards the addressing of numerous questions regarding bridge construction and the environmental impact related to construction activities. Concerns included questions regarding whether there will be any additions to existing lanes (i.e., car, bike, walking path), and if an assessment has been made of the damages caused by Monsanto containers that hit both bridges during a recent flood and resulted in a chemical spill that affected the river, soil, and offshore reefs. The resultant injuries to bridges, food supplies, cultural practices, and natural habitat were observed and felt by the community. The community recommends these injuries be addressed.

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Appendix A Land Commission Awards

475

Ukupauna § 2. (5)

G. M. Robertson
J. H. Smith
J. H. Kaulahao

Honolulu, Maraki 19, 1855.

Heleu 3323 I Papahaku § 2. (7) Pahiaua Kona, Hawaii.

Apana 2. Pahala malake ma ili "Apana" ma Pahiaua, Kona, Hawaii.
E hoʻomaka ma ka paha paha ma ka hiki mau ma ka paha, ma ka paha hiki ma ka paha
ma I. Papahaku ma i waiwai i I. H. Kaulahao, hale.

Apana	25°	Konohana	293	Kaulahao	ma i waiwai ma i waiwai
Apana	89°	Hikina	223	"	ma ka paha, hiki
Apana	116°	Hikina	120	"	"
Apana	117°	Konohana	260	"	" i hiki i hiki ma ka paha, ma ka paha
Apana	1	Hale	31	Hale	"

G. B. Howell.
Hawaii.

Hawaii Mar 1, 1855.

Mai ka waiwai 92 1/2

2 kaula, 1 hiki.

Ukupauna § 2. (7)

G. M. Robertson
J. H. Smith
J. H. Kaulahao

Honolulu, Maraki 19, 1855.

Heleu 9142 I Papahaku § 2. (7) Hanapepe, Kona, Hawaii.

Apana 2. Pahala ma "Hanapepe" malake ma ili "Hanapepe" ma Hanapepe, Kona, Hawaii.
E hoʻomaka ma ka paha paha ma ka paha ma ka paha ma ka paha ma ka paha ma ka paha
ma I. Papahaku ma i waiwai i I. H. Kaulahao, hale.

Apana	68°	Konohana	170	Kaulahao	ma ka paha, ma ka paha
Apana	22°	Konohana	150	"	"
Apana	68°	Hikina	170	"	"
Apana	22°	Hikina	150	"	" i hiki i hiki ma ka paha, ma ka paha

G. B. Howell.
Hawaii.

Hawaii Mar 14, 1855.

Mai ka waiwai 159 1/2

1 kaula, 1 hiki.

Ukupauna § 1. (7)

G. M. Robertson
J. H. Smith
J. H. Kaulahao

Honolulu, October 8, 1851.

PAPAKI

474

Keleu 3925 P "Hualu" Honohau, Hanapepe, Kauai.

Apunā. He ana ana i hekeheke Opunū ana o Hualu a waiho ana ma ka ili, ana n. ka, Olupeua
 • Honohau i ka hualana o Hanapepe ma ka Moku o Hualu a waiho ana ma ka ili, ana n. ka, Olupeua
 • He honohau ana ma ka hualana o Hanapepe ma ka Moku o Hualu a waiho ana ma ka ili, ana n. ka, Olupeua

Hana	11°	Sikina	150	kaulaha, u pili ana ma ka pili	
Mau	73°	Sikina	231	"	Hualu
Mau	64°	Sikina	0.87	"	"
Mau	61°	Sikina	317	"	"
Mau	17°	Honohau	0.50	"	Hualu a waiho
Hana	65°	Honohau	0.53	"	Hualu a waiho
Hana	65°	Honohau	393	"	"
Mau	85°	Honohau	0.60	"	"
Mau	34°	Honohau	0.56	"	"
Hana	62°	Honohau	0.84	"	"

Ka Ili 1 Hualu 19 Hualu.

J. P. Alexander
Hanapepe

Maraka 13 1855.

Mai ka ana 357 1/4 award Books

2 Km. 1 Suka

Ulupeua #2.05

J. M. Robertson
J. B. Smith
A. Hualu a waiho

Hualu 3922 Kapoani Honapepe, Kauai.

Tahale ma "Kawaino" molohe o ka ili, "Kawaino" ma Honapepe, Kauai.
 • Honapepe ma ka pili ana i hekeheke, hekeheke ma ka ana Honapepe o ka pili ana.
 • Honapepe ma ka pili ana i hekeheke, hekeheke ma ka ana Honapepe o ka pili ana.

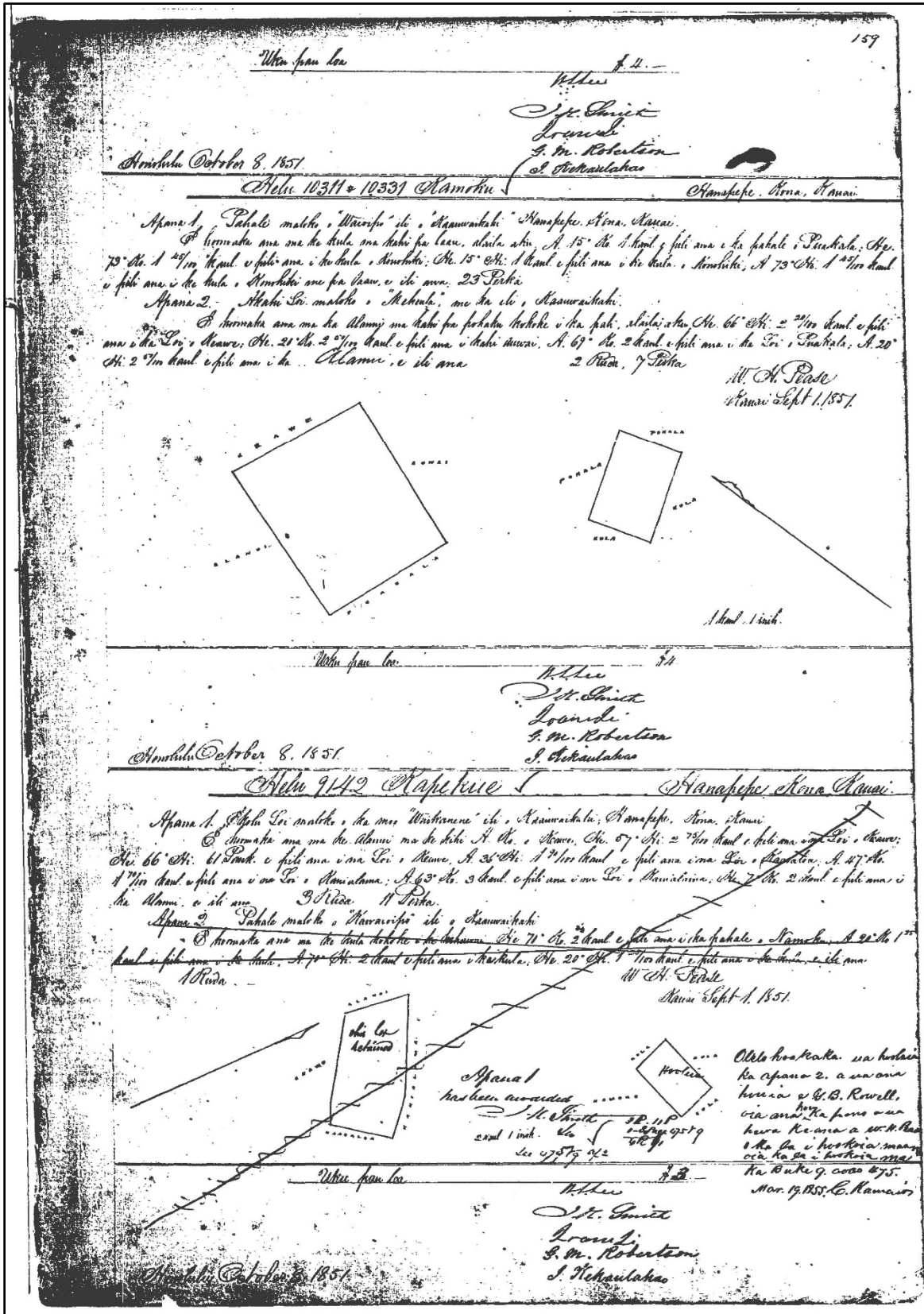
Hana	11°	Sikina	150	kaulaha, ma ka hualu hualu i ka hualu a waiho.
Mau	73°	Honohau	150	"
Mau	11°	Honohau	150	"
Mau	73°	Sikina	150	"

kaulaha, ma ka hualu hualu i ka hualu a waiho. ma ka hualu hualu i ka hualu a waiho. ma ka hualu hualu i ka hualu a waiho.

J. B. Howell
Hanapepe

Maraka 14 1855.

1 Km. 1 Suka



Naha: 10595 Puukala Hanapepe, Kona, Hawaii

Apana 1. Pihale Loi ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii.
E hoomaka ana ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii. Ma 73' Ma 1 1/2' kaula a pili ana
Loi. Ma 22' Ma 7' Pihale a pili ana i ma Loi i Loi. Ma 63' Ma 2 1/2' kaula a pili ana i ma Loi i Loi.
A. 11' Ma 1 1/2' kaula a pili ana i ma Hanapepe; A. 70' Ma 4' kaula a pili ana i ma Loi i Loi. Ma 12' Ma
1' kaula a pili ana i ma Hanapepe ma kula; a i ma 3' Pihale i Pihale.
Apana 2. Pihale ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii.
E hoomaka ana ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii. Ma 62' Ma 3' kaula a pili ana i ma Loi i Pihale.
Ma 55' Ma 2 1/2' kaula a pili ana i ma Loi i Pihale; A. 35' Ma 1 1/2' kaula a pili ana i ma Loi i Hanapepe; A. 55'
Ma 3' kaula a pili ana i ma Loi i Hanapepe; A. 75' Ma 3 1/2' kaula a pili ana i ma Loi i Hanapepe; Ma 7' Ma 1 1/2'
kaula a pili ana i ma Hanapepe a i ma 1' Pihale i Pihale.
Apana 3. Pihale ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii.
E hoomaka ana ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii. Ma 85' Ma 2' kaula a pili ana i ma kula "Pihale" a Hanapepe.
A. 11' Ma 1 1/2' kaula a pili ana i ma kula; A. 65' Ma 2' kaula a pili ana i ma kula; Ma 18' Ma 1 1/2' kaula a pili ana i ma
kula a i ma 1' Pihale i Pihale
W. H. Peck
Hawaii Sept. 1, 1851

Uka pua kua

*W. H. Peck
 J. H. Smith
 Hawaii
 E. M. Robertson
 J. Kaulaheha*

Apana 1. Pihale ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii.
E hoomaka ana ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii. Ma 52' Ma 1 1/2'
kaula a pili ana i ma kula; A. 15' Ma 1 1/2' kaula a pili ana i ma kula; A. 32' Ma 1 1/2' kaula a pili ana i ma kula; Ma 15'
Ma 1 1/2' kaula a pili ana i ma kula; a i ma 3' Pihale i Pihale.
Apana 2. Pihale ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii.
E hoomaka ana ma kula "Pihale" ma kula Hanapepe, Kona, Hawaii. Ma 72' Ma 2' kaula a pili ana i ma Loi i Loi.
Ma 65' Ma 3 1/2' kaula a pili ana i ma Loi i Loi; Ma 42' Ma 1 1/2'
kaula a pili ana i ma Hanapepe a i ma 2' Pihale i Pihale
W. H. Peck
Hawaii Sept. 1, 1851

Uka pua kua

*W. H. Peck
 J. H. Smith
 Hawaii
 E. M. Robertson
 J. Kaulaheha*

Appendix B OHA Letter

PHONE (808) 594-1888



FAX (808) 594-1938

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAII 96817

HRD15-7584

September 30, 2015

Nicole Ishihara
CSH Cultural Researcher
Cultural Surveys Hawaii, Inc.
P.O. Box 1114
Kailua, HI 96734

Re: Cultural Impact Assessment Consultation
Hanapēpē Bridge Replacement
Hanapēpē Ahupua'a, Waimea Moku, Kaua'i Moku
Tax Map Key: (1) 3-5-005:016

Aloha e Nicole Ishihara:

The Office of Hawaiian Affairs (OHA) is in receipt of your August 2015 letter, initiating consultation and seeking comments ahead of a cultural impact assessment for the proposed Hanapēpē River bridge replacement project.

The project plan includes replacement of the existing deficient 1938 Hanapēpē Bridge to meet current design standards for roadway width, load capacity, bridge railing and transitions, and bridge approaches.

OHA recommends consultation be initiated with the following individuals and community organizations who may be willing to share their mana'o on this assessment with you:

- Families from Hanapēpē Salt Pond
- Frank Santos – Salt maker and practitioner
- Sarah Peters – Kaumuali'i Hawaiian Civic Club member
- Wilma Holi – Kaumakani resident and cultural practitioner

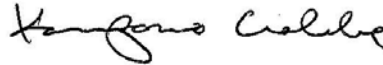
Nicole Ishihara
September 30, 2015
Page 2

Please know that this list is not all encompassing and we are sure additional individuals will be identified as you move forward with your consultation process. The above contact list was also provided to J. Michael Will of the U.S. Department of Transportation in preparation for Section 106 consultation for this project.

OHA does request assurances that should iwi kūpuna or Native Hawaiian cultural deposits be identified during ground altering activities, all work will immediately cease and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

Thank you for initiating consultation at this early stage. Should you have any questions, please contact Kathryn Keala at (808) 594-0272 or kathyk@oha.org.

'O wau iho nō me ka 'oia 'i'o,



Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:kk

**Please address replies and similar, future correspondence to our agency:*

Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy, Ste. 200
Honolulu, HI 96817

Appendix C Frank and Abby Santos Transcription

Cultural Impact Assessment, Hanapēpē River Bridge Project: Cultural Surveys Hawai'i (CSH) interview with Frank (FS) and Abby Santos (AS), kama'āina, nursery and landscaping business owners, and producers of traditional pa'akai, on December 15, 2015 at No Ka 'Oi Nursery, Hanapēpē:

CSH: Aulii Mitchell

CSH: So let us start out with your names?

Frank Santos (FS): My name is Frank Santos and my name is Abigail Santos.

CSH: Frank where were you born?

FS: I was born in 'Ele'ele.

CSH: And Abby?

Abigail Santos (AS): I was born in California.

CSH: Frank where did you grow up?

FS: I grew up right here in 'Ele'ele and went to 'Ele'ele School right up on the hill.

CSH: Frank when were you born?

FS: I was born in 1948.

CSH: Who are your parents?

FS: My father's name is Frank Santos and mama's name was Sarah Loa.

CSH: Sarah Loa?

FS: Yes.

CSH: And where was papa from?

FS: My father was from Kaua'i and my mama was from Hilo, Coconut Island.

CSH: Okay from Mokuola? Then you must be a relation to the Keli'ipio Family, they were a long time family, *konoiki* I understand of Mokuola. I'm sorry I just make these connections like this.

AS: No worry, it is good to hear.

CSH: Frank what is your occupation?

FS: I am a landscape contractor and I own the nursery right here in Hanapēpē.

CSH: So your affiliation with the 'āina is 'Ele'ele?

FS: 'Ele'ele and Hanapēpē I have 52 acres right here in Hanapēpē.

CSH: Okay, and where is it in the vicinity of the bridge?

FS: (Pointing to the map.....marked on the map) It is on Aiona Road right next to the bridge. So we are here down this road and this is all my property (marked on the map).

CSH: And that is No Ka 'O'i Nursery?

FS: Yeah, No Ka 'O'i Landscaping (mark on map).

CSH: Okay, and how long have you lived here?

FS: All my life.

CSH: What is your family connection to this place? Is it the *ahupua'a*? Is there anything you can share about the past or present land use that you have experienced in your life time?

FS: Well the bridge itself is the main highway for the west and east side to get connected west to east and the bridge was a cultural place for the old fishermen's. They used to throw net off the bridge and catch *moi* and mullet. The mullet fisherman, that was their favorite spot that bridge there, that you would see a fisherman everyday waiting for the mullet to come under the bridge so he could throw his net on them. The bridge we used to crab off the bridge, catching the Samoan crab [(*Scylla serrata*)] and people still do that till today, the kids go there set their nets go home and come back and check the nets and stuff.

CSH: What kind net?

FS: The round net.

CSH: The round one for the crab...

FS: Yes, lot of Samoan crab in Hanapēpē River and if you don't have a boat that is one way of catching crab is off the two bridges in Hanapēpē.

CSH: Are there mangrove [(*Rhizophora*)] vegetation and that kind?

FS: The mangrove is starting to take over the river compared to before. They are starting to overrun some of the water way, you know.

CSH: Were there native plants before?

FS: Just nothing before the mangrove. We used to paddle canoes up the river and we knew all the good crabbing areas along the bridge and going all the way up the river itself.

CSH: So you used to fish too?

FS: Yeah, I was one good fisherman. I used to catch *holehole* [*sic*] [(*āholehole*, Flagtail/*Kuhlia sandvicensis*)] and *moili'i* [(*moi*, threadfin/*Polydactylus sexfilis*)] and *papio* [(*trevally*/*Caranx cheilio*)] all in Hanapēpē River.

CSH: So in the *muliwai* (rivermouth) or all through?

FS: All through from the river mouth, back up the river mouth, is not even a mile or so from the bridge, so a lot of fish can come in through river and spawn in the river and go back out so that was our fishing area right there during when I grew up [in] Hanapēpē. So you know in those days the ball park was right down the road so we had to walk over the bridge practically over the bridge every day you would try check if you can see some fish or crab you know from the height of the bridge was a good look out [...] vantage area and looking at the fish coming up the river.

CSH: You could see?

FS: Yeah that was a good vantage point looking down the river or up the river which way the fish was traveling. You know the bridge was like a playground for us we always had a look over the bridge and check the fish.

CSH: Do you remember when the bridge was put in or was that before your time?

AS: 1933.

FS: The bridge was put in before my time, but I always like the historic look of the bridge and the bridge had lights on it before when you enter the bridge had lamps along the bridge it would be real I catching at night cause the bridge was lit up it was really pretty and stuff and you don't see that anymore, and the lights do work.

AS: Some are still there?

FS: Still there but no work.

CSH: You used to fish night time too?

FS: Yeah, yeah, yeah we used to fish day and we used to fish night off the bridge in those days never had to so a lot of your activity was to do with the ocean and the river you know, forget 'ōpae along the river

CSH: 'O'opu [(Goby/Awaous guamensis)?

FS: Yeah, had o'opu, 'ōpae [(‘ōpae‘ula, shrimp/*Halocaridina rubra*)] you know a lot of *holehole* [*sic*] so the river played an important part in our growing up.

AS: And your mom used...

FS: My mom used to love Hawaiian food, so.....

AS: He used to feed her Hawaiian food.....

FS: My mom used to love food from the ocean and the river so everything was raw fish, just catch enough for the dinner or the lunch

CSH: Yeah, just enough.

FS: I used to walk with one gallon can and fill 'em up every day and that would be enough for the day. I used to go with my bread feed the fish off the bridge feed the *holehole* train 'em.

CSH: You had *ko'a* [(fishing grounds or fishing shrine)] places where you would feed the fish?

FS: Yeah, they all come there I go there catch five go somewhere else catch five more.

CSH: So you had your spots.

FS: I had all my spots I would go there and feed them every day train them and then when i go there I catch little bit.

CSH: You had boat?

FS: I had one canoe, one roof iron canoe I made.

CSH: One man kine?

FS: One man kine, ow tongue?

All: Laughing!!!

FS: Had *hau* wood from the *hau* tree. Paddle up the river as long he no leak, if he leak I going find old tar patch `em with the tar!

All: Laughing!!!!

FS: We all had canoes that days we all used to travel up the river with our canoe and set our crab nets and you know.

CSH: Who taught you?

FS: When I was one kid I was in tune with lot of the old Hawaiians and stuff and in culture. I'm a salt maker also at salt pond, I have been making Hawaiian salt for 60 years down there and I was taught by my parents and the old *kūpuna*. In those days I was really attracted to the ocean. Those days were the *hukilau* days in the harbor and stuff. We used to *hukilau* and...

CSH: In Hanapēpē?

FS: In Hanapēpē Harbor and we used to get *akule* [(Bigeye scad/*Trachiurops crumenophthalmus*)] and you know in those days the *akule*....we used to dry down the beach on the clothes lines, coconut tree to coconut tree and with *akule* drying on top all salty, *opelu* [(Mackeral scad/*Decapterus pinnulatus*)] all drying, *hahalalū* [(Bigeye scad/*Trachiurops crumenophthalmus*)] all drying but those days was the coming together with family and *hukilau* [(to fish with a dragnet)]and everybody would go down to the river mouth was the boat launch was where everyone would go and set their nets.

CSH: When you remember *hukilau*, do you remember what the whole process was?

FS: Kind of. I was real small those days, but yeah I mean it was a lot of fun those days just with all the people helping each other out. In those days in Hanapēpē even the fishermen's used get the Japanese fisherman with the Namashi Fishing boats you know there was sail boats they would sail them off from the bay and the sand bar they had long lines and they would set then out and the sailboat would sail in the harbor and they would get hooks on the line that goes out and they would catch fish including the whole [inaudible]. That was all with little hooks and stuff, but in the day that was our fishing area.

CSH: Sounds like was good fun.

FS: You know in those days no TV so everyone would go down to the big pier and set up there area for the night and wait for something to bite, *weoweo* [*sic*] [(*'Aweoweo*, Bigeye tuna/*Prichthys cruentatus*)] when they came in had a lot of *opelu*, you know *akule* [(Bigeye scad/*Trachiurops crumenophthalmus*)], we catch *akule* from the big pier. Those days was the old days when Hanapēpē Bay was all sampans, the old boats was all the sampans the sampans would come up the river. Had a couple guys who lived up the river and they could drive their sampan all the way up the river and park along the river and close to their house area.

CSH: And the sampan can go under the bridge?

FS: They, the sampan can travel under the bridge all the way the river to swinging bridge.

CSH: More important to keep the historic structure of the bridge. Still get these practices still going on by the bridge?

FS: People still use the waterways, people still go up there crabbing or the guy with the throw nets the guy with the flat boat waiting for the fish, looking for different areas for throw his net you know. The river is kind of shallow right now but people still using boats to navigate up the river a lot of paddle board people practice up the river. There is a canoe club that base at the end of the river.

CSH: The canoe club still present day?

FS: Yeah, they use the river mouth, west side Hanapēpē Canoe Club they use it for launching the canoe.

CSH: How many siblings you have?

FS: We have one boy and one girl, son and my daughter, two kids.

CSH: You raised them here?

FS: Yeah here in Hanapēpē.

CSH: And in your family have?

FS: We have four, two brothers above me five of us two brothers and two sisters.

CSH: So did you share this kind of practices with your children?

AS: To our children? No.

CSH: No, okay.

AS: We tried.

FS: They did the computers.

CSH: How about your family history in the area?

FS: My family history well you know my dad, well we lived in 'Ele'ele all our lives. My dad worked for the [inaudible] out of Port Allen, which ran the trucking company out of Port Allan and they were the biggest trucking company so my dad were the truck driver [inaudible]. Kaua'i Commercial and Port Allan was the biggest port at that time on Kaua'i. All the boats would come into Port Allan, so Hanapēpē was the city of Kaua'i, Hanapēpē the littlest town was the biggest littlest town on the island because everything would end up in Hanapēpē. Hanapēpē was the night life of the island. In Hanapēpē we had two movie theatres, we had a skating rink, we had dance halls, we had laundry mats, we had two pool bars and 16 bars so Hanapēpē was the capitol of Kaua'i in those days, so the bridge, the two bridges was always people on the bridges. We had a hotel right there at the old bridge. The old [inaudible] Hotel that was one of the first hotels in Hanapēpē.

CSH: Is that the green building still there?

FS: Yeah, I went to the Mormon Church which was right there by the bridge, so we was always walking through that bridge or going home or down to the park or going to the beach you know.

CSH: So what happened?

FS: Well what happened is in those days Līhu'e merchants had to pay all these trucking fees from Hanapēpē to Līhu'e, so they wanted to change that, so they wanted a new dock open in Līhu'e. So when they got the new dock in Līhu'e open, most of the boats transferred to centralize in Līhu'e, so it was easy for the trucking to distribute between the island itself, Kapa'a, Hanalei it became more centralized so most of the shipping moved to Līhu'e. So Hanapēpē started to die out as far as activities, people [...] there was not much night life already because of the harbor closing down. We also had the airstrip in those days, Burnfields so we had all this plane traffic coming into Hanapēpē and this boat traffic coming into Hanapēpē, so Hanapēpē was the biggest city of the island in those days with a lot of activities going on in that area.

CSH: When you mentioned earlier you used to make salt?

AS: Still does.

CSH: What is your association with the salt ponds? Is that your family still?

FS: Yeah.

CSH: So has it changed now?

FS: It is done the same way as we learned how to do it in the old days. We don't want to use any modern type method. Everything is done by the old method and it's all farming with hands, hands on.

AS: It is all flooded right now. In the winter months it is all flooded.

FS: We have been doing that you know. There is 23 original families that have areas in there, *kuleana*.

CSH: Where on the map?

FS: Right here, this water area right there (pointing to map), so all the families have little areas in there and we do that every summer when the dry season when it dries up. We all go in there and work our little areas up.

AS: In the winter it is all wet.

FS: So the areas will all be passed down within the families, like my areas will be passed down to my kids and then my grandkids will inherit that so it stays within the families.

CSH: What is the history of the salt ponds?

FS: Well the history to the salt patch it goes way back. The history to that is it was shown to a little girl who was fishing in the area and she caught so much fish over there at salt pond and she didn't know what to do with her fish so this old lady seen her one day and told her don't cry and I'll show you what to do with your fish so she dug a hole in the ground over there and told the girl to put her fish in the water and when she did that, then the water turned into salt so it preserved the fish, so the lady was Madame Pele. She taught her that area had salt and from there that is how the salt ponds grew, the old Hawaiians started to expanding in the area and making beds. We actually get the water from underground, the water comes out in wells and we take that water out of the ground and we do beds above ground which is made from clay that is found only in that one area. So the clay[...] we work the clay to make clay ponds and back the ponds in the sun then we add the water to that and the water ferments and crystalize and settle on the bottoms of the pond that is how we

get the salt it accumulates and then we harvest the salts. It is a farming method in doing the salt making and that is the only area in the whole state of Hawai'i that does it like that. As the summer goes through the water content gets real salty that this water has this brine shrimp that lay their eggs in there and the shrimp hatches, the 'ōpae and that is the secret in the Hawaiian salt it makes the salt sweet, it changes the salt to a sweet taste. It is not really a salt it has more of sweet taste to it and that is Hawaiian salt that. So the salt, we do it in the same traditional method, we use stones to rub the clay we use all our hands. Then the salt all what we make we give away. We no sale nothing we give everything away. At the end of the year I know more nothing, I give it all away and that is the part in sharing that.

CSH: Wow, great story.

FS: So now I still do it. I teach all my kids how to do it and taught all my grandkids how to do it and I'm still teaching other people who willing to learn and come listen to us and work the ground and work the 'āina in doing it. I was taught by my dad to share that because if you don't share that you loses the culture, you lose how to do it. Now there is a lot of people there the kids coming back now trying to identify themselves and their 'āina and don't know how to do it, because nobody taught them, nobody wanted to teach them so they lost that, you know.

CSH: You lose a sense of place.

FS: And to preserve the area you need to teach. The only way to preserve there is to teach other people how to do it and the importance of it and then they understand why you should preserve and protect it and what we trying to do is to educate more people and have them to learn and how to preserve that.

CSH: That is *maika'i* [(good)]

FS: So that is a real important part in my Hawaiian culture right there in Hanapēpē.

CSH: And so important to our Hawai'i *nei*, now.

FS: Well the salt is so important. What we make we send it all over the world, we share it to all kind people. Tourist come and they come to that place and say, "Oh I need some salt to take back with me." When you give Hawaiians they say, "Oh this is gold!"

CSH: Yes, it is our gold because if we have nothing to eat in the house or share with someone, we get salt and poi.

FS: In the old days you get the sour poi on the table and a little bit *pa'akai* and everything else taste good.

CSH: Yes, everything is ono! In the area, what about past agriculture?

FS: Well Hanapēpē was famous for rice patties. When the Chinese came to Hanapēpē they had rice growing in Hanapēpē and the whole valley was rice and taro patch.

CSH: Along the river?

FS: Yeah along the river. Taro and Rice.

CSH: Was it only Chinese doing both the rice and taro?

FS: The Hawaiians was doing the taro and the Chinese was doing the rice.

AS: But wait a minute Frank, talk about the history of the agriculture in this spot (Pointing in the vicinity of bridge), the chickens, pigs and now the nursery.

FS: This particular area (marked on map) was chicken farm within this land itself.

AS: When was that?

FS: Back in the 30s and 40s, then in the 60s we had a pig farmer inside here too, raising pigs, but this was, some of this land in here was watermelon patches. The river itself down here had a main crossing bridge that the trains would run that would take the sugar (pointing to map) to the pier.

CSH: Over the river?

FS: Yeah, over the river. So that was the main train track that the trains would get to the pier in the old days to bring the sugar. In those days it would run all the way back to the harbor where they would unload the bags of sugar. In those days the sugar was 100lbs bags in burlap bags. They would put them all on trains and it would run on the west side down to the harbor so they could get them out on boats. So the boats would come anchor out in the harbor and they have tensor ships take them out to the boats. They would have a big sugar room up on the hill where they store all the sugar and from there they would take it down to smaller boats and then take it out to the bigger boats. So Young brothers everything would come into Port Allen, so it was a major port right there. So when I was a kid that was my hang out all along Port Allen and Hanapēpē Bay.

CSH: Did any surfing go on at that time?

FS: Yeah, I was a surfer way back then before fiber glass came out, we had plywood surf boards surfing by the river mouth and then fiber glass came out then we were big time. We would go out to the bay out here and surf the bigger waves.

CSH: They still surfing today?

FS: Yeah surfing was a big things in those days in Hanapēpē Harbor, the harbor was different.

CSH: What is happening today with the boat harbor?

FS: Well the harbor changed into a bigger port now because of the tourist industry. In the past 15, 20 years, the tourist industry picked up on Kaua'i and boat tourist went to Nāpali which they running small little boats in the North Shore and the state needed to regulate that so they finally regulated all this boat traffic and they sent it back to commercial harbor like Port Allen so they can regulate the traffic going into Nāpali Coast. So now all the boats that go to Napali have to dock at Port Allen harbor so they can regulate that. Now the boats got bigger so we have bigger catamarans that can hold more people just to take them on the Nāpali Coast.

CSH: Okay a connection to Nāpali Coast.

FS: Take them on tours on to Ni'ihau.

CSH: Oh, yes, get the archaeology site, Nu'alolo Kai, *kūpuna* Sabra.

AS: Yes, *kūpuna* Sabra.

FS: This the main harbor on the west side right now.

CSH: Yes, it was like an hour or more on the zodiac! I remember that rough ride!

All: Laughing!

FS: Oh, yeah you pay the price of the ride!

CSH: And so over here in these areas, do you know of any cultural or archaeological sites that we need to be concerned about over here? Any *heiau*?

FS: No, it is more residential now.

AS: No, before in the past.

CSH: Our biggest concern is the *iwi kūpuna*? Is that a concern in that area?

FS: (Pointing on map) The Japanese cemetery is way over there, that is all Japanese graves.

AS: Is there any in the camp that you can think of?

FS: No, no, I don't think in the bridge area.

CSH: That is always a big concern

FS: Yeah.

CSH: Do you have any stories about the areas?

AS: There was always the caves, right Frank, in the valley?

CSH: Where are the caves?

FS: Along this hillslope is all burial caves, yeah (pointing and marking on map)

CSH: Yes.

FS: Well this is the Hanapēpē cliffs, the Heights right here, this is the valley along this cliff line this was all burials.

CSH: Get cemetery right there, what is that?

AS: Oh, that is going up Moi Road.

CSH: Is that a Christian cemetery.

FS: Japanese, this road goes up the hill.

CSH: So there were caves where?

FS: Right on top this *pali* right here this is the top of the Heights and this Hanapēpē Valley down here. Going up the Hanapēpē Valley there are a lot of burials within the cliffs, all the little caves are in the cliffs there. So all this mountain range right here. I remember when I was a kid had this Irish guy who lived right here who married a Hawaiian lady. It was right up here on the road and he worked for the county and he was a grave digger, you know he went through a lot of the graves dig out a lot of the Hawaiian graves and he had a collection of Hawaiian artifacts, poi pounders and all kind stuff in his house right there, so back in the 60s we had a big flood, Hanapēpē River flooded and the flood went around all the house and came by his house a take his house out and everything went down the river.

AS: And everyone else was fine.

FS: Along the river was fine except him.

CSH: Aloha *ino*.

FS: It took everything from him and then went down the river. He died earlier than his wife. I remember that guy, Uncle Ray Koa.

CSH: Wow.

FS: In the valley and around these cliffs had a lot of burial sites?

CSH: You still fish today?

FS: No, I no more time.

CSH: Still get others fishing?

FS: Yeah, still get others fishing all the time. My granddaughter dad's family they're the valley Kalihi's, they live right on the river, they like to go crabbing in the river, they like to go camping down by the river mouth.

AS: We just bought this piece of property and so they camp out over there and fish the whole weekend. Right by the river mouth. They bring us all kinds.

FS: They bring us Samoan crab, lobster.

All: Laughing

FS: But they like play in the river. They get their little boats.

AS: So they still do that. That is our granddaughter's family

FS: Our granddaughter goes to UHH (University of Hawai'i Hilo) right now, she is taking Hawaiian Studies.

AS: *Kumu* Sabra know her.

FS: She used to dance for Sabra.

CSH: I am familiar with *kūpuna* Sabra.

FS: She wants to retire pretty soon so she wants our granddaughter to come back and take her place! She love her so much, so our granddaughter was dancing for Aunty Sabra before she went to Big Island.

CSH: Is there still the practice of *hula* in these area? Who is the *kumu hula* of this area?

AS: Oh it is Aunty Kapu Aquisa.

CSH: Aquisa, Kapu.

AS: They practice right here. Kinimaka.

CSH: Okay, the sister lives Hilo.

AS: They practice right at the Church right out here.

FS: And Aunty Janelle Pavao, she had a lot of people in Kalaheo.

AS: Janelle, you know Leina'ala. There is jumping out point.

FS: Out salt pond area. At Puolo Point.

CSH: Oh a known *leina*? Where is that on the map?

FS: Right here it is called Puolo Point.

AS: The jumping off point.

CSH: Is that in the east?

FS: Wilma will know that.

CSH: She took me out there before with mama....is that that the air strip?

FS: Yeah.

AS: And this Shark Bay we call that (pointed out on map).

CSH: No *heiau* or old fishing shrines you know of?

FS: No, but used to get right by the park, used to get was one Chinese temple way back in the old days. This was the *hukilau* area right by the beach park, (pointing to map) that was the boat launch and beach park.

CSH: Any old trails?

AS: Laughing [...] [he] make his own trails.

All: Laughing

FS: Well, you know get a lot of trails up in the valley.

AS: What about this area?

FS: No, we just make short cuts to get from one place to the other, cut through somebodies yard. Up the valley had plenty.

CSH: Did you ever go up there?

FS: Yeah, I used to go up the valley, go swimming up the river and go catch 'o'opu, and catch 'ōpae.

CSH: The trails you took along the river.

FS: We walked along the river. I went to school right up here on the cliff, 'Ele'ele School it overlooks all of Hanapēpē and the valley.

AS: There is a cemetery where his parents are buried up there, it is old, and they finally cleaned it up. It was an overgrown mess.

CSH: Do you have any concerns or you think the community might have with the replacement of the bridge?

FS: For one thing the traffic. We have so much traffic going through the west side now. The west side grew so much the traffic that even that we have to pull out on the road.

AS: It is dangerous.

FS: It is hard to pull out on the road it is so dangerous, especially right here there is a four way going right here in town. It is hard to do that because of the traffic coming from the west side.

CSH: Any recommendations?

FS: Well, you know the gas pump right there. Everybody pulls into that gas station right there on this (west) side of the bridge, right there get one gas station, right by the bridge. That is a confusion area when people pull out and pulling the gas station right there. We get this back road, Aiona Road that comes out too and it is so hard to pull out right there on Aiona Road.

AS: That is the road right before the gas station.

FS: So that road comes right into our property in the back here. With this bridge now it is really hard to enter on to the highway cause of the traffic. You really have to wait and wait and wait for all the cars to go on to it is safe just to pull on to the highway right there.

AS: The line of sight is poor, when you come out because it is like a little slope thing there.

FS: They are driving too fast through Hanapēpē, everyone is in a big rush to drive through Hanapēpē.

AS: If you put a bigger bridge it will make it worse. People just drive so fast.

FS: Right over here by the library and church that comes into this property here. There is a cross walk for people cross from the library into the town right there so if a car stops there to let the people cross people pass around the car.

AS: That is very dangerous.

FS: You can get banged. All these other roads lead on to the main highway so it is dangerous pulling on to this main highway. Before it was okay was left traffic, but now there so much traffic going Waimea and so much agriculture farmers from Waimea that let out traffic.

AS: And then just small area here where there is four way intersection there is so much activity here because the library is there and they have expanded the library and of course the community has grown and there is more people using the library and across it the church. The church has the Tutu and me program and they have the hula there. There is so much activity coming in and out of this parking lot and it is actually a road, between when you go out you will see. On the right hand side is the library and the left hand side is the church and in the middle is supposed to be a road called Kona Road, but the county is not claiming it and the state is not claiming it and there is a big pot hole in the middle of it so nobody, the state won't repave it or strip it neither will the county, but it is really a road, so that is an issue. So then another problem is that when you leave and you want to turn left there is a bus stop right on the left and so when you are trying to leave and you want to turn left and if there is a bus there it is a huge blind spot, so it really unsafe. So once they start construction on bridge and it is not planned out for this particular area with going into Hanapēpē Town with all the Tutu and me and the hula and the library where they lectures all the time so there is a lot of people drawn into the area for those lectures, it is just super, super dangerous.

FS: So when they do construction on the bridge the traffic is going to back up in either way. So then the local guys go through the town bridge and rush through the town to the old bridge trying to get around the bridge traffic. They know the construction going be here so they going to take the town road around the construction but then it still will jam up everything.

CSH: What are your recommendations?

AS: Work at night.

CSH: What about coming out of these areas?

FS: Once they do it with a temporary bridge it is going to be a small bridge so that traffic is going to be backed up to the other lights and even back to other light here. One thing is the speed limit with the people driving on the new bridge on this highway right here to slow down more getting through Hanapēpē and more, better signage maybe.

AS: But we still want to see it have some kind of historic quality to it.

FS: This cross walk doesn't even have lights in front of the library. Traffic has always been a nightmare when they work on this bridge. So the temporary bridge I don't know how they are going to do that but that is going to be even worse. They have to keep the look of the old bridge.

AS: You know there is the sides of the bridge they are so beautiful for them to incorporate that into the design. I think when people drive from Līhu'e and they start to come to the west side it just gets quieter and people do start to feel that and people do start to slow down.

FS: Once you past the bridge your eyes are automatically attracted to the river, look out the ocean.

AS: That is another thing to keep that view plain open when they make the new bridge, the view plain from mountain to see. It is such a beautiful view. That would be so sad if you lose that.

FS: Because the rails of the bridge is so low, in the car you can see the river mouth and the ocean and that is why you want to keep that because Hanapēpē is still rustic, it still has that country look, you want to still be country look.

AS: It is still a nice community.

CSH: Is there anyone else I should talk to?

AS: Yes, Kako, Dorothy Hayashi, she is pretty outspoken if this doesn't go through her she will be really upset. Her phone number, use my name, say Abby said.

CSH: I am good with this may I ask your address?

FS: Here is our card.

Appendix D Rhoda Libre Transcription

Rhoda Makanani Libre was interviewed on December 16, 2015 at the Kaua'i Beach Resort (KBR) in Līhu'e, the following is a transcription of that taped interview:

CSH: *Aloha e Rhoda!*

RL: *Aloha No*

CSH: Ok just a few questions to get our interview in motion. Yea? So let's first start with your *inoa*, your name.

RL: Rhoda Lynn Libre

CSH: Libre... and where are you from? Where were you born?

RL: I'm from Kaumakani.

CSH: Were you born in Kaumakani?

RL: 'Ae [(yes)].

CSH: Ok.

RL: No! *A'ole!* I was brought to Kaumakani three days old. My mother gave birth to me in Kapiolani Hospital; Oahu.

CSH: Ok Oahu and then brought home to Kauai?

RL: 'Ae

CSH: 'Ae *maika'i* [(good)]. Ok so where did you grow up?

RL: Kaumakani

CSH: Ok um

RL: All in the Kona Moku actually.

CSH: 'Ae in the Kona Moku. Ok

RL: Makaweli Ahupua'a

CSH: Makawele?

RL: *Aupua, makai ami mauka uka.*

CSH: Ok

RL: Kou'ula

CSH: So let's ask who your parents were, or are *e kala mai*.

RL: My mother is Fely Guerrero Igne from Kaumakani and she was born in Kaumakani at home. My father was Felix Albarado Libre, he was born in Kekaha, and raised in Kekaha, and buried in Kekaha. And from my grandparents mana from my dad's side. Which is- I don't I am one of those Kanaka who have not identified all the genealogy through perhaps maybe family black sheep I don't know. But its- I have information but, you know, bits and pieces. Not complete like tita over

here or probably yours. My mother, from Kaumakani, her parents are from Philippines, and my grandparents-grandparents are from China so and then my grandfather from that side go to Spain from my father's side goes to Italy. So around there.

CSH: Oh beautiful so um Papa was from here too you said yea? Papa, your papa was from here too?

RL: Yes yes.

CSH: So can I ask what Mama and Papa did?

RL: Olokele

CSH: Olokele? Sugar company.

RL: Sugar Company yea they just worked Kaumakani yea Kaumakani. And they came- my grandfather came very early, early age 14 maybe.

CSH: Oh wow.

RL: Back and forth by freighting you know?

CSH: Mmhmm

RL: That's my mom's dad.

CSH: Oh yea *maika 'i maika 'i*.

RL: And then from there well, island yea? Travel... travel.

CSH: Sure sure

RL: So different tribe. And then my father's side is from a different tribe the Visayas.

CSH: Mmm, that sounds familiar to me the Visayas.

RL: Keone Nunes guys just came from there.

CSH: Oh ok ok

RL: You know looking for ancestry of Polynesians.

CSH: Right right exactly.

RL: So it's pretty interesting.

CSH: Yea so the travels of the *Mo'o*.

RL: Yea but raised *maka 'āinana* for the *pāpapa*

CSH: So before I go on, how was it growing up as a child in that area?

RL: Ocean, we're coastal people and except when we go *mauka* it's for *lā'au lapa'au* and for fishing (chuckle).

CSH: Right

RL: And for *ho 'okupu*

CSH: Mmhmm

RL: To take care the area because my grandfather was in charge of all the water.

CSH: I see.

RL: And you know all the diversion dams and the *auwai*.

CSH: Directly dealing with the river.

RL: With the resources as *maka 'āinana* so they worked but some of the culture was still there during the Robinsons the great grandfather time and the grandfather time.

CSH: Mmhmm

RL: So they still adhere to a lot of the protocol. As Westernization started impeding on the resources as impeding on food sources and habitat.

CSH: So as a child you and your family utilized your resources around you from *mauka* and *makai*?

RL: Yes since my grandfather was in charge and he was responsible. Whenever it rained we would go.

CSH: Does any of that action and practices end up by the river and the bridge area?

RL: Yea

CSH: Hanapēpē

RL: All over there but nothing with the new ones though.

CSH: Right right

RL: So most of the older ones are all diverted or broken.

CSH: What do you mean by new and old? Were you talking about bridges?

RL: Um the bridges...

CSH: The newer one, now we can go to the map real quick here sister.

RL: Yea cause now there is a few bridges in Hanapēpē yea?

CSH: This is the bridge we are talking about right here as you go over the hill. Get the gas station right? Here?

RL: Yea

CSH: So this is the bridge that will be replaced and on the side of it, as I understand it, an Acrow Bridge will be upon it.

RL: Ok

CSH: For a temporary bridge.

RL: Yea we saw that because there is another bridge over here.

CSH: Yea, that's the old one that they tried too um that you folks tried too hard to save and we do yea with all that money I understand.

RL: Yea

CSH: So as a child and in your mama and papa's time was this area utilized for practices?

RL: Yep, mmhmm.

CSH: And what were the practices?

RL: Um 'a'ama [(crab/*Grapsus tenuicrustatus*)], 'ōpae [('ōpae'ula, shrimp/*Halocaridina rubra*)], fishing, all the way up.

CSH: Wow wow oh my my going up into the valley.

RL: Yup

CSH: Oh nah

RL: Oh yea see, we going all the way up!

CSH: Right to Ka'ula?

RL: Yea

CSH: And these names along here, you familiar with the names as a child? Going up to these places?

RL: No

CSH: Ok

RL: No, we um [...] ho let me see. What do I remember? Who would remember? Maybe my brother guys would remember too and my uncle? They would remember the names. We would just go.

CSH: Mmhmm ok

RL: Oh! We would go get *laukahi*.

CSH: *Laukahi*? 'Ae, 'ae, 'ae. Also up there is where the *lā'au lapa'au* came from?

RL: Yea and then the ferns are on this side and certain area get 'ōpae and get frogs. And you know its private property yea?

CSH: Yea.

RL: Robinsons

CSH: So I can put *lā'au lapa'au* all up here yea?

RL: Yea it's all *lā'au lapa'au* and the 'o'opu [(Goby/*Awaous guamensis*)].

CSH: And the 'o'opu, I was going to ask you about.

RL: The 'o'opu and the 'ōpae was the primal indicators of what kind of-

CSH: The health of the water.

RL: Yea because we swam from over here all the way over here which was where we go crabbing and we catch mullet over there, we catch crab, we stay over there we stay on the banks over here.

CSH: Mmhmm

RL: Over here and my brother get *kalo* over here.

CSH: Ok when you guys catch crab what kine net you use?

RL: Um the net?

CSH: The round kine?

RL: The round ones.

CSH: Had mangrove over there when you was-

RL: No

CSH: Never have just-

RL: Noooo. The first one came by spears.

CSH: Aahh.

RL: And then vviiiipp!

CSH: And then boom they just took over?

RL: Yea! There you go! What's easier?

CSH: When you catch mullet was it just with net or was it pole?

RL: Pole, we dived.

CSH: Dive yea.

RL: It's hard to do when you dive. Unless you know cause get weight.

CSH: Cause get schools yea?

RL: Cause its weight and they're being chased, when they're running then you have a chance.

CSH: 'Ae, 'ae, 'ae.

RL: So you gotta work with like three or four people. I worked with my grandfather, my grandmother always had friends. Had Mr. Kanahale down there, Munihawa boy.

CSH: Mmmm

RL: And I was just a kid, I remember them.

CSH: And so when you came down to the bay, you guys, what did you do down there when you was young? Growing up?

RL: Oh we had small *hukilau* but it's not a bay for that.

CSH: Right

RL: But I remember Kaumakani, Hanapēpē, and Pākalā guys would get together with the i'a. Over here was a different type of caring cause it was all sacred area, yea? As a place of healing and over here the stream. Over here had one more stream and they killed it all. If you look at DAR and USGS, the older ones, you will find water. You know the tributaries whether they're perennial, whether their annual, nonetheless the tributaries that added towards that ahupuaa which have evidence, historical evidence, to which kanaka had villages or point of fisherman's point, right over

here, and fisherman's point over here cause if you look over here you can see all the way down here so you know that's how they communicate, yea?

CSH: Yea

RL: And this way all the way to Kaumakani, Pākalā.

CSH: Yes so this fits the stories that I have been hearing of this being a *leina-a-ka'uhane* for the spirits to *lele*.

RL: Correct and not only here because they connect yea?

CSH: Mmhmm Mmhmm Mmhmm

RL: Because we have traversing, traversing animal's yea?

CSH: Right

RL: And food. Food supply, that's the key.

CSH: Sustainability

RL: And these all down here, all the way to Waimea.

CSH: Ok

RL: Waimea River is nurseries.

CSH: Mmm

RL: Very important nurseries of *limu* and everything you know? Not specific but now it's just like impaired. So I am with the Marine and Coastal zone advisory for the State.

CSH: Mmhmm

RL: And we are the only body that lobbies.

CSH: Ok

RL: You know, under the office of planning and this has already been distinguished a hot zone all the way down here.

CSH: Ok

RL: Hot zone from here actually.

CSH: Oh from here? All of this?

RL: This way. We already identified that [...] already it's all hot zone especially here and some portions of Kaumakani. Hot zone, dead zone and then roof and pyramids already registered. And so now we already registered some native species with their numbers near decimation. You know so we working with DAR and UH.

CSH: DAR?

RL: Under DLNR.

CSH: Under DLNR and the acronym is?

RL: Division of Aquatics.

CSH: Division of Aquatics...ok...ok great.

RL: So we work pretty much laterally as far as *ahupua'a* where Kauai west side watershed comes in.

CSH: Ok

RL: And we have been doing this since 1992 after the hurricane when I came home from the mainland and going to college and the *kūpuna* came because I am from over here, Kaumakani, right here. Coming from here that's my house, 86 (laughter) and so our Kuleana is all over here and our house, we have another house over here, Hanapēpē Kuula Road.

CSH: Kuula Road, where's that?

RL: If you find Kuula and then there's the park right there.

CSH: Way over here yea?

RL: That little.

CSH: Let's make a mark here (on map).

RL: Because from here we go up this way and we go follow the road and that's how we go up yea.

CSH: Ok

RL: And so we catch *akule* [(Bigeye scad/*Trachiurops crumenophthalmus*)], the *opelu* [(Mackeral scad/*Decapterus pinnulatus*)], and we always had problems with the boats. The commercialization has always been an impediment.

CSH: Ok so as far as the land use of this area, what do you remember about the past land use of this area? Was there agriculture going on?

RL: Yea

CSH: What was going on in your time?

RL: Majority all agricultural and open, we had a conservation preservation yea.

CSH: 'Ae

RL: The first is preservation for conservation like a buffer zone.

CSH: Ok

RL: Greenway, they call it greenway which is the most logical thing when you deal with environmental science and hydrology because the river may fluctuate. So it is really important to have that greenway.

CSH: Ok

RL: Usually it was a thousand feet and in the ocean it was a thousand yards from any fringing reefs or any migratory stops.

CSH: How will the bridge replacement impact the greenway if any?

RL: Greenway, well they have already impeded it with a lot of rocks and they haven't restored, there is no remediation when the feds did their work the most recent work.

CSH: Ok

RL: You know because stability needs to be engaged with impeding the migration of native species and the impact of the native species along with the water quality, and along with cultural practices.

CSH: Ok

RL: Because the cultural practices there is still alive and at every point from 1992 there have been at least three attempts to commercialize the river to which this is already a selfsubsistency all over here because this is a hot spot.

CSH: There is still ongoing practices today.

RL: Never change. They have over a hundred and fifty years.

CSH: Those practices include *lawai'a* [(fisherman)], fishing, yea and then-

RL: *Kalo*

CSH: *Kalo!* Agriculture, *mahi'ai* [(farmer)]

RL: So you have all the *lo'i*'s, the *lo'i* are here, the *lo'i* are here (pointing to map), the *lo'i* are on the land.

CSH: And these are still being used as *lo'i* today?

RL: Yep

CSH: Ok

RL: Ok now we have a problem because many of them have been violated by illegal diversions.

CSH: Right yes.

RL: So now the numbers have dropped because of water diversions with less water being in the nurseries.

CSH: Mmhmm

RL: You know and the migration of the *oohu* because of taking trips over here and coming back over here, this is a straight shot.

CSH: Right right so-

RL: And that's why we have big numbers, I mean, overwhelming numbers. You stand from the back bridge and you just watch in the shadows. We would stand over here. Here is the gas station and the gas station used to be, what is the Japanese name? There is a gas station and they lived before they sold them to Kaikapu was Japanese and then my grandfather's good friend and I was good friends with that boy over there he lived in that first two houses, the grandmother and grandfather, and we go the little boat and we can see all the hinana runs so we would go up here, we go there, we go back up there, we go all the way up, we go fishing, we go crabbing, come back down. You know?

CSH: Wow

RL: But nothing compared to other stories where my dad guys and my grandfather guys, this thing was so wide and so deep that we used to have sampans come.

CSH: 'Ae, 'ae I heard of the sampans.

RL: Yea and so wide, and it was deep.

CSH: Mmhmm

RL: And it was clean the water and we had *limu* [(seaweed)] in the water which we gathered.

CSH: What kine *limu*?

RL: The freshwater the long-

CSH: The [*limu*] 'ele'ele [(*Enteromorpha prolifera*)]?

RL: Yea! The black one and the dark green one which is a little bit fatter but the other one is round. We ate a lot of that because we know when the season is coming and whenever the season that's when we gather. We don't gather in one place forever.

CSH: Right

RL: You know like we don't take *opihi* year around all over here I mean you know come on!

CSH: But you know these practices we want to make sure are ongoing in this bridge area.

RL: Yea still yet.

CSH: So the concern of the replacement for me is to ask will it impact the practices while it is being replaced. Will it lead to the contamination of water?

RL: Well we don't want that. So that is why within your planning should be, you know the conservation plan, should be consistent with the current, the water quality.

CSH: The ones doing the work is CH2M Hill.

RL: Yea because it all depends as a laymen.

CSH: Right.

RL: As a laymen it depends on how you build it and what you put, right? For example, if you put things that are porous or are readily impacted by water or temperature you know that will impact the water or when you guys doing [construction], when the guys can't go over there and fish. But then you know the thing is when you guys do all of that of course we going to be moving down and let you guys do what you need to do.

CSH: Yea. Them guys. Ok

RL: You know, whoever.

CSH: No them guys, who are doing the work, is CH2M Hill. I am here to record our cultural concerns and I want to make that clear.

RL: *Maika'i*

CSH: The kine um, when you grew up even today do you know of any cultural sites in which they called archeological sites like *heiau*.

RL: Not near there, the only thing happened in this bridge, but no it didn't happen over here, I don't know nothing over here. No not over here.

CSH: Ok

RL: Over here is just historical sites.

CSH: The cemetery

RL: Where there was the massacre and, you know, on the other bridge there was the massacre.

CSH: Massacre? Between? Who was that?

RL: There was a massacre there in the twenties.

CSH: Oh! In the twenties. Oh! Was that with the Filipino in the old newspaper I went um, I had to translate something about that I remember. "The massacre" I am going to write that down cause I remember translating, "Seven Filipino workers killed" or something.

RL: I think fourteen altogether?

CSH: Right fourteen. Ok great, I have to check that out. I will remember. So any other kind of? How about surfing? Was surfing a thing in the waters of Hanapēpē? 'Ele'ele? You guys never surfed that?

RL: Not over here.

CSH: No no I am talking in the bay area.

RL: Oh in the bay area? Mostly fishing, diving.

CSH: Ok mostly fishing.

RL: There is hardly any high waters to surf over there because it was considered *kapu* areas. Only once in a while you see somebody surf but that's only when get big waves. It's not a haunt. The haunt down over here is better surfing over here and further over here but the area multiage is never commercial.

CSH: How about *hula*? Any practices practices of *hula* going on in this area? Are they using? Are they gathering from these areas? Are they using the forest above?

RL: All over here get *hula heiau*. Two I know, and then I know get over here get some rocks. Had one like *heiau* over here but I not sure what they call it. It's like where all the rocks are in place.

CSH: Just like a *pā*? What do you call that?

RL: Yea, it's right by the river. Plenty of 'em around here.

CSH: So the practitioners of *hula* still use today these areas yea?

RL: Nope

CSH: No? They don't go use em today? Who is the *kumu hula* around the area?

RL: No more.

CSH: So no more *kumu hula*[s] in this area?

RL: But that's *kumu Kapu Kinimaka*, yea?

CSH: That's *kumu Kapu Kinimaka* guys?

RL: The Kapu guys, they related to Moishefum but then get Alquiza.

CSH: Alquiza? Yea I have heard of Alquiza.

RL: Yea so she teaches and I am sure she teaches of the area. You know that.

CSH: So ok, I would like to talk to her.

RL: From over here, my time, the only one that had teach over here was *kumu hula* Joseph Kahaulilio.

CSH: *Kumu hula* Joseph Kahaulilio.

RL: I am a student from Uncle Joe and I took from *kumu hula* Roselle Bailey, from over here, Big Island yea?

CSH: Yea yea.

RL: And she teach around the area so the *kumus*, if they *pono*, they teach from the area.

CSH: Yea

RL: And go over there but *kumu hula* Kapu is from Wailua and she came from over there and she married Alquiza over here but Alquiza he get many *ma'au*. He is real good. We're kajucambell, martial artist.

CSH: Ok so yea one of my questions is that, who else you think I should be talking to over here?

RL: You should talk to Glenn. He going know plenty and then from over there, maybe don't go to Francisco guys, they don't know that much you might as well talk to...you. And then from Glenn, Glenn can tell you the old timers. And but the one over here-

CSH: What's Glenn's last name?

RL: Alquiza

CSH: Alquiza... I don't know how to spell that? Yea I get um. 'Ae *mahalo*. I don't think I'll have time though this one, you know? But at least I got to you.

RL: And then um all over here. Oh! Who would know? What's his name? We just had Henry Caezas' birthday and the other George from the Hewa, he would know too. Even Henry would know, he is *hula* too. If you want somebody from here the huli and the kali. That kali no can hear.

CSH: Aunty Wilma guys?

RL: Aunty Wilma would know little bit.

CSH: I'll see her, yea Wilma.

RL: And then Oga. Oga is one of our founders from the, she needed a council so they created the Kaua'i Westside Watershed Council.

CSH: And that's what you guys meet on every Tuesday night?

RL: We try to but sometimes they do, sometimes they don't. So you know it's all communication since we all on email now.

CSH: Right

RL: And then from there once we have an agenda, you know instead of adding always to new business it's a target to accomplish all the old business which is the master plan, the master *ahupua'a* plan, which has thousands and thousands of hours of meetings and thousands of lives ready. It was founded by our *kūpuna* and my tenure was only in the 90's actually from the 60's because the *maka'āinana*, mines is Kaumakani to salt pond over here but then we usually, but these guys take care, which was my sister in law guy's family.

CSH: Ok

RL: And then our family over here.

CSH: What about any legends you remember that are associated with Hanapēpē. This area, any legends you familiar with.

RL: Mmhhh yea! Best to take it from the *kūpuna*.

CSH: Ok ok great.

RL: You know? I cannot share that one because some of em, like I asked Nolan, yea? Cause Nolan can answer all his questions no problem. Especially with the *hula*, the um, where stay? Around here somewhere I think. There is a big *hula* platform and an old rare *nawiliwili* tree [(*Erythrina sandwicensis*)] that he used to take care of every season and he would get the seeds and try to plant them but it doesn't want to give. So we supposed to go up but he got sick and so that have continued yea? Cause there is ancient walks yea over here.

CSH: Well yea that's what the other thing is, trails, what about any trails you remember? Had trails?

RL: When you see the *lā'au lapa'au* over here, certain over here, even in the ocean over here we get trail but you know it's not known to a lot of people they are not supposed to.

CSH: Would you consider them ancient trails though?

RL: Yea

CSH: You would?

RL: Yea, Nolan, and they care for it as such.

CSH: Ok

RL: Because one thing with the *kūpuna* in this are they haven't given any information to the state or the county therefore sometimes when you look there is a lot of *pukas*. Because it's privy, yea, plenty privy. So it should come from their *niho* [(teeth)].

CSH: So what are your concerns? Or maybe you say community concerns about this replacement of the bridge and the process of which it will be done?

RL: Well we would like to be on the ground floor with the planning and as much possible with the planning and whatever we can be of assistance because the integrity of the water is held upmost to the integrity of the *ahupua'a*. And that is our mission statement to make sure and maintain the integrity of the habitat.

CSH: Have you had a meeting here yet? About this bridge project?

RL: No I understand some other people had but you know, from this area, no.

CSH: Is that a concern of yours?

RL: Yea yea they should have the Kauai Westside Watershed Council be informed.

CSH: Kaua'i...

RL: Westside.

CSH: Westside...

RL: Watershed.

CSH: Ok

RL: Council. And we are the advocacy for the inter-agency and cultural protocol.

CSH: And who would be the contact person for that?

RL: I would be.

CSH: Ok.

RL: And then from there, our board.

CSH: Ok is this 501(c)(3)?

RL: Yes

CSH: Great ok

RL: They represent the Hanakaumaka Pu'u honua which is not a 501(c)(3) or incorporated they are just a community which is Hanakaumaka Pu'u honua they not incorporated.

CSH: So as you was the head of the board? Are you chairman or chairperson?

RL: I am director for now.

CSH: Director for now.

RL: Yea and then we have a board.

CSH: Then you have a board?

RL: Yea

CSH: Who do I send, where do I send information to?

RL: To me.

CSH: To your address? What's your address?

RL: P.O. Box uh let me see you can give it to the office. 1970 Hanalima.

CSH: Hanalima?

RL: Mmhhh street, D as in dog, 201 Līhu'e-

CSH: D as in dog?

RL: Mmhm

CSH: 201? Līhu'e?

RL: 96766

CSH: Ok so not P.O Box?

RL: No, that's Kaumakani, I am over here.

CSH: Ok so 1970 Hanalima Street?

RL: Yea, Yamaha.

CSH: Yea that's great 'cause we need to have that and make sure others are included. Who else did he tell me to talk to? Um Kako.

RL: Oh yea.

CSH: Who's Kako? I was supposed to try get ahold of Kako but I'll email her and maybe through email she can give me her concerns or knowledge about that area.

RL: Yea and then so... Yea just a few things for practices.

CSH: Do you have any recommendations regarding the management for protection and development for this project? What can you recommend regarding that site?

RL: Make sure your conservation plan is congruent to watershed practices, yea *ahupua'a*. When you are building you need do consider the weather.

CSH: Mmhm

RL: All of that. What kind of materials will be placed in there? What kind of time and consideration for the traffic flow because it's on time issues in the morning and the afternoon and especially in the late afternoon. Then you work time, and then the tribility and the solemnity, and the impact to the depth not only on top, within, and below yea, in that area, besides the cultural practices and the safety, mostly the safety and that's the reason why you are doing that, it's just a remediation. Now my question would be, with this one, is this just maintenance, or is this enhancement, or is this a repair to the past 200 year flood that we [have been experiencing] to which a container from down hit the bridge then hit that big bridge and went out to sea? There were two containers and one in, I am not sure if it is still in there and I am not sure if they pulled it out, but that one we witnessed hitting the bridge.

CSH: Wow I didn't know that.

RL: Yea and we were all there and all the cops were there. 'Cause we are a small community you know Brittany and I and my sister-in-law and all of us went and we saw that.

CSH: Help yourself cuz. Yea so you know yea. So what I am getting is, I got your questions those are good questions for them too.

RL: Conservation plan, because all I am talking about is all supposed to be in the conservation plan. Which is congruent and compliant to the *ahupua'a*.

CSH: But you witnessing and seeing the thing hit the bridge so replacement is that a good thing? Does it need to be replaced and does it need to be replaced to its historic look?

RL: Mmhmm

CSH: Historic value?

RL: Correct.

CSH: Ok

RL: Because the historic item has been violated therefore restoration of the historic look with the enhancement of preservation-

CSH: So keep it like it is?

RL: Correct

CSH: Cause the view plains there are beautiful. Cause when I stand on there-

RL: They should because our view plains are protected.

CSH: It's amazing, it's a beautiful view from there.

RL: Yes, must be preserved.

CSH: Ok ok that's good.

RL: *O'opu* and *'ōpae* migration and quality of water is very important.

CSH: Wow, I thank you for the work that you are doing I think it's very important.

RL: Oh *mahalo!*

CSH: Yea! *Mahalo nui.*

RL: So now something really important too, and with that said, build a formula and the balance of the chemical formation of the biota from top to bottom. You know cause consistency is really important because they are born and raised up there and they are coming down, no I am sorry they are born and raised and they are heading back up. It needs to be consistent because if everything is all natural and good and holistic as it should be. With the amount of numbers you see shadows now you never see anything.

CSH: Right

RL: You see a little thing, ooh! The numbers! I go, brah! That's not even 100. So don't tell me, so that's what I told but you know that's alright. Everybody has their own intentions. You know? Altruistic intentions.

CSH: So from your cultural background, and your parents cultural background, did they use some of their own traditional practices here in Hawai'i?

RL: Mhmm

CSH: What were they?

RL: They melded together always half half.

CSH: The melded them together with Hawaiian?

RL: It was strange because in my parent's time it was a little bit more different because you had this population, this growing percentage of wanting to be more American. So you would lose that percentage like you would have five kids, but [...] and sometimes the family, only one of them,

will adhere to full *ahupua'a* practices, full cultural protocol, instead of what is going to get me something. Don't use the culture to do that. That way decimates and really insults all the *'uhane* [(spirit)] and all of the *kahiko* [(ancient)] that-

CSH: So did your parents practice in your time?

RL: My grandparents did. They practiced, we practiced both!

CSH: Both? Wow that's great.

RL: Yea cause you know why? The reason why they merged like that, because it was whatever it was, whether it was Filipino, or Hawaiian, or Polynesian, or Chinese it melded to the commonality of the most holistic paradise which, it equates to paradise, which is *momona na mea'ai* [(rich in abundance)].

CSH: 'Ae, 'ae-

RL: And that's where I was born.

CSH: Yea yea

RL: Where's *momona* [(fat or fertile, rich soil)] [...]

CSH: I think that's the beauty of why I ask that because there are commonalities, there are similarities from the Philippines' to Hawaii. The land formation was-

RL: Its universal, it's universal.

CSH: It's just, yea.

RL: Yea its universal cause whatever you are surrounded by, whether its water, whether its mountains, whether its land, whether its whatever. Everyone is an island, and that's what I was taught. And that's my grandfather, my grandfather say, "you go to school, you learn over there but no believe."

Both: Hehehe

RL: But that's political, they taught me how to be political really early. I don't know why?

CSH: Ah see

RL: I don't know why? I just went, at least I was obedient.

CSH: That's good! 'Ae *pololei* [(yes, correct)].

RL: And I grew up in a taro patch, and grew up in a garden, grew up in the ocean.

CSH: Mmhmm

RL: It wasn't like I go recreate or whatever.

CSH: Right you went plant everything.

RL: It was to take care and plant.

CSH: Yea that's right.

RL: To plant *limu*.

CSH: *Kalo?*

RL: And to make sure people no overfish.

CSH: Ok so not only gathered but you went *mālama* [(to care for)]?

RL: We *maka'āinana* [(people that attend the land)]

CSH: You when restore what you, yea, restoration processes.

RL: That's what the duties of a *maka'āinana* is. Then you guys get the one who only like the *māhele* (divide). Where is mine!

CSH: *Auwē ho'i* [(oh my goodness!)]

RL: And then go over to the resources and pollute it.

CSH: Wow

RL: And it is not indicative to any color or language. Hahaha!

CSH: That's the stating of life.

RL: Growing up with Roselle Bailey and Uncle Joe they speak in pinul.

CSH: Mmhmm. 'Ae.

RL: Especially all the music they taught us.

CSH: Well then that's really all I have. But what I would like to do is, do you want a map like that?

RL: Yes please.

CSH: I will make a copy and send it to you in a tube.

RL: That would be great.

CSH: Ok I will write that down.

RL: Please do and I will add it to our archives and document that we had this meeting cause-

CSH: Do you want me to send out the whole packet that was sent out to everybody?

RL: Yea cause I am going to have to review all of our people over there when we have our meeting on a Tuesday and then I am sure they are gonna wanna contact and then you are going to have another plethora.

CSH: Oh that's cool. Good so to this address?

RL: So that way you become more comprehensive. Instead of such a synoptic brief.

CSH: Well I am glad to meet you because I have been away for a couple years working on my stuff but coming back I tell you. Um yea we can shut this off.

RL: I know your name because the marine and coastal zone.

In a follow up with Ms. Rhoda Makanani Libre on 22 March 2016 she re-iterated in writing:

The 'o'opu and limu and their migration, feeding, habitat and nursery grounds are vital indicators to the integrity of the waters that lead to the shoreline and reefs and surrounding waters and biota of this bridge. Turbidity, pollution, foreign matter introductions of biological, chemical, or physical is important to consider as well as native gathering and practices. There is no commercial activities or kayaks, motor powered vehicles, paddle boards or any intrusions to native habitat and migration and practices. Please keep me abreast of any actions in regards to this project or any developments in consultations in the Kona Moku. Your considerations are appreciated and thank you kindly for consulting the lineal and cultural regional maka'āinana of the Hanapepe area. These waters and areas are sensitive and a fragile environment and quite beloved and revered by our people of this *Ahupua'a* (that includes air, ocean, *muliwai*, and activities). *Mahalo loa*.

In a follow up with Ms. Rhoda Makanani Libre on 5 April 2016, regarding the approximately .15-acre change to the project area, she posed these questions in writing:

Will there be any additions to lanes (i.e. car, bike, walk path) and has an assessment to the damages made by Monsanto containers during past flood that hit both bridges [and] spilled chemicals into waters [and] soil [and] reefs? Irrevocable injuries to bridges, food supplies, practices, and habitat were evident [and] should [be] addressed.

Appendix E Authorization and Release Forms

E.1 Frank and Abby Santos

Cultural Surveys Hawai'i, Inc.
Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President



P.O. Box 1114 Kailua, Hawai'i 96734 Ph: (808) 262-9972 Fax: (808) 262-4950
Job code: HANAPEPE 8 nishihara@culturalsurveys.com www.culturalsurveys.com

AUTHORIZATION AND RELEASE FORM

Cultural Surveys Hawai'i (CSH) appreciates the generosity of the *kūpuna* and *kama'āina* who are sharing their knowledge of cultural and historic properties, and experiences of past and present cultural practices for the proposed Hanapēpē River Bridge Replacement Project, Hanapēpē Ahupua'a, Waimea District, Kaua'i, Tax Map Keys (TMK) [4] 1-9-007:001 (Hanapēpē Canal) and 013 por.; and [4] 1-9-010:014, 015, and 046 por. Kaumuali'i Highway Right-of-Way.

We understand our responsibility in respecting the wishes and concerns of the interviewees participating in our study. Here are the procedures we promise to follow:

1. The interview will not be tape-recorded without your knowledge and explicit permission.
2. If recorded, you will have the opportunity to review the written transcript of our interview with you. At that time you may make any additions, deletions or corrections you wish.
3. If recorded, you will be given a copy of the interview notes for your records.
4. You will be given a copy of this release form for your records.
5. You will be given any photographs taken of you during the interview.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for reports on cultural sites and practices, historic documentation, and/or academic purposes.
2. You agree that the interview shall be made available to the public.
3. If a photograph is taken during the interview, you consent to the photograph being included in any report/s or publication/s generated by this cultural study.

I, ABIGAIL SANTOS, agree to the procedures outlined above and, by my
(Please print your name here)
signature, give my consent and release for this interview to be used as specified.

ASA
(Signature)

12.14.15
(Date)

E.2 Rhoda Libre

Cultural Surveys Hawai'i, Inc.
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Hallett H. Hammatt, Ph.D., President



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AUTHORIZATION AND RELEASE FORM

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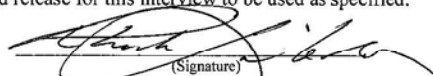
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2. If recorded, you will have the opportunity to review the written transcript of our interview with you. At that time you may make any additions, deletions or corrections you wish.
3. If recorded, you will be given a copy of the interview notes for your records.
4. You will be given a copy of this release form for your records.
5. You will be given any photographs taken of you during the interview.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for reports on cultural sites and practices, historic documentation, and/or academic purposes.
2. You agree that the interview shall be made available to the public.
3. If a photograph is taken during the interview, you consent to the photograph being included in any report/s or publication/s generated by this cultural study.

I, RHODA LIBRE, agree to the procedures outlined above and, by my
(Please print your name here)
signature, give my consent and release for this interview to be used as specified.


(Signature)

1.16.15
(Date)

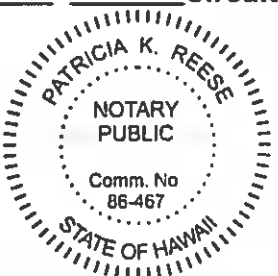
Appendix G
National Historic Preservation Act Section 106
and HRS Chapter 6E Consultation Documentation

AFFIDAVIT OF PUBLICATION

**IN THE MATTER OF
NOTICE OF CONSULTATION-HANAPEPE BRIDGE**

STATE OF HAWAII)
) SS.
City and County of Honolulu)

Doc. Date: AUG 28 2015 # **Pages:** 1
Notary Name: Patricia K. Reese First Judicial **Circuit**
Doc. Description: Affidavit of
Publication
AUG 28 2015
 Notary Signature [Signature] Date



Lisa Kaukani being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser, MidWeek, The Garden Island, West Hawaii Today, and Hawaii Tribune-Herald, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

- Honolulu Star-Advertiser 0 times on:
- MidWeek 0 times on:
- The Garden Island 1 times on:
08/28/2015
- Hawaii Tribune-Herald 0 times on:
- West Hawaii Today 0 times on:

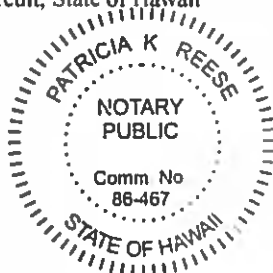
Other Publications: 0 times on:

And that [Signature] is not a party to or in any way interested in the above entitled matter.

Lisa Kaukani
 Subscribed to and sworn before me this 28th day of August A.D. 20 15

Patricia K. Reese
 Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii
 My commission expires: Oct 07, 2018

Ad # 0000791369




NOTICE OF CONSULTATION
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT OF 1966 AS AMENDED (2006) AND CHAPTER 6E OF THE HAWAII REVISED STATUTES
HANAPEPE BRIDGE REPLACEMENT PROJECT
 WAIMEA DISTRICT, KAUAI ISLAND, HANAPEPE AHUPUAA
 FEDERAL-AID PROJECT NUMBER: HI STP SR50(1)
 TAX MAP KEYS: (4)1-9-007:001 HANAPEPE CANAL, (4)1-9-007:013, (4)1-9-007 KAUMUALII HIGHWAY RIGHT-OF-WAY, (4)1-9-010:015, (4)1-9-010 KAUMUALII HIGHWAY RIGHT-OF-WAY

Notice is hereby given that the Federal Highway Administration, Central Federal Lands Highway Division and State of Hawaii Department of Transportation, Highways Division propose to replace the Hanapepe River Bridge at Mile Post (MP) 16.57 on Kaumualii State Highway 50 (HI-50) in Hanapepe Ahupuaa in Waimea District on Kauai.

The existing Hanapepe Bridge, built in 1938, does not meet current seismic requirements and has a substandard load carrying capacity. The proposed project would replace the Hanapepe Bridge and its approaches to maintain the Hanapepe River crossing on HI-56 as a safe and functional component of the regional transportation system for highway users. The new structure would accommodate two 12-foot travel lanes, two 8-foot shoulders, two 5-foot sidewalks, and concrete bridge railings on both sides. The new concrete railing would have openings and would be 42 inches tall for bicycle safety. The potential area of disturbance, including temporary construction areas, is 2.3 acres.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (2006), and Chapter 6E of the Hawaii Revised Statutes, Native Hawaiian organizations and Native Hawaiian descendants with ancestral, lineal or cultural ties to, cultural knowledge or concerns for, and cultural or religious attachment to the proposed project area are requested to contact Mr. Michael Will via email at Michael.will@dot.gov or by US Postal Service to 12300 West Dakota Avenue, Suite 380, Lakewood, CO 80228-2583.

Please respond by September 30, 2015.





STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAII 96817

HRD15-7584B

September 30, 2015

J. Michael Will, P.E.
Project Manager
U.S. Department of Transportation – Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 380
Lakewood, CO 80228

Re: National Historic Preservation Act Section 106 Consultation
Hanapēpē Bridge Replacement
Hanapēpē Ahupua‘a, Waimea Moku, Kaua‘i Moku
Tax Map Key: (1) 3-5-005:016

Aloha e J. Michael Will:

The Office of Hawaiian Affairs (OHA) is in receipt of your August 26, 2015 letter, initiating consultation pursuant to the National Historic Preservation Act for a proposed work project located in Hanapēpē, Kaua‘i, Project NO. HI STP SR50(1). The existing Hanapēpē bridge does not meet the current seismic requirements and has substandard load carrying capacity. The scope of work includes two, 12-foot travel lanes; two, 8-foot shoulders, two 5-foot sidewalks; and concrete bridge railings on both sides. The new railings will have a similar style to the existing 1938 bridge. The bridge design closely resembles the historic character of the existing bridge, which is eligible for listing on the National Register of Historic Places.

The project plan includes a plan to replace the existing, deficient 1938 Hanapēpē Bridge to meet current design standards for roadway width, load capacity, bridge railing and transitions, and bridge approaches.

OHA recommends consultation be initiated with the following individuals and community organizations who may be willing to share their mana‘o on this assessment with you:

- Families from Hanapēpē Salt Pond

J. Michael Will
September 30, 2015
Page 2

- Frank Santos – Salt maker and practitioner
- Sarah Peters – Kaumuali'i Hawaiian Civic Club member
- Wilma Holi – Kaumakani resident and cultural practitioner

Please know that this list is not all encompassing and we are sure additional individuals will be identified as you move forward with your consultation process. The above contact list was also provided to Nicole Ishihara of Cultural Surveys Hawaii, Inc. in preparation for the Cultural Impact Assessment for this project.

OHA does request assurances that should iwi kūpuna or Native Hawaiian cultural deposits be identified during ground altering activities, all work will immediately cease and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

Thank you for initiating consultation at this early stage. Should you have any questions, please contact Kathryn Keala at (808) 594-0272 or kathyk@oha.org.

‘O wau iho nō me ka ‘oia ‘i‘o,



Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:kk

**Please address replies and similar, future correspondence to our agency:*

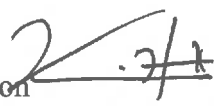
Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy, Ste. 200
Honolulu, HI 96817

COUNTY OF KAUAI
PLANNING DEPARTMENT
4444 RICE STREET, SUITE A473
LIHUE, KAUAI, HAWAII 96766-1326

MEMORANDUM

DATE: October 28, 2015

TO: J. Michael Will, P.E.
Program Engineering Manager
Federal Highway Administration
Central Federal Lands Highways Div.
12300 West Dakota Avenue, Suite 380
Lakewood, CO 80228

FROM: ^{FOR} Kauai Historic Preservation Review Commission 

SUBJECT: Letter (8/25/15) from J. Michael Will, P.E., Program Engineering Manager, US Department of Transportation, Federal Highway Administration requesting to be placed on the Kaua'i Historic Preservation Review Commission agenda to discuss and review the Wainiha Bridges No. 1, 2, 3; Bridge 7 E; Kapa'a Stream Bridge; and Hanapēpē River Bridge.

This is to inform you that the Kauai Historic Preservation Review Commission (KHPRC) met on October 1, 2015 to discuss and review the proposed bridge projects submitted in accordance with the Section 106 Consultation.

The KHPRC appreciated the opportunity to comment on the project and received the documentation on the subject bridges. The comments offered by the KHPRC are contained in the attached minutes of the KHPRC meeting of October 1, 2015.

Please feel free to contact us should you have any questions regarding this matter.

Mahalo.

cc: State Historic Preservation Division

attachment

KAUA'I COUNTY HISTORIC PRESERVATION REVIEW COMMISSION
Līhu'e Civic Center, Mo'ikeha Building, Meeting Room 2A/2B

MINUTES

A regular meeting of the Kaua'i County Historic Preservation Commission (KHPRC) was held on October 1, 2015 in the Līhu'e Civic Center, Mo'ikeha Building, Meeting Room 2A/2B.

The following Commissioners were present: Chairperson Pat Griffin, Anne Schneider, Stephen Long, Charlotte Hoomanawanui, Victoria Wichman, and Larry Chaffin Jr.

The following Commissioners were absent: Althea Arinaga, David Helder, and Kuuleialoha Santos.

The following staff members were present: Planning Department – Kaaina Hull, Shanlee Jimenez; Deputy County Attorney Jodi Higuchi-Sayegusa; Office of Boards and Commissions – Administrator Jay Furfaro, Support Clerk Darcie Agaran.

CALL TO ORDER

The meeting was called to order at 3:00 p.m.

APPROVAL OF THE AGENDA

Ms. Griffin: If there are no objections as we move to approve the agenda, I would like to place Items C.2., C.3., and C.4. at the end of the business today, rather than where they appear now. With that, may I have a motion to approve the agenda?

Ms. Schneider: I make a motion that we approve the agenda.

Mr. Chaffin Jr.: Second.

Ms. Griffin: Thank you. Ms. Schneider moved and Mr. Chaffin seconded the motion. All in favor? (Unanimous voice vote) Opposed? Hearing none, the motion carries 6:0.

APPROVAL OF THE AUGUST 6, 2015 MEETING MINUTES

Ms. Griffin: The Approval of the August 6, 2015 Meeting Minutes. Are there any corrections?

Hearing none. May I have a motion to approve?

Ms. Wichman: Move to approve.

Ms. Schneider: I second the motion.

Ms. Griffin: Ms. Wichman moved and Ms. Schneider seconded the motion. All in favor? (Unanimous voice vote) Opposed? Hearing none, we accept the minutes as written. Motion carries 6:0.

COMMUNICATIONS

Re: Letter (9/8/15) from Ronald A. Sato, AICP, Senior Associate, HHF Planners Regarding Environmental Reviews for Federally-Subsidized Public Hearing Projects (County of Kaua'i); Section 106 Consultation – No Effect Determination – Hale Hoolulu (Eld), TMK: 5-2-08:56; Hale Hoonanea (Eld), TMK: 2-1-03:17; Hale Nani Kai O'Kea (Eld), TMK: 4-6-14:105; Home Nani (Eld), TMK: 1-6-07:31; Kawailehua (Federal), TMK: 2-6-04:58; Kekaha Haaheo, TMK: 1-3-08:20 & 26.

Ms. Griffin: Item B.1., a letter from Ronald Sato regarding environmental review for Federally-Subsidized Public Housing Projects; Section 106 Consultation.

Mr. Chaffin Jr.: Where is that?

Ms. Griffin: It's at the end of the minutes, so it's...let's call it half an inch in.

Is there anyone in the public who is here to testify on the Federally-Subsidized Public Housing renovations? No. If there aren't comments at this point, may I have a motion to receive the communication?

Ms. Schneider: I make a motion that we receive the communication.

Ms. Griffin: Ms. Schneider has moved and Ms. Wichman has seconded the motion to receive the communication.

Mr. Chaffin Jr.: From HHF Planners?

Ms. Griffin: Yes. Discussion? Hearing none. All in favor? (Unanimous voice vote) Opposed? (None) The motion carries 6:0. Thank you.

UNFINISHED BUSINESS

Re: Letter (7/17/15) from Kimi Yuen, Senior Associate, PBR Hawai'i & Associates, Inc. informing the KHPRC of the Draft Environmental Impact Statement (EIS) for the Hā'ena State Park Master Plan that has been prepared pursuant to Chapter 343 of the Hawai'i Revised Statutes and Administrative Rules, Title 11, Chapter 200.

Ms. Griffin: Item C.1., Unfinished Business. The letter from Kimi Yuen, Senior Associate at PBR Hawai'i & Associates informing the KHPRC of the Draft Environmental Impact Statement for the Hā'ena State Park Master Plan. There is a memorandum in our packet, immediately after the HHF Planners letter. Kaaina, would you like to tell us about this, please?

Deputy Director Kaaina Hull: Yes, just real briefly. During the last KHPRC meeting, essentially the Hā'ena State Master Plan, the draft EIS, was being presented to you folks for your review and comment. The ultimate summary that happened at the meeting was there were some concerns, there were some statements, but overall there was a concern of having time to review the draft EIS in which the Commission wanted additional time to review it on their own and submit comments to the Department to essentially synthesize, and then get back to you folks for your review and action.

So the comments that you have before you now are what the Department received. The Department is in agreement with these comments and would recommend passage of, or adoption of those comments to be sent to OEQC for their inclusion in these communications for the draft EIS.

Ms. Griffin: And that's Office of Environmental Quality Control.

Mr. Hull: Correct. Sorry about that.

Ms. Griffin: Thank you. There is the two-page response. Is there a motion to adopt?

Ms. Schneider: I make a motion that we adopt the comments as Kaaina has stated them.

Ms. Griffin: Second? Larry Chaffin seconded. Anne Schneider made the motion. Discussion?

Mr. Long: This is about the Hā'ena Beach Park?

Ms. Griffin: It's the State Park Plan, yes.

Mr. Long: Right. I have some comments.

Ms. Griffin: About the draft of the memo?

Mr. Long: Not about the memo; about the plan itself.

Ms. Griffin: Okay.

Mr. Long: Is now an appropriate time for that?

Ms. Griffin: The motion has been made to adopt the comments as they were sent in to the Planning Department from any of us who sent them in, and to adopt them as written. So we should deal

with whether or not to adopt these; that's the motion. And then I will ask if there are other comments.

If there are no comments, the motion has been made to adopt this memorandum as written. All in favor? (Unanimous voice vote) Opposed? Hearing none, they are adopted. Motion carries 6:0.

Along with the letter, are there other issues? Stephen?

Mr. Long: Oh, thank you. I did have some additional thoughts or questions or comments regarding the Hā'ena Beach Park Plan. Is there a representative from the consultant or the State here?

Alan Carpenter: Yes.

Ms. Griffin: Mr. Carpenter, please identify yourself as well.

Mr. Carpenter: Hi. Good afternoon, Commissioners. I'm Alan Carpenter, Division of State Parks. So not to step backward, but if I may kind of give you a brief update on things that have happened from our side since the last time we met.

We were under the understanding that you folks were going to compile your comments and get it to us by the deadline, which was September 8th. We held a public meeting on August 19th. It was very well attended in Hanalei; over three hundred (300) people. It was a little contentious, and many people at that time asked for additional time to digest the plan because it is a very intimidating document as there is a lot in there and it's very complex. Subsequently we also received a number of written comments asking for an extension. We have, in fact, granted that extension to the public and we have a new date of October 9th to accept formal public comments. However, subsequent to that, we also met again with our Master Plan Advisory Committee and the consensus after that meeting was there's enough dissention and confusion in the community about the plan that the amount of time that we had given to digest it and the amount of time we spent presenting the plan in a public forum was not adequate. We agreed collectively that was, in fact, the case and that we would rather get this done right than get it done quickly. So we have internally, we're not putting a halt to the OEQC process, but we are going to take more time to engage with the community, have additional public outreach led by the Master Plan Advisory Committee who feel...they've invested so much in the plan that it's really their responsibility to take it out, obviously with State Parks support. We envision that process is probably going to allow for another six (6) months of discourse prior to taking the plan to the DLNR Board for finalization, so there is time. I'm not saying hey, give yourselves six (6) more months and get back to us, but we will continue to accept comments, particularly from agencies because of the complexity and the length of the plan, and our own, sort of, misstep in taking it out at such a late time. There was a lot of public interaction, but it was very early on and this has been like an eight-year process, so we feel that it's only fair to the community to extend it at this time.

Ms. Griffin: Well thank you. You will be getting a memorandum from the Historic Preservation Review Commission with our comments as it stands now. There are additional questions I think that you have.

Mr. Long: Yes, thank you. At our last meeting with you, and thank you very much for being here, I also understand that our responsibility is towards historical nature of comments, so I'm going to keep myself to that subject.

Mr. Carpenter: Thank you.

Mr. Long: I had a question about the resources that were mauka of the highway. How are those going to be handled and access to those?

Mr. Carpenter: That's a complicated issue because we have identified rock fall danger immediately of the cliffs, which includes the highway and a little bit makai of the highway. To back up a little bit, we originally envisioned taking jurisdiction of the highway from DOT, turning it into an interpretive pedestrian corridor, which would highlight the caves and the other sites mauka of the highway, as well as the lo'i to the makai side. We have pretty much committed, through a collaborative process with the community, to moving people away from the rock fall hazard, which is where that boardwalk trail comes in, in the plan, right. That trail is situated so that it's beyond the 0% rock fall hazard line; that was not originally part of our intent. So there will be no directed public access along the highway, which gives you the most direct views of, in particular, the two (2) wet caves. However, those caves will be interpreted from this trail, so there will be an interpretive waypoint along the way. In fact, there are a couple of advantages to the boardwalk, and this was something proposed by the folks who are working the lo'i; not by us. They direct people and they keep people in a single, sort of, file corridor away from the hazard zone, but also you are kind of immersed...this is both a plus and a minus...you're immersed in the lo'i system. You are walking right through it, so you get the best view of that cultural landscape because you're in the middle of it. But you also get a view of Makana, which is a very important cultural peak that is over lined at the whole park with tremendous significance; a view that you don't get when you're right up against the base of the cliffs and you're walking on that road. You can't see it. So it's another thing, you get to see a little bit more of Hā'ena's cultural landscape as you move. Now, we are not going to physically barrier anybody from walking down the road, but you will have to do so at your own risk. I think due to our primary mission of keeping people safe, we're not going to invite people to those caves.

Mr. Long: There are two (2) caves, the dry and the wet cave, down on the highway.

Mr. Carpenter: They are both wet; one (1) is higher than the other.

Mr. Long: Okay. And then up above, for decades we'd take the kids and go up, and there's this cave up there where you can go into.

Mr. Carpenter: Right. Okay, yes, the dry cave is back at the County Park.

Mr. Long: About 35, 40 feet up. So that's the cave we'd take our kids to; put lifejackets on them, take them through various caverns, which was fun.

Mr. Carpenter: Yes. It is and a lot of people do it. Technically, it's not allowed, right; swimming in the waters is not allowed, and we'll probably keep it that way. Again, that is right smack dab in the middle of the rock fall hazard zone, so we are not going to invite people to go up there. You know, it's a double-edged sword. You can go back and look at what we had to do with Kaliuwa'a, Sacred Falls on O'ahu, which is a very culturally important place to a lot of people, but the danger is so great that we felt that we had a duty to literally keep people out, so nobody can go there today. I don't know if it will come to that. I don't know if the risk in this area is of that magnitude. I know the engineers who do the study; I think they do good work. I haven't read the rock fall danger report cover to cover, and some of its just probability, so I can't say how great that risk is.

I know that when I go to places, I have a very, sort of, keen awareness of hazards now when I visit places. I see things differently now that I've seen all of these hazards in our own parks. I always use, sort of, the barometer of well, would I take my kids there? And I think I would. I would probably take my kids up there. But that's not a...you can't use my measure, right, so we have to go with what the report says, and if it says there's a high risk of somebody being injured or killed, we either have to mitigate that risk or move people out of the way. And that's, you know, we are going to move them out of the way and simply not invite them in. There's not going to be people chasing you up there and telling you to get out most likely, but staffing's a whole other issue.

I see you had a concern in here that the cost involved in implementing this is an issue. I think the first one was, is this ever going to happen? Will this Master Plan ever be completed? The Master Plan will be completed. Will it be fully implemented? I doubt it will ever be 100% implemented. It will be implemented in phases as funding allows, and I think little things hopefully will help the community realize that these are small changes that are for the good. We like to think that the whole process is going to be a community-based adaptive management strategy. So the community has been driving this from the beginning, but we have to accept it and we have to accept the liability that our decisions bring. Anyway, I hope...has that answered your question at all?

Mr. Long: Yes, thank you.

Mr. Carpenter: Alright.

Mr. Long: During your last presentation to us, you mentioned something about no restrictions for traditional gathering rights. I take that to mean if somebody in the neighborhood wants to go fishing, they got their fishing pole, they can walk down the highway and go fishing. So what kind of mechanisms are going to be in place to allow that to happen?

Mr. Carpenter: My guess is...I think the easiest way for us to implement that would be to have a Special Use Permit that people could get, probably annually. You come in, you give your reasoning behind your cultural attachment, your reason to get there, and that would be your pass for that year to get in. It wouldn't cost anything.

Mr. Long: Okay. I know that you are going to have to restrict the number of people by about half. We don't have the site plan up here, so what happens when somebody drives down to the end of

the road, and at what point are they told to turn around? I mean, is there a sign like the “Closed Bridge” barrier that says “Kē‘ē Beach now full for the day”?

Mr. Carpenter: I think there are a number of ways that could happen, and I don’t think we have the answer. This is largely dependent...the notion of setting a visitor limit, which is really breaking new ground, not just here, but anywhere. I mean, there’s no National Park that does that, currently. We don’t have a model to go on. All we know is there’s too many people there now; too many cars and too many people. And it’s having a detrimental effect on the resource and visitor experience. There are so many things that have to come together before we can even think about implementing that. So we have to have the issue of enforcement outside of the park. A shuttle is almost mandatory to be in operation if we are going to cut down the number of cars dramatically. To answer your question, I don’t know exactly how it will work. Whether it would be you have to purchase an advanced ticket for any given day, or whether it would be all manifested right there by a control point and staff in the park; probably a combination thereof. There’s a lot of scenarios envisioned in that plan, and I think that’s part of the reason people are very concerned about it because it looks like we’re just throwing out all of these things to confuse people, but we are really throwing out all of these things because we are not sure which one is going to work. We want to be able to implement and adapt as we go to make sure that if we mitigate all of the impacts in the park, but create a whole bunch outside, that’s not a success, right? So, we don’t know, but it probably will start with limited parking and no visitor limit; that will be the first step. And we may implement a visitor limit without enforcement, and see how that works. I’m guessing it won’t. Actually, out-of-state visitors might comply; I don’t think locals will. There’s a big question of local access, and we are hearing a ton about that. If we implement a visitor limit and we don’t have the ability to discriminate between local and visitor, there will be times when locals will not be able to go. They will be turned around, too. We haven’t figured that out yet. Although one thing we’re pretty sure we’ll do is there will be a peak period during the day when this limit will apply. Very early in the morning and late in the afternoon it won’t, which means those who want to go there early to fish, those who want to run down the trail, go surf at Hanakāpī‘ai, those who want to come and watch the sunset at 6:45 will be able to come in, as long as there’s parking place available.

But again, to get back to your question, we don’t have the perfect answer yet, but it’s going to take experimentation, and hopefully a solution can be reached.

Ms. Griffin: Do you have a date for the next public meeting?

Mr. Carpenter: We don’t. We do not yet.

Mr. Long: My final thought...and we don’t have the site plan up here...

Mr. Carpenter: Do you want one?

Mr. Long: No.

Mr. Carpenter: Okay.

Mr. Long: But my consideration is that there ought to be some kind of a turnaround in the site plan; not a hammerhead, so people get there then it's the easy (inaudible).

Mr. Carpenter: There is a turnaround. There's a turnaround before you even enter the parking lot.

Mr. Long: Okay, that's all. Thank you.

Mr. Carpenter: Okay.

Ms. Griffin: Thank you so much. As the conversation and the plan potentially evolves, I assume you'll come back and see us, and we may well generate a second memorandum to you.

Mr. Carpenter: We would be glad to. We want to keep you folks involved. A lot of people think this plan was a done deal. I mean, one of the things was just the semantics for the fact that it was called a "Final Draft", but I mean, it's still a draft. We're still very open to modifying the plan, and I think we've already made some concessions. The plan that you see, it'll change. Most likely the development will be lessened. I can almost certainly say that, but we are going to hear more from the public before we make the final decisions.

Ms. Griffin: Great. Thank you so much.

Mr. Carpenter: Okay, thank you.

NEW BUSINESS

Re: Class IV Zoning Permit Z-IV-2015-41, Use Permit U-2015-40 and Variance Permit V-2015-6 to allow installation and height variance for a 53 feet high stealth telecommunications structure and associated equipment on a parcel located in Līhu'e, situated at the Tip Top Motel/Café and Bakery site, further identified as 3173 Akahi Street, Tax Map Key 3-6-006:073, Līhu'e, Kaua'i.

Ms. Griffin: So moving into New Business. Item D.1., Class IV Zoning Permit and Use Permit and Variance Permit to allow installation and height variance for a 53-foot high stealth telecommunications structure and associated equipment on a parcel located in Līhu'e, situated at the Tip Top Motel/Café and Bakery site, further identified as 3173 Akahi Street.

Mr. Hull.

Mr. Hull: Okay. Thanks Pat. For the Commission, this is a unique review for you folks. The structure itself is a new structure where it's going onto the Tip Top Café and Motel is actually not a historic structure. It's close to it; it is forty-seven (47) years old. In a few years it will be part of our inventory, but as of currently, it is not. To give you guys some background on why it is here before you folks for your review, the application was before the Planning Commission back in August. What Verizon was proposing to do is put a telecommunication tower there with the

antennas to meet customer demands, essentially. To take a few steps even further back, over the past several years, there have been an increasingly large amount of applications concerning telecommunication facilities. The vast majority of them have come to Kaua'i and the ones that have received approval are in the Agricultural Zoning District. One of the biggest issues that generally arises concerning these sites, because they are often high...they average generally at 70 to 100 feet, some of them go up to 150/160 feet...is the ability to stealth them because the telecommunication tower can have this fairly industrial look, and it also breaches into the horizon as impacts on the view plain. Over the past decade, the telecommunication industry has gotten very used to the fact that on Kaua'i, stealthing of these sites is very important. I'd say roughly 90% of the sites have some type of stealthing capability. Because the majority of them are in the Agricultural Zoning District, they are actually turned into what make them look like pine trees, essentially. A handful has come into the urban area, and those that have generally stealth themselves by going on an existing building of the necessary height and making like a full wall around the antennas that does not interrupt the transmission of radio frequency (inaudible). As demand for these sites increase, in particular because of data and the iPhone craze now, the telecommunication companies are increasing the amount of sites that they need in the urban area. When Verizon came with this application in Tip Top, the original proposal that they came with was, and I believe Shan handed it out to you guys, it's one of the paper ones that we just handed out today.

Ms. Schneider: The monopole?

Mr. Hull: Well actually the monopole is not what they originally proposed. I actually asked them to provide that to see essentially what it would look like with a monopole at that site. Ten (10), fifteen (15) years ago I think most applications that's what the Applicant would have proposed. But the telecommunication industry, like I said, has gotten very used to the fact that on Kaua'i, you have to kind of stealth in order to get review by Planning Commission. So they automatically came in with a stealth proposal, which is the other handout you folks have, in which it kind of just is that 55-foot high tower essentially.

Ms. Schneider: Steeple?

Mr. Hull: Yes. When the Department saw that in the preliminary review with them, we had actually informed them that they can submit that application, but given the protrusion in the horizon, the impact of what the Department deemed as somewhat monolithic, the Department would probably be recommending denial on that application. So in looking at other strategies that have been utilized in the urban form on the mainland, per se, is the use of either a water tank or a clock tower is a fairly common strategy to stealth telecommunication facilities. In looking at that, we kind of had asked what a clock tower would look like, and they came back with a rendering, which you guys got in the original packet that was submitted to you guys last week. With that proposal, the Department did feel that did, in fact, blend with the urban form of the Līhu'e Town Core. It also served somewhat of a functional aesthetic in the sense that the clock would be functioning. We took it to the Planning Commission with a recommendation of approval. The Planning Commission, on August 25th, approved the site for telecommunication; however, they had concerns about the design. So ultimately, the Applicant has to return to them with a design

proposal that they feel is appropriate. Aesthetics is a very tricky subject to get into. If you have seven (7) Commissioners, you are probably going to have seven (7) different opinions on what's aesthetically appropriate. The Planning Commission actually referred this application to you folks to see what your design review would be of the site within a historical context, keep in mind, but that is why, essentially, you have been handed this application. It's not officially a historic site, but the Planning Commission is requesting that you review the site and do a design evaluation and possibly if you have a recommendation on one (1) of the options that the Applicant has given. So essentially you have three (3) options that the Applicant has given to you folks, which is...technically you guys have five (5) options, actually. You've got the three (3) that were previously transmitted to you; one (1) was...

Ms. Griffin: The clock tower, the silo, and the water tank.

Mr. Hull: The water tower. And then you also have these options, which were the original proposal, as well as just straight going telecommunication tower. The Department still holds by its recommendation to the Planning Commission that the clock tower is the most aesthetically appropriate for this area. However, it's here for your review and your comment, essentially.

Ms. Griffin: Thank you very much. Are there questions of Kaaina? Is the Applicant here?

Mr. Hull: She is.

Kathy O'Connor-Phelps: Good afternoon, Madam Chair and the rest of the Commission. I'm Kathy O'Connor-Phelps. I'm a consultant for Verizon Wireless who will be the carrier at this project. We are eager to get your input. We are willing to basically do any design to get it going and get it approved. I will say that the owner's preference is the clock tower. He's not crazy about the water tank and it's not good for co-location if you want to have another carrier utilize that site as well. I think, Mr. Hull, didn't you say that it was called the Times Square? He had looked in some documents from way back when and it called it the Times Square of Līhu'e, so I think the clock tower fits in just great with that. But if you have any questions, comments, kind of guide the Commission, otherwise you are going to end up with a pineapple. (Laughter in background)

Mr. Hull: She says that jokingly, but there was a request, essentially, to entertain looking at a possible pineapple design; a 50-foot pineapple.

Ms. O'Connor-Phelps: Yes. The landlord freaked.

Mr. Hull: To the Applicant's credit, she actually had their engineers take a look and see if that was even feasible.

Ms. O'Connor-Phelps: We did. It was basically going to look like the water tank with the crown on top of it, so it would not look right.

Ms. Griffin: Thank you. Are there questions of the Applicant? Larry?

Mr. Chaffin Jr.: We have two (2) packets of drawings. Which one are you talking about?

Ms. O'Connor-Phelps: The clock tower was the one that we revised based on Planning's comments, so that they would support the project; that's what went before Planning Commission in August. Planning Commission said hey, can you try a water tank, can you try maybe like a farm silo, something like that? We said absolutely, we can adjust those, so you should have the silo, I think we have a smokestack, which is basically the silo without a top, and then the water tank. If you need copies, I have extra.

Ms. Wichman: There's just the one that's just bare, with just the antennas.

Ms. O'Connor-Phelps: Is that the...? Yes. We are just showing a comparison. That's what a monopole, like Mr. Hull said, that's you know a fifteen-year ago design, but that's what they used to look like so they've come a long way. We are spending a lot of money to stealth the tower.

Ms. Schneider: Is this the final version of the tower?

Ms. O'Connor-Phelps: The clock tower?

Ms. Schneider: Yes.

Ms. O'Connor-Phelps: Yes. I mean, unless you guys have further comments and want something added to it.

Ms. Schneider: I think a little more overhang on the roof might make it a little more aesthetic.

Ms. O'Connor-Phelps: A little more overhang?

Ms. Schneider: Yes.

Ms. O'Connor-Phelps: Okay.

Ms. Griffin: What are the dimensions? We did get some plans, but they were reduced down to 8 ½ by 11, which is always a challenge.

Ms. O'Connor-Phelps: Oh, okay. If you want a bigger one, I have one (1). I can pass it around, but I can give you dimensions.

Ms. Griffin: Thank you.

Ms. O'Connor-Phelps: It is 12 by 12. So essentially it'll be a 12 by 12. It's not going to be all the way down to the ground. It'll have the four (4) posts, so he can still put his trash...he has a trash thing underneath there, so he can still utilize that space. And then the antennas at the top, behind, basically what it is, is a fiberglass that can shoot the signal through.

Ms. Griffin: Other questions of the Applicant?

Mr. Long: I have a comment. Since I have an iPhone, I'm in favor of more (inaudible) and stealthing them. (Laughter in background) My comments, aesthetically, are I support Anne's comment on more of an overhang.

Ms. O'Connor-Phelps: Okay.

Mr. Long: I wonder if you even want to do a horizontal soffit with a split pitch.

Ms. O'Connor-Phelps: Horizontal soffit.

Mr. Long: Horizontal soffit with a split pitch.

Ms. O'Connor-Phelps: Okay.

Mr. Long: Your guts of your equipment is all at the top.

Ms. O'Connor-Phelps: Right.

Mr. Long: So you really want a flattest roof as possible. So instead of coming down like this, one could have a horizontal soffit and/or split pitch if possible within that same volume.

Ms. O'Connor-Phelps: Okay.

Mr. Long: And the second thing is, in the interest of reducing the mass, since the guts of the equipment are at the top, and there probably needs to be some circulation ladder going up the pole.

Ms. O'Connor-Phelps: Yes, between antennas, has to maintain a certain space.

Mr. Long: I believe that, design-wise, one could reduce the mass by keeping the top 12 by 12, which you need to house the equipment, but then you could reduce the base supporting that to something like 8 by 8, which has precedence in other watch towers historically. They'll come up and they'll have a little build out up at the top. So those are my comments.

Ms. O'Connor-Phelps: The only concern I have with the 8 by 8, and certainly we would do it, is that if AT&T came in later on, they may be before you again to go back out because they have to fit their antennas in, and I'm not sure what their configuration would be.

Mr. Hull: To give some background for that, so what you see with these sites, and particularly because...not just because they're costly, but because they can be unsightly, the State of Hawai'i has an official policy, as well as the County, when they are able to do so that they allow for co-location of their competitors on the same pole. So Verizon puts a pole up, they are required to make it available for their competitors to put antennas at a lower level, as opposed to every single competitor having their own sites, and therefore, reducing the amount of poles that are on Kaua'i

or throughout the State. The only issue...I don't think that...that could be part of the aesthetic concern and that's essentially what we are looking at here today. The part of the concern that the Commission may have with it is, you are no longer able to co-locate competitors on that pole. And I say that in a very neutral manner in the sense that if that's what it takes to get this 50-foot tower aesthetically sited, then that's what it takes.

Mr. Long: If that doesn't work because of leasing considerations, one can reduce the mass by additional horizontal bands or a difference in material where you had something at the base and then something above; board and batten, and then stucco. I'm not asking to do any great architecture, just...you can break up the mass with different elements.

Ms. O'Connor-Phelps: Okay.

Mr. Hull: I think one (1) way that's possible, if say this body decides to move on the clock tower and recommend it, that in going back to the design review with the Planning Commission, perhaps the Applicant can have different variations, like you are saying Commissioner, one in which you have additional horizontal lines or ones in which you actually are shrinking the mass to 8 feet where appropriate.

Ms. Griffin: Are there other questions of the Applicant? I know that there are several different types of receivers. The one presented here, is that the only one that's available for this particular placement?

Ms. O'Connor-Phelps: You mean, did we go to other owners?

Ms. Griffin: I'm sorry?

Ms. O'Connor-Phelps: Did we go to other property owners? Is that what you mean?

Ms. Griffin: No. I'm talking about what it looks like on top. There used to be different types of transmitters, different sizes, and different looks.

Ms. O'Connor-Phelps: Yeah, I mean, what's inside is typical of what it is today. They are 8-foot antennas; they are rather large.

Ms. Griffin: Okay.

Ms. O'Connor-Phelps: And then what we call "remote radio units" gives it a boost in signal, and then surge suppressors, just in case there is a power surge.

Ms. Griffin: Any other comments? Is there anyone in the public who would like to testify?

Yes, come up Palmer.

Palmer Hafdahl: If I may, I'm Palmer Hafdahl. I'm just sitting here as an interested community member at the moment. The Līhu'e Town Core Plan has in it allowances for pedestrian access from the neighborhoods on Elua Street and Akahi Street to the highway. It included options, one (1) central on Elua Street and then heads up to two (2) connectors from Akahi to the highway. In visiting the site, it was clear that this alignment through the center of Tip Top property happens to line up with the Elua pedestrian pathway suggested. Because of another interest I have, I didn't want to see the possibility of a pedestrian connection, at that point, being missed. Maybe not this Board in terms of how it looks, but in terms of placement, maybe the suggestion that we allow that it be placed so that at a term when there is a willing landowner on both sides that a connection can be accomplished there; just looking forward from the planning standpoint. I appreciate hearing that it actually is elevated above grade and it potentially allows greater access beneath them, but it's just something that I'd like to encourage you to look at when it comes to the aesthetics. Maybe not bringing it down to the ground is a good point, and the possibility of providing that connection. It turns out that it may be a real principal place to make that much needed connection. Thank you.

Ms. Griffin: Thank you. Our Commission is always cautioned to be guided by the laws and standards of historic preservation, and not our own personal taste. So I wanted to say that even though Tip Top is not quite fifty (50) years old, Akahi and Elua Street are certainly eligible to be historic districts. Our Town Core plan, which was adopted as an ordinance in 2010, I believe, talks real specifically about mass and scale. All of these structures, including the clock tower, when you talk about 12 by 12, that's probably about the...this much table, and that's really big. I have some pictures. This one you probably can't see, but this is a historic building. This is the first part of the Civic Center that became historic almost a year ago. This is a historic building, the Kaua'i Museum, and that utility pole has got to be 50 feet tall. Here's another, the light post in front. The round building won't become historic for another two (2) years. This is the post that's directly across the street from Tip Top; it's 50 feet. So I'm not convinced that the, let's be honest here's a cell tower, isn't the best approach. That it's just what it is because I think when people go down Akahi Street, they don't see these poles. They see the houses, they see the offices, and the same is true if any of you who parked up on this side with the real tall lights. The Kaua'i Museum sees this because they've always wondered why the lights go back across in front of their property and then cross the street again, but again, we tend to see the museum; we don't see the utility poles. So for me, looking at this district eligible street that seems like the least intrusive; the actual cell tower itself, rather than these very large things. Also, it is a variance from the 30-foot height limit that is listed on Akahi and Elua Street. I did not attend that Planning Commission meeting and I haven't seen the transcript of the discussion, but it does look to me like that's the least aggressive kind of approach. I don't know. Any other comments?

Mr. Long: Yes. I'm picking up on what Pat is saying. There's another option that isn't presented here, which is the cell tower with some fake metal branches; like up on Princeville, Hoku Heiau, which is what you're talking about. I mean, you're just talking about the utilitarian bare pole, but if it's really...you don't see the telephone poles because you drive kind of like right by them and you don't look out your window up 50 feet. This is a little bit more in the distance, so you are seeing more of the silhouette, which is rectangular. Maybe there is another option, which is not to hide it in a non-existing bell tower. In the city, they hide them in existing church steeples and that kind of thing, which it already exists; it's hollow, that makes sense. Here you are building a really

large object to disguise something that's really small. So in picking up on what Pat's saying, maybe if we just disguise the silhouette of it, in the distance, make it kind of like a tree, or not like a big watch tower.

Ms. Schneider: Or paint it blue like the sky. (Laughter in background)

Mr. Long: That's a thought. Personally, aesthetically I'd have to take a look at both of them, but I think they are both really valid; both are reasonable solutions.

Mr. Hull: If I could interject, too. These are discussions the Department has had with applicants for at least the past fifteen (15) years now, as the person who has been in charge of telecoms for the past several years. First and foremost, concerning the massing, I can understand the Chair's concern with the fact that the clock tower...all of the other options have far more massing than the pole as presented. What I think you guys also need to take in to consideration is the pole as presented is more than likely not what the pole will morph into once co-location happens. The reason the massing is that large is because the antenna massing is that large, so ultimately what you could have here, because of co-location is you can see the top has all of those panel antennas which are roughly going to be about 12 feet in diameter. They are going to have their walls right around those antennas. There are going to be more coming down, and it's just going to have a feel of a very large, massive antenna pole after co-location happens, so that's one (1) of our concerns. And even above and beyond, I mean, the fight that we had with telecommunication carriers in the beginning to get them to realize that they should be stealthing these sites was the sense, and we would generally make the position that there's utility poles galore all around. They are exempted from our review, but why should the utility poles be allowed to not have to stealth, and they are. Our response is, what always has been and will remain to be, those utility poles do impact the view plain. They have become, somewhat, background noise to the passenger in the car or the pedestrian, but they kind of just fold into the landscape because we've just accepted them. But when you do actually look at them individually, they do impact the view plain. And because there's one (1) say unaesthetic structure does not legitimize you having the ability to now also put something that's going to have an impact on the view plain. So that's generally where we stood with these sites.

Concerning the monopine, because that has been, I'd say, the number one strategy for telecommunication carriers on the island, and that's because the bulk of the sites are in the Agricultural District and the monopine blends in with the agricultural area. The trees help mask it and it becomes camouflage with the trees in and around it. A tree pole in an urban environment would stand out a bit like a sore thumb; they really do. I mean, do they look like trees when you're zipping by on the highway, yes, but when you actually stop and actually look at these things, they're not quite the magnificent piece of artwork that one may think is going into these because they do stand out. The only reason they don't stand out is because they've got generally fifty (50) or sixty (60) trees around them. So that's just what I'll put in as the Department's two cents on the review.

Ms. Griffin: Thank you. Okay, so we have some choices. We can choose not to comment on the aesthetics, we can make a choice with one (1) of the presented options, or we can potentially ask

for another refined option, but we are responding to the Planning Commission's inability to decide on the options that they were given.

Ms. Schneider: Kaaina, either way they're coming for a height variance?

Mr. Hull: Yes, they came in for the height variance. Essentially, the Planning Commission approved the variance and approved the site. However, they wanted further input on the actual design of the structure.

Ms. Schneider: So could we ask them to come back with some refinement of the clock version?

Mr. Hull: Given the Applicant's timeline, it'll ultimately be if you can come back, Kathy, is essentially what I think they're asking.

Ms. O'Connor-Phelps: When do you...you meet again in...what are we in...

Ms. Griffin: First Thursday of each month.

Ms. O'Connor-Phelps: So of November? I mean, if that's what it's going to take to get you guys to let us move forward, then certainly. I mean, would we like to go to Planning Commission and be done and ready to submit it to Building Permits this year? Yes, we would obviously like that option better, but...

Ms. Griffin: Well if I can have a motion then we can discuss and then come to a vote.

Ms. Schneider: I make a motion that we ask the Applicant to come back with some refinements to the clock tower version.

Ms. Griffin: Is there a second? Hearing no second, that motion dies. May I have another motion?

Mr. Chaffin Jr.: I have a question. You mentioned trees surrounding this. Are these trees that you have planted or do they just happen to be there?

Ms. O'Connor-Phelps: We've done both. We've done it where there's been trees that have been existing, and then especially on the mainland in Southern California, a lot of palm trees. We do a lot of monopalms, and we are told to plant trees around it. This property is way too small. We would never be able to fit any landscaping. We're pretty tight as it is in there, and there's no...we actually thought about a monopine knowing that Kaua'i liked monopines, and like Mr. Hull said, I think it'll stick out too much. We'd love to do that; it's cheaper. (Laughter in background) My client would be very happy if it was a monopole even, but like Mr. Hull said, the photo sim is not showing what could potentially be co-locators on that pole.

Ms. Griffin: If we cannot get a motion to go forward, then essentially we are not going to make a comment. We will defer to whatever the Planning Commission decides. Is that the choice of the Commissioners?

Mr. Long: I'll make a motion. I move that we support the owner's inclination to support the stealthing of the cell tower in a clock tower construction, and that the mitigating elements on the clock tower proposal as submitted would be to revise the roof profile, perhaps a split-pitch and/or additional overhang, as well as reducing the mass of the tower with materials and other aesthetic elements, and that the Applicant come back before us and present those revisions.

Ms. Griffin: Is there a second?

Ms. Schneider: I'll second the motion.

Ms. Griffin: Alright. It's been moved and seconded that we support the owner by accepting the stealthing of the cell tower in the clock tower, mitigating the design to revise the roof profile, perhaps with a double-pitch and longer overhang, and possibly reducing the mass on the post section itself. Thank you.

Is there further discussion? Larry.

Mr. Chaffin Jr.: I would like to propose that we not tell them exactly what to do, but come back to us with various proposals, so that they're not just limited to this one (1) discussion.

Ms. Griffin: Great, and it did say "possibly" with those suggestions. Is there other discussion?

Ms. Wichman: Yes. I'd like to mention that I think the point that Paul brought up about the walkway, that's part of the Līhu'e Town Core Plan, I think that needs to be addressed so that it's not excluded since that already is part of the 2010 plan, right?

Ms. Griffin: Would you like to amend the motion?

Ms. Wichman: I'd like to amend that. That the pedestrian connection should be included within this plan.

Ms. Griffin: So Victoria is moving to amend the primary motion by incorporating the Town Core Plan's pedestrian connection in the concept.

Mr. Hull: I'll just interject real briefly on that. I think you're within the purview of the Commission to say it should be considered. However, also knowing the fact that (1) the Planning Commission has already given approval to the site for a telecommunication facility and the actual requirements say of an access way would be considered an exaction, which Jodi would have to weigh in on, as far as whether you can do that after approval has been given, and then (2) that actual corridor requires, not only the Tip Top landowner giving approval to say an easement or handing the property over to the County, but as well as the abutting property owner as well, who is not part of this application. I'm not saying that the sentiment shouldn't be in the motion, but just to caution, as far as to keep it in the consideration realm.

Ms. Wichman: Okay, so maybe I misunderstood. Was the corridor or the pedestrian connection part of the plan?

Mr. Hull: It is part of the plan, but it also requires, essentially, either the willing landowners convey that land to the County, or establish an easement, or that the County go in there and condemn the lands for that corridor. It's a recommended connection to have, but in order for that connection to be established, it takes one (1) of those three (3) scenarios.

Ms. Wichman: Okay, I understand. So it hasn't been approved?

Mr. Hull: Yes.

Ms. Griffin: Would you like to withdraw your motion? Or...

Ms. Wichman: I was under the assumption that the pedestrian corridor was already part of it, so I'd still like to see that happen. Consideration?

Ms. Griffin: Would you restate the motion, please?

Ms. Wichman: My part of the motion? I would like to see consideration of a pedestrian connection that goes through the Tip Top properties as planned in the Līhu'e Town Core Plan of 2010.

Ms. Griffin: Is there a second?

Ms. Schneider: I second the motion.

Ms. Griffin: It's seconded by Anne Schneider. So the amendment to the primary motion is that consideration be given to future possibility of the pedestrian path crossing the property as shown in the Līhu'e Town Core Urban Design Plan adopted in 2010.

Ms. Wichman: Yes, thank you.

Ms. Griffin: Further discussion on the amendment? All in favor? (Unanimous voice vote) Opposed? Hearing none. Motion carries 6:0.

Going back to the primary motion, is there further discussion? All in favor? (Unanimous voice vote) Opposed? Hearing none, that motion carries 6:0 as well.

Ms. O'Connor-Phelps: Thank you.

Ms. Griffin: Thank you so much, Ms. O'Connor-Phelps.

**Re: Garden Island Service Station (Aloha Petroleum Ltd.)
TMK: 3-6-06:89, Līhu'e, Kaua'i**

Zoning Permit Z-98-16 for the Proposed Demolition of the Existing Shell Service Station.

Ms. Griffin: Under New Business, Item D.2., Garden Island Service Station (Aloha Petroleum Ltd.), Zoning Permit for the proposed demolition of the existing Shell Service Station.

Staff?

Mr. Hull: Good afternoon, again, Commissioners. Concerning the demolition of the subject service station, the Department has received the demolition application for the Shell Service Station. The site is not on the National or State Historic Registry; however, it is a historic site, as well as on the County of Kaua'i inventory. The profile that we gave to you folks is actually inaccurate, and I'll hand out the accurate profile. I believe the profile we handed to you stated 1942, when in fact it's actually 1930, when the structure was constructed. It has proven through our research to be one (1) of the prime architectural features here on Kaua'i concerning the roof in particular, as well as the overall site, but the roof, in particular, has proven to have significant historical and architectural significance. Actually, it was under consideration, I know, by this body, as far as recommending movement on nominating it to the State Historic Register. Ultimately, this is an application for you folks to begin discussions on. I think at this point, more than likely the Department, at the end of those discussions, will be recommending a deferral. And that is because it is a fairly complex process, and this is a very important building in the Department's eyes. With that, I'll turn it over to Pat because I know she has definite insight to the particular structure.

Ms. Griffin: Thank you. Are there questions of Kaaina?

Ms. Schneider: Kaaina, is there any way we can induce them to keep this building? Since it is iconic.

Mr. Hull: Yes. There are two (2) options, essentially, when you're looking at regulations, right? I mean, you're either going to use the stick or the carrot. The carrot being tax incentives and encouragement from this Commission or from other bodies to encourage the landowner to realize that they essentially have a gem within a rough right here that can be utilized for an array of different things. If that doesn't work, to use the regulatory powers essentially is as to how far you can actually deny a demolition, would lead to an interesting legal and philosophical debate, let's say, but it's not that the Department is going to not necessarily go that far. The Department itself feels that it is a very significant structure and is currently in the process...I have a draft letter that we are sending to the landowner; basically to highlight the site and say what a gem this place really is. Do you realize you have this site? Its significance in Hawai'i's history, and perhaps you may have other plans for it.

Ms. Schneider: Because we were thinking of having this walking tour on an app for Lihu'e, and that would certainly be one (1) of the highlights.

Mr. Hull: Definitely.

Ms. Schneider: I mean, it's like a Route 66 element that is here on Kaua'i.

Ms. Griffin: Is the Applicant here?

Mr. Hull: There's an interesting situation going on with that. Palmer Hafdahl has been working with the Applicant, but actually isn't authorized currently. He doesn't have an actual legal authorization to give official representation to this body, or any other body, on behalf of the Applicant. I'm not sure if he might be willing to testify as a member of the public that has insight to this application; he may or may not. But officially, there is no applicant present at the meeting today.

Ms. Griffin: Okay. Well, the next item is whether or not there is anyone in the public who would like to come up and testify.

Mr. Hafdahl: Aloha. I'm Palmer Hafdahl and I just want to say I have worked with this applicant. I submitted the application for them. I'm kind of their representative here on the island, and I met with them this week and have had ongoing conversations with them. At this point, my last meeting with them is they are happy enough to defer this a bit until they can get their ducks in a row as well, but they'd certainly like to hear the impressions and concerns of the Kaua'i Historic Preservation Review Committee and I'll take those notes back to them.

Ms. Griffin: Thank you.

Mr. Halfdahl: Oh, I did submit the historic review for them as well, so I understand the history of it. On a personal note, my first trade was plastering and I always admired this building's roof as it is done with what you call a scratch coat and plaster. It's the first (inaudible) you take at a three-coat plaster job. It's a unique application. Whether it's historically significant for that, I don't know. It's significant to one plasterer's son, but that's all. (Laughter in background)

Ms. Griffin: Thank you, Palmer. You all had in your packets, and I'm sure you've read the information. There was a wealth of information about the history of the building, the exceedingly important architect, and a little bit in absence, but the ownership. Does anyone have comments?

Mr. Long: I have a question. I noted that there's a demolition permit applied for, so has there been any development plans submitted?

Mr. Hull: No. It just looks like, currently, it's just a straight demolition of the building. Our understanding is that they are essentially having some maintenance issues with the building and there isn't really any plan to necessarily replace the building, per se.

Ms. Griffin: Excuse me, but the letter from Palms Hawai'i does say that the demolished structure will be replaced by an iconic service station canopy and pumps assembly.

Mr. Hull: Yes, but as far as the canopy that is referenced in the letter, as well as the pumps, they still plan to maintain, as we understand it, still maintain the site as a fuel station; however, an actual

enclosed structure, as we understand it, has not been proposed, nor have we even seen the plans or received official plans and application for the new fueling station.

Ms. Schneider: Is there a deadline for you on the demolition permit? Or can you hold that until...?

Mr. Hull: Demolition permits are done via the Building Permit route, which do not have timeline requirements.

Ms. Griffin: Other questions/comments?

Mr. Chaffin Jr.: I'm very concerned that we don't get into trying to design a project that we are not qualified for. We don't have all of the information.

Ms. Griffin: Thank you. Other comments or questions?

Well Kaaina's right. I do have some things to say about this, and it relates to our kuleana; the history of the place and our place. The State Historic Preservation Division. Have we heard from them?

Mr. Hull: No, they haven't commented at this point. It has been referred to them, but they have not commented yet.

Ms. Griffin: Okay. As part of the Architectural Division of SHPD, they say, in Hawai'i, historic places play an important role of tangibly linking the diverse modern population with Hawai'i's unique history. They simultaneously serve as places of memory for those who have always lived here, while educating newcomers about the island's collective history. Preservation is important; not only is it a means to remember our past, but to inspire our future.

In what we do, we talk about places being historically significant. (1) If the building is historically or architecturally significant in terms of its period, style, method of building, construction, or use of indigenous materials. I'd like to suggest that this building absolutely fits that category. In the late 20's and early 30's, as the automobile age, the automobile era, was really coming into its own. Places around the Country really exhibited their own special locations by these service stations. This particular station, the owner, who was the big political boss here at the time, Senator Charles Rice, Charles Atwood Rice, Charlie Rice, and he owned that and they were looking at what we now call plantation-style, double-pitch roof, the old Dickey roof that we know. The architect, Guy Rothwell, who was one (1) of the designers of Honolulu City Hall, Honolulu Hale, and did a lot of other buildings, thousands of them in Hawai'i in his time, he said no, our heritage is Hawaiian. This roof, looking like a thatched roof, is a way to represent that, and using moss rock. At the time it was known as Kōloa moss rock. They actually dyed the roof a yellow to look like straw, and the island for the pumps, red pumps, they painted green. Some of you may remember Al Duvall, and they hired him to actually do the landscaping with native palm trees, native vines, and things. It's an architecturally significant building; there is not another one like it in the universe. (2) The building is a significant reminder of the cultural or architectural history of the City, State, or Nation. Yes. (3) The building is associated with the significant local state or national event, or

the building is associated with one (1) or more significant historic persons or events, or with the broad architectural, cultural, political, economic, or social history of the City, State, or Nation. And definitely, this service station talks about the significance that was starting to happen with transportation, which was the first thing. The automobile era is what got us out of our separate kingdoms at the different plantations. This building represented that in our own local style. (4) The building is one (1) of the few remaining examples of its period, style, or method of construction. Yep. (5) The building is identified with the person who significantly contributed to development of the City, State, or Nation. It was actually a territory then, but Senator Charles Rice was absolutely significant in taking Kaua'i and Hawai'i for all the time he was in the Senate, and his work on the Statehood Commission twice, and what he was doing, so yes. (6) The building is identified as the work of a master builder, designer, or architect whose individual work has influenced the development of the City, State, or Nation. I told you a little about Guy Rothwell, and Palmer Hafdahl has nicely included information, or SHPD, the State Historic Preservation Division. (7) The building value is recognized for the quality of its architecture and it retains sufficient elements showing its architectural significance. Yes. When we go past, there's that unsightly, yellow, 18-inch high belt around the roof that really mitigates the view of it, but it's still there. The fact that there's been malign neglect of upkeep and maintenance does not take away from that fact. (8) The building character is in a geographically definable area possessing a significant concentration or continuity buildings united in past events or aesthetically by planner physical development. That block, when you start right across here where you have the old Garden Island Motors that we call it western, but commercial vernacular in Hawai'i that faults front is there you go up with the Garden Island Newspaper that's now Kaua'i Pasta, that's from the 20's, and then the service station. Next to it, the year after, was built that Spanish mission-style exuberant Lihu'e Theater, which was, at the time, really special; 800 seats they put in in 1930. The place is really special and it is special that the choice was to represent our Hawaiian culture; not simply the dominant plantation era. The National Parks, there's a preservation brief on the preservation and reuse of historic gas stations. It says that historic features that contribute to the character of a gas station should be preserved. A gas station structural form is of central importance. The outward appearance of a historic gas station; its size, shape, massing, and scale often reflected a particular locale. It gives the historic property its identity and contributes today to a public understanding of when and why it was constructed. The roof's configuration pitch and covering are also important, and it goes on. I mention all of that because we have a very historic building in a historic neighborhood in Lihu'e, the County seat and heart of Kaua'i as we call it. We also have the Lihu'e Town Core Urban Design Plan that stresses that the architectural and building design guidelines serve to respect and reinforce the historic context of this neighborhood, and they are talking about the Kūhiō Highway neighborhood. They are intended to protect the various architectural styles and character of existing buildings; that new buildings should be designed to relate to the larger communities, streetscape, and neighborhood by striving to be contextually integrated within the community. Under "Roofs," in this section, it says, new construction or major renovation shall utilize roof shapes, materials, and colors which are compatible with the existing traditional and historic architectural character of the area. I would like to know, from you, if this building is destroyed, is it within the possible use to...because the Town Core Plan says that a Use Permit has to be granted for gas stations. So if this building is destroyed, will any new place be non-conforming with...if it's purposely demolished, will it be non-conforming with the plan and our ordinance?

Mr. Hull: Under Chapter 8, which is the previous zoning ordinance for this area, if it's voluntarily demolished, then I believe no. They would, therefore, have to obtain a Use Permit. But the Town Core Plan overrides Chapter 8 on this, so there is a possibility that actually a Use Permit would be required for any further development, or I should say, any further use of the site after it's been removed from use during that time of demolition. There is a possibility that could go through the Use Permit process; would be required I should say, but we would have to look into that further and particularly, we would have to work with Jodi to get a legal analysis of the non-conforming use being able to continue without a Use Permit. Or the flip side of that, the non-conforming use being required to therefore have to get a Use Permit after demolition.

Ms. Schneider: It wouldn't be grandfathered in?

Mr. Hull: And that's what I'm saying. We have to check on that.

Ms. Schneider: Yes, because if they rebuild it within a year, usually it would be grandfathered.

Ms. Griffin: But they're not talking about rebuilding. They're talking about doing something else.

Mr. Hull: And that one (1) provision year you're speaking to, Commissioner Schneider, is concerning acts of God, essentially. If the structure is destroyed by a storm, they have one (1) year to construct it, but if they voluntarily raze the building, under that particular Code Section, they cannot build it. But because the Town Core Plan is much more of a recent adoption, we would have to clarify that, really.

Ms. Griffin: In that case, I suggest that we do defer until next month when we will have more information; both about the possibilities for this site. Hopefully some possibilities for maintaining this tremendously historic structure and possibly the Applicant here as well. If you agree, I would entertain a motion to that effect.

Ms. Schneider: I make a motion that we defer until we hear something back from the Applicant and make some pitch to try to get them to keep the building.

Ms. Wichman: I second.

Ms. Griffin: It's been moved and seconded that we defer until we hear something back from the Applicant and can discuss with them the possibilities of keeping the building. Discussion?

Mr. Chaffin Jr.: Yes. I'm concerned that the owner...that we're putting criteria on the owner that may not be financially in his or her favor.

Ms. Griffin: Other discussion?

Ms. Schneider: Is that in our kuleana?

Ms. Griffin: No. We are here for historic preservation, not cost, but it's always important.

Mr. Chaffin Jr.: I think you have to consider that.

Ms. Griffin: Thank you. Other discussion? Hearing none.

Mr. Hull: If I could clarify for Commissioner Chaffin, too. Ultimately what goes on with review at the Historic Preservation Commission is the KHPRC serves in an advisory capacity, and would serve in an advisory capacity to either the Planning Director if we're reviewing a Class I or over-the-counter permit, or to the Planning Commission if we're reviewing a Use Permit or Class IV Zoning Permit. That analysis does get taken into place particularly with some reviews at the Planning Commission level where they do take into discretion, as long as it's not a variance that you're talking about, but as far as exactions or requirements made upon applicants and the potential over-exacting, if you will, on a particular application. So that type of review is done, but I'll also defer to what Chair Griffin pointed out is that the purview of this Commission is really to look at the historic qualities and the historical resources and whether or not things like preservation or adaptation can be utilized. So I wouldn't worry too much about the financial side of it being that there will be another review of it, be it at the Planning Commission level or be it at the Planning Director's level, that you don't necessary have to worry about at this point. Just to, somewhat, unlay that concern.

Ms. Griffin: Thank you for that explanation. Is there other discussion? Hearing none. All in favor? (Unanimous voice vote) Opposed? (None) The motion carries 6:0. Thank you, and we'll look forward to your report next month.

Re: Letter (8/25/15) from J. Michael Will, P.E., Program Engineering Manager, US Department of Transportation, Federal Highway Administration requesting to be placed on the Kaua'i Historic Preservation Review Commission agenda to discuss and review the Wainiha Bridges No. 1, 2, 3; Bridge 7 E; Kapa'a Stream Bridge; and Hanapēpē River Bridge.

Ms. Griffin: Okay. Item D.3., New Business, letter from Michael Will, P.E., Program Engineering Manager, US Department of Transportation, to discuss and review Wainiha Bridges No. 1, 2, and 3; Bridge 7 E; Kapa'a Stream Bridge; and Hanapēpē River Bridge.

Staff, is there any...?

Mr. Hull: We don't have a report on these particular ones. I think they are not actually coming for any zoning permits. This is disclosure before you for their 6E Review Process.

Ms. Griffin: Thank you. Applicants?

Nicole Winterton: Hi. I'm Nicole Winterton. I'm the Environmental Manager from Federal Highway Administration, Central Federal Lands. We planned to come before you last month, so we have had some updated project planning, so we did update some presentations for you. We figured you would appreciate the latest and greatest information, so we'll pass that out.

Ms. Griffin: Terrific.

Ms. Winterton: I'll just go ahead and get started, if that's okay, while he's handing that out.

Ms. Griffin: Please.

Ms. Winterton: Like I said, I'm with the Federal Highway Administration, Central Federal Lands. We are a division of Federal Highways that does planning, environmental compliance, design, engineering, and construction management oversight of transportation projects. We typically work in the Federal lands, within or access to Federal lands, such as National Parks and National Fish and Wildlife Service Refuges. We've developed a partnership with the Hawai'i Department of Transportation. Over several years, we've partnered up on some infrastructure jobs here in Hawai'i, and have worked closely and developed a good relationship with HDOT; I'll abbreviate. We've developed into a five-year Memorandum of Agreement to deliver a program of projects with HDOT to help them deliver some critical infrastructure jobs, and also enter in a Peer-to-Peer Partnership with both agencies learning from one another the delivery, programming of jobs, and construction management of jobs. We have several projects on several different islands, but what we are here to talk about are the projects that we have here on this island.

So the project that I thought that I'd start with, if it's okay with you all, is the Wainiha Bridges Project. As part of this partnership, we have four (4) projects on this island. We've also partnered with an A&E, Architectural and Engineering firm, to support us on delivery on a lot of the projects. The Wainiha Bridges Project is a little bit unique, so I'll primarily talk about that project. CH2M Hill is helping support the engineering and compliance for the other bridges on the island, so I'll hand it over to Kathleen Chu, with CH2M Hill, after we talk about the Wainiha Bridges. We also have representatives from Mason Architects and Cultural Surveys Hawai'i, who are providing support from the historic architecture side of things and the archaeological side of things, so if questions come up, they are here to help (inaudible) their purview.

Ms. Griffin: Before you start, just so I'll know whether we can go through or not, is there anybody that's in the public that's going to want to testify on any of these bridges?

Okay, then we'll just go through one to the other. Thank you.

Ms. Winterton: Okay, great. So I think going through the Wainiha Bridges Project, if you want to just kind of run through the slides with me, I think I pretty much covered the role of FHWA in this project. I really wanted to talk about that because I think you probably seen or heard from projects that are federally funded and worked with the division where in those roles, traditionally, HDOT is more the delivery agent for that project and FHWA acts as a Federal agency for the 106. In this project, we are doing the actual design engineering, so we are the lead agency for Federal. These are federally funded jobs, so they are subject to Federal compliance, so Section 106. They are also State projects on the State route, so they're also, you know, with compliance for the State laws as well.

A little bit of project background for the Wainiha Bridges. They have a pretty long background; these are the bridges. We've actually been on this part of the island talking about it here tonight, so Wainiha Bridges 1, 2, and 3, which are the last one-lane bridges on your way to Hā'ena on

Kūhiō Highway, the north shore section. The original Bridges 1 and 3 were constructed in 1904. The stream channel kind of carved a new path, and in 1931 we had a new bridge added. Tidal storms damaged the bridges in '46 and '47, so then we had a new period of significance with new bridges added in this timeframe between the 50's. Bridges 1 and 2 were replaced, and then we had...oh, I'm sorry, we had all of the bridges replaced, and then in '66 we had the east span of Bridge 3 replaced. So just a little bit of background. We have, kind of, two (2) periods of significance with these bridges that were in this location. In 2004, the Bridge 2...so they go in order, Bridge 1 is the eastern most bridge, and then 2 and 3 are two (2) bridges that operate essentially as one (1) single-lane bridge, so just a little bit of background on that. These bridges suffered damage from storms in 2004, and Bridge 2 was replaced. Under inspection in 2007, they were in a pretty bad state of disrepair, so there was an emergency proclamation for the Governor to replace the bridges. HABS (Historic American Buildings Survey)/HAER (Historic American Engineering Record) was done at that time, and new prefabricated modular steel structures that we refer to as Acrow bridges are in there now. That was placed as a temporary measure to secure funding for the permanent replacement, and also to get through the compliance and engineering of that.

If we go to the next slide, just a little bit of reference, this is Bridge 3. In the lower right-hand corner, that's the existing bridge that's there now; that's the Acrow Bridge that we refer to. In the upper left-hand corner, that's the 1950's structure, the historic bridge that was present before that removal in the 2000's.

Central Federal Lands came into this project and there was a lot of background on it. What we really tried to do is seek to understand. There's very strong interest in this project. We have a significant road; the north shore section of Kūhiō Highway is listed on the National Register, and also on the State Register. Also, we knew coming into this that it was important to come up with a context sensitive design, so Central Federal Lands really spent time meeting with the community on the north shore, as well as the Hanalei Roads Committee to really understand what was important, as far as the aesthetic, the natural, the cultural features, so that we could try and develop the goals for the project. Through that process, and I think in the old presentation from last month, I really kind of went through the issues that we've heard from the public. If you're interested, I'd be happy to expand. But we heard a lot of different feedback on how the bridges are operating, and developed a purpose and need for the project. The primary purpose is essentially to provide permanent replacement bridges for the temporary Acrow bridges that are out there. We also identified opportunities to improve operations, manage the maintenance requirements, and also to balance project improvements with the character of the historic roadway corridor. There are issues with sight distance and visibility crossing the bridges. We heard that the rail spacing of the steel bridges is difficult, and I've experienced it, too. It's difficult to see through and across. There are maintenance concerns with vegetation overgrowth affecting site distance. When they had to put those temporary bridges in, they also had to raise the grade of the road a little bit. So all different factors that we identified. We identified a lot of opportunities. One (1) other important thing that we also identified was the significance of the roadway, so it became a balancing act of evaluating what our project transportation goals were, with also the context of the roadway, but also just the aesthetic and natural values that are really important to the community. In kind of reviewing the historic significance and some of those project goals and improvements, we really tried to step

forward a process, and this is where we really would like the Commission's feedback, and this is what we presented. We had our most recent public meeting on September 15th. We've stepped through an alternative evaluation process, and we're preparing an environmental assessment for the project, and identified alternatives based on what we heard. We don't think that we are going to carry forward for analysis and we'd like the Commission's feedback on that. And also on the flip side, alternatives that we'd like to really move forward with analysis, so preliminary design feedback as we move forward with that process.

Moving forward, we identified a lot of opportunities for developing of the alternatives based really on the feedback that we heard and some of the engineering evaluation, which was the sight distance, traffic calming considerations. We heard interest in narrow bridges to help slow the traffic, accommodation of vehicle loads and navigation of emergency vehicles across and between the bridges; we heard feedback on that. Maintenance requirements, the aesthetics compared to historic roadway, historic alignment of the roadway, and then other design criteria and guidelines. Whenever we build new infrastructure or work on infrastructure, we have to document anything that we're doing that deviates from standards and guidelines.

Some of the opportunities, and this is through past coordination with HDOT before we were involved with the Hanalei Roads Committee, was replacement of those Acrow bridges, lowering of the roadway and bridge profiles to improve the sight distance to get it back to a little bit more like it was before, incorporating bridge rails that are shorter and more open than those on the temporary Acrow bridges to address some of that sight distance problem, and then a very minor alignment improvement between Bridges 2 and 3.

On the flip side, moving forward to the next slide, we did hear feedback on the challenges crossing those one-lane bridges, so there were recommendations on replacing the Acrow bridges with two-lane bridges so that you don't have that stop controlled traffic situation. We also looked at this because this is the standard design recommendation that if you were coming at a project today somewhere else in the world, this would be the recommended alternative for the type of roadway we have and the traffic number. However, considering the historic context and the current roadway operating and safety conditions, we're able to apply design exception to eliminate having to create two-lane bridges. Currently, that's being evaluated as an alternative to dismiss from further analysis, so we would certainly like feedback on that.

Ms. Schneider left the meeting at 4:37 p.m.

Ms. Winterton: Another option considered, which is always a consideration on a bridge project because you're crossing a stream is to replace the bridges with one-lane bridges on a new alignment. So that allows you the opportunity to build your new bridge, maintain traffic on your existing bridge, and then switch the traffic and take out the bridge. Basically, it shortens your construction period. We looked at that and it might provide some cost savings and time savings, but it didn't really outweigh some of the other disadvantages from the alignment change, and it didn't really offer design advantages. It's not like it was the ultimate improvement to make everyone see across and between the bridges. At this point, we anticipate dismissing that alternative from further evaluation.

So really where we're left is replacing the Acrow bridges with new one-lane bridges on a similar alignment, so that's closely matching the historic alignment with just a slight minor improvement on the tweak and curve between Bridges 2 and 3. As I mentioned before, we will have to have a design exception because typically one-lane bridges are usually only considered on very low-volume roads, but based on the conditions, the engineering team felt that could be justified. And as I mentioned before, lowering the profile of the road and the bridges to get it back more to the historic conditions. Then, as part of the National Environmental Policy Act process, we do need to carry forward the no action and no build alternative.

A lot of the feedback from the community was interest in width and design considerations, so we looked at a lot of different factors, such as the Design Controlling Criteria; what recommendations are for lane width, shoulder width. We considered functionality; how vehicles can get across the bridges and between the bridges. Potential maintenance considerations for whichever bridges are out there. Pedestrian and bicycle safety; we heard was important. Driver perception and expectation; how they are able to operate on the roadway. And also the historic alignment considerations. They were all kind of factors, and advantages and disadvantages of different varying widths.

Ms. Schneider returned to the meeting at 4:39 p.m.

Ms. Winterton: What you see before you, and what I provided ahead of time with some of the layouts provided for each of the three (3) bridges is, where our team is looking at, as far as reviewing of DOT and Federal standards, what some of the conditions are out there, and that is essentially a 14-foot clear width. It's a precast concrete girder bridge. On the slide, I have some of the lengths. So essentially you have, similar to the historic conditions, a single-span bridge for Bridge 1, approximately 50 feet, single-span for Bridge 2, and then three-span approximately 178 feet for Bridge 3. There are the historic piers in the water, but they are not actually functioning right now. The Acrow Bridge actually spans them, so for permanent replacement bridges, we would need piers to support that length of bridge.

Ms. Griffin: So you'd leave the old pier, but construct new ones? Is that what you're...?

Ms. Winterton: Actually, the recommendation is to...because what we need to do is match the hydraulics and the hydraulic opening with lowering the bridge, so the recommendation is to have a three-span structure with two (2) piers in the water similar to how the historic bridges were, but to put the new piers in and to remove the historic piers. So where exactly they would line up is still being evaluated because obviously they can't put it right where the old ones are.

Ms. Schneider: What is the timeline for this? When would you be doing this?

Ms. Winterton: We aim to get through the environmental compliance process winter/early spring, and then move towards completion of the design and securing the permits. It depends a lot on funding priorities with the State, but we find that as soon as we get everything done and ready to go, the money tends to appear.

Ms. Schneider: What's the duration for doing this?

Ms. Winterton: Okay, so I include that a little bit later, but I should add that...and I didn't include...our memorandum agreement with all of these projects with HDOT is essentially to do the full delivery and construction, and turn the facility back over to HDOT by 2018. So our goal is to get all of the projects that we are working with completed in 2018. The construction approach is a challenge on these projects, and I'll talk a little bit about that later, but the anticipated timeframe, to be conservative, was two (2) years.

Ms. Schneider: And you're going to improve the sight lines for entry and exit of the bridge? Because that's really the problem now.

Ms. Winterton: Yes. So that's the goal, to improve that, but I clarified to the extent possible because there are constraints in this location, and that goes to that balancing act of improvements while maintaining consistency with historic. Are there any questions on that?

On the following two (2) slides, I have a photo of the existing Bridges 2 and 3, and a rendering of what we were thinking about for Bridges 2 and 3. Some of the feedback that we've heard, and I would love the Commission's feedback as well, you know, is really the community has grown to appreciate those 1950's bridges. From an engineering perspective, when you look at the type of the rail spacing and some of the challenges with the sight distance, it actually does provide opportunities for improvements with that type of rail design. With consideration of the design standards, we always like to have crash-tested rail when we do improvements. So we have identified a crash-tested rail that sort of plays off a little bit of the historic rail. It's a structural steel tube rail, and this rail here it's called the Wisconsin Type. We went back and forth on vehicle rail only versus vehicle combo rail, and landed on a vehicle rail, which is a little bit lower and part of that is opportunities for that improvement to the sight distance. It's top-mounted, and max post spacing is 6'-6", which is that max amount that you would want to put it towards to still meet the crash-test standards. We'd probably seek to get close to that again because that visibility through the bridge is problematic.

Construction strategies. As I mentioned, the anticipated duration of construction is two (2) years, and it's depending on funding. Because these are bridges crossing the streams, it is a little bit hard, so we are talking about evaluating site conditions and how we can maintain traffic, and it's shifting the existing Acrow bridges, using them for construction, and shifting them makai to build the new bridges on alignment, and accommodating emergency access through construction. But there would have to be delays and very short-term closures for different milestones, such as moving the bridges. Another challenge for construction is leading up to these bridges, the three (3) original historic bridges crossing different streams, these are the Waioli, Waikoko, and Waipa Bridges, these are load restricted, and construction vehicles and equipment tend to be heavy. So we have evaluated this as a construction challenge, and the current recommendation is...because we do not want to affect the historic integrity of those original bridges, is to provide temporary bridges adjacent to or over so as to not touch the original bridges.

I have here, the second to last slide here, Waioli...the approach is evaluating the site conditions, utilities, right-of-way, and opportunities of where these bridges could be placed under temporary conditions would be...Waioli, mauka of the existing; Waipa, makai of the existing; and Waikoko is a very short structure right on the coastline, and there we have an opportunity to actually go up and over the existing bridge, so building behind on each side and going up and over because we really don't want to negatively impact any historic structures.

The next steps are...we really want to get feedback, continue the design process, and refine engineering through different coordination with you all, the public, we're getting feedback from the public, SHPD, and other interested parties, and prepare the analyses and the reports, and prepare an Environmental Assessment.

Any questions? Comments?

Mr. Chaffin Jr.: Yes. I would appreciate getting this package in advance. You reviewing it in front of us is difficult for me.

Ms. Winterton: Okay. I apologize for that. I did provide a presentation in advance for the last meeting; a lot of the information is similar. And we provided the drawings for each of the bridges. So we actually...in preparation for the public meeting, really took an extra step. We've done a lot of coordination with HDOT to get to a comfort level. There is a pretty big deviation from what is typically the recommended design approach, and so we were seeking to get feedback from the public as well, and I just wanted to give the latest and greatest information. Feel free to absorb this information. We'll take comments through the process, really.

Ms. Schneider: I appreciate that you've taken into consideration what those bridges looked like originally.

Ms. Griffin: Other comments? Thank you. In a general way, it's for those of us who have dealt with roads and bridges for twenty (20) years or more. Having context sensitive solutions roll right off your tongue, you know, is music. To be talking about protecting the historic bridges, rather than all of the reasons why it's too expensive, it can't be done, the people are going to fall through, you know, height limitations, materials, but hearing the "can do" aspects is really a pleasure. I must say that with the Hanalei Roads Committee that they are consulting and in agreement is a really important component to this historical review. They know about the roads up there, and bridges. Thank you.

So moving along to Hanapēpē.

Kathleen Chu: Hello. Good evening, Madam Chair and Commissioners. I'm Kathleen Chu with CH2M Hill, and if you can switch to your next presentation packet. I'm going to talk about three (3) bridges this evening; the Hanapēpē River Bridge, the Kapa'a Stream Bridge, and Bridge No. 7E. I'll stop between each one so you guys can provide your comments on it.

Ms. Griffin: Thank you.

Ms. Chu: Again, thank you for allowing us to share this information with you and getting your feedback. Moving on to Slide 2, the Hanapēpē River Bridge is located on Kaumuali'i Highway. It's State Route 50 at Mile Post 16.5 in Hanapēpē. This bridge crosses Hanapēpē River and it's located between Hanapēpē Road to the east and Puolo Road to the west.

On Slide 3, this is a map showing the areas of potential effect for this project. I believe you received this in advance as well.

Again, just to share with you some of the project background on Slide 4, the existing bridge was built in 1938, and it's a three-span reinforced concrete bridge. It measures 275 feet from the backface-to-backface of the abutments, and has an out-to-out bridge width of 38 feet. Right now it doesn't meet current roadway or bridge design standards. It does not meet any live load or seismic requirements as well. The existing bridge is classified as structurally deficient and functionally obsolete. In addition to the substandard load carrying criteria, it also has been identified as scour critical. Recently, and I guess in the past, too, there's been inspection of the existing timber piles. I'll go into more on the timber piles on Slide 5.

There's been inspection. The DOT does inspection on the bridges every two (2) years. In 2007 and 2008, the existing pier and abutment foundations were...inspection was performed by Nagamine Okawa Engineers. In this inspection, this is where they first, I believe, noticed the undermining at both of the pier foundations and one (1) of the abutment foundations. Just in those two (2) years in 2009, they really noticed that some of the scour at these foundations has increased. Also, one (1) of the remaining unseen timber piles...there's been a lot of rot or marine infestation. They are not sure of the exact cause, but the timber piles, their load carrying capacity has diminished greatly. More recently, the DOT asked KAI Hawai'i structural engineers to go out there after a heavy storm in 2012. They noticed that one (1) of the timber piles has completely been disconnected with the concrete cap, and another one of the piles, 80% of its circumference was gone. The timber piles that are below ground, the structure capacity of those cannot be accessed because they are under water and in the ground. Right now, the DOT does monitor the top of the pier elevations just to keep an eye on the bridge. Secondly, the bridge rail has deteriorated and it does not meet current bridge standards. You can see from some of the pictures that it is decaying. Okay?

So on Slide 6, I wanted to share with you some of the alternatives that are being considered; one (1) is rehabilitation. As I mentioned earlier, the bridge is structurally deficient, and is scour critical, and the timber piles are decaying, so it needs a new substructure. The bridge needs a new foundation. There is no way we can maintain the existing foundation, so it does need a new substructure. In regards to the superstructure of the bridge, it does need a new deck. The bridge needs new bridge rails. It does need to be widened and it needs to be upgraded in regards to seismic and load carrying capacity. So that's a pretty extensive rehabilitation. It's practically all new bridge parts. The replacement is also one (1) of the options. And as Nicole mentioned, no build is also a requirement, just through the NEPA process.

I'm going to expand a little bit more on the replacement option, which is on Page 7. This is the alternative that the project team is leaning towards, just based on the information I shared with you

on the rehab option. One (1) of the goals is to design with as little change as possible. With the bridge structure, we are looking at two (2) different types of, kind of, aesthetic alternatives. The new substructure would be drilled shafts. It would have new pier foundations. It would be 308 feet long and 52 feet wide, so the 52 feet width allows for two (2) 12-foot lanes, two (2) 8-foot shoulders, and the two (2) 5-foot sidewalks. We would match the existing alignment and the profile as much as possible. We are not planning any vertical changes. We are going to continue to meet the 35 mile per hour posted speed limit, and there is no change in the 100-year storm event, so hydraulically it's still good. Right now there is an existing 12-inch waterline, a 12-inch sewer line, and existing electrical and telecommunication lines on the bridge. Those would be maintained as well. The construction strategy for the new bridge would be to place a temporary bridge on the mauka side. The temporary bridge would be 28 feet wide to maintain two-way traffic. We do know this is a very important route and it's important to maintain the two-way traffic.

The next few slides show you just some visualizations and some pictures. The first on Slide 8, this is a picture of the existing bridge. Then on Slide 9, this alternative shows a bridge that most closely resembles the existing bridge. It has an arch fascia that resembles the arch on the bridge now. Then Slide 10 shows the more traditional bridge structure that's also being considered, and this is a straight girder. Okay.

We did have a public meeting on September 17th. About thirty-five (35) members from the public attended. The questions that they asked were primarily ensuring that the temporary bridge could maintain access for their loads because there is a lot of concern with access to the landfill, and also access to the Pacific Missile Range. They were in favor of a new structure that would address any load carrying concerns as well.

In regards to the bridge rails and the end post, on Slide 11, on the west side of the bridge it appears that the bridge end post has been rehabilitated in the past. The ends were altered by the installation of a flushed concrete barrier which transitions into your traditional metal guardrails. On the east side, one (1) of the end posts has also been rehabilitated, but on the south east end, the end post on the makai side, the existing post there has been maintained; existing radius cavetto molding is still there.

Slide 13 shows a rendering of our proposed bridge rail. Again, we had to look for a bridge rail that would meet Federal Highways and the DOT crash-test standards, so this one here is a Texas Balustrade. It would be 42 inches high to meet bridge rail standard height for bicyclists. It is the same bridge rail that's out there on the Lihū'e Mill Bridge. This rendering here just shows you how the end post transitions would look as well.

I'm here to answer any questions or get any of your feedback.

Ms. Griffin: Commissioners, questions?

Mr. Chaffin Jr.: On the alternate drawings you have, are there any estimated costs?

Ms. Chu: Well the arch fascia is more expensive. I don't know the exact cost. There is another handout, an 11 by 17, which shows you the Alternative 1 and the Alternative 2. Also, another 8 ½ by 11, which shows how the fascia would be put in place.

Ms. Griffin: Other questions? I have one (1) question. What is the current width of the bridge did you say?

Ms. Chu: The current width is 38 feet, so I believe its two (2) 11-foot lanes and the 5-foot sidewalks, that's existing.

Ms. Griffin: I know in Kaua'i's Land Transportation Plan there was a view to eventually expand Kaumuali'i Highway all the way out. I'm wondering if this 52 feet wide...tell me what the 16 feet of shoulders is for, and additional 10 feet of sidewalks.

Ms. Chu: Well the 5-foot sidewalk...there's an existing 5-foot sidewalk on both sides of the bridge today, so we're putting back the existing sidewalk. The shoulder, it is primarily a safety. It's for if vehicles get stuck, for vehicles to pull over. There is no intention with this project for this to become an expansion of the two (2) lanes. I don't think the extension of a four-lane highway extended that far west.

Ms. Griffin: Yet. (Laughter in background)

Ms. Chu: At least in the 20-year long range plan. (Laughter in background)

Ms. Griffin: Okay. Also, on the railings, the existing bridge has a very interesting...I don't remember seeing another with this profile on Kaua'i; it's very 30's, deco-ish. It was not possible to do anything similar to this that would still meet Federal Highway standards?

Ms. Chu: You know, we did work closely with Federal Highways to find a bridge railing that had gone through crash testing that would most closely resemble the existing bridge rail. The Texas Balustrade was the closest that we could find with an opening. I know the opening is not quite the same.

Ms. Griffin: Yes. It's an arched opening rather than this...

Ms. Chu: Right, it's kind of a cross, yes. If we were to develop a new...this project would not be able to develop a new bridge standard and have it go through all of the crash testing that's necessary. So the Texas Balustrade is the one that most closely resembles this.

Ms. Griffin: Other questions?

Mr. Long: Well I have a comment about that response. On a number of our bridge projects, we've been working with DOT. Is it Mike?

Ms. Griffin: Most likely it's Donald Smith.

Mr. Long: Yes. So we've asked them to replicate various bridge railings, and they've been able to do that. It appears to me that we have one (1) existing bridge railing and you went through some books to try to get as close as possible because you wanted to find something that has already been crash-tested; yet, wouldn't it be possible to take a look at the design so that we could get something that replicated the existing?

Ms. Chu: I believe the bridge rails that the DOT have installed in place have been crash-tested; I mean, that would be a requirement. They would not be able to install a bridge rail that had not been...well definitely none with Federal funding. It probably is one that they were able to find that is extremely similar to the existing rail.

Mr. Long: But not...sort of similar, but not really like it.

Ms. Chu: Right, I understand.

Mr. Long: So I would like to ask that DOT come back to us with a design of a railing that's identical to the existing; a replication of the historical railing within the certain guidelines, which we have been able to do in the past, rather than look in a book for a railing that has been crash-tested that sort of looks like it.

Deputy County Attorney Higuchi-Sayegusa: I think these folks are here kind of to...through the process under the Federal laws, under requirements, reviewing cultural and historic resources. I would suggest that you folks make your comments, and then I'm not sure if...requiring the return...I'm not sure how that's going to affect your folks' processes or...I mean, if that could be accommodated.

Ms. Chu: Our primary goal tonight is to receive consultation and receive feedback. Some of the next steps are...we are in the midst of doing our environmental documents. There is a goal to have the environmental documents completed by the end of the year. There has been some preliminary engineering that's been advanced; primarily just to determine what any impacts would be. We hope to have a draft EA out by the end, but we are also consulting with SHPD, so I think the process is going to...

Ms. Winterton: Yes. I mean, I can't speak to what it takes to create a totally new rail. I could bring this, this is great input, and bring it back to our structural engineers to go and revisit, but I know they went through a pretty robust exercise to evaluate crash-tested available rails. It is a unique rail, and that's why it's hard to land on that close exact match. We can, again, revisit that, and I don't know if it's an opportunity to create a brand new rail though because of the robust process to get crash testing. With the infrastructure that we're providing and the speeds, I mean, that's the goal to have something that meets the standards. So I think the exercise was pretty robust, but we could definitely take that input, take it back, evaluate, and look at that. It sounds to me like the feedback that I'm hearing is that aesthetics related to the existing rail is extremely important to the Commission.

Mr. Long: As I look at it, you're designing a whole bridge, and we're just talking about the railing; I mean, you have to design everything about that bridge. So to design a railing that passes crash-test ought to be part of your exercise in as the way I look at it.

Ms. Nicole: Yes. I mean, I think that it's more complicated than that to go through...I mean, they go through years and years and years of crash testing through the National Highway Traffic Safety Administration. So I think there are certain parameters that they can, maybe, tweak when it still meets the standards like I was talking about Wainiha and the spacing and stuff like that, so we could take that feedback and provide it to the structural engineers and see what's possible.

Mr. Long: Yes. I mean, on a design level, art deco is rectilinear and this railing has an arch in it, so you're actually taking away part of the cross section of the railing by introducing an arch. So maybe there are certain parameters of railing and steel and volume that your designers could take a look at?

Ms. Nicole: Okay, yes. That's good feedback.

Ms. Griffin: Other comments?

Okay, moving right along.

Ms. Chu: Okay. So the Kapa'a Stream Bridge on Slide 14. This one is located at Mile Post 9.8 on Kūhiō Highway, State Route 56. It's on the east side of Kāua'i. This project also includes improvements at Kūhiō Highway and Mailihuna Road intersection, which is located approximately 550 feet south of the bridge.

The next slide, Slide 15, shows the area of potential effect for this project.

On Slide 16, some of the project background. Kūhiō Highway is a two-lane undivided highway with existing lane widths of 12 feet and shoulders on either side of the bridge range between 4 to 8 feet. There is an existing deficient two-span bridge that was built in 1953. It's also classified as being functionally obsolete. This one also has substandard load carrying capacity, and it doesn't meet current seismic requirements. This bridge has also been identified as scour critical. On this bridge, the condition and the capacity of the existing timber piles is unknown because it's completely underground. This existing bridge is approximately 150 feet long and it is 38.5 feet from out-to-out. Again, it doesn't meet the current width requirements, and the bridge railings and approaches don't meet current crash test requirements. And the Kūhiō Highway and Mailihuna Road intersection is a three-legged stop control on Mailihuna Road. There is also this private driveway that accesses it to the northwest. Just a little bit more about the intersection, which is probably less of a focus for this Commission, but it does experience a lot of delay, and pedestrians currently are not accommodated. In the past, there has been seven (7) accidents within the project limits; none of them were fatal, but six (6) of them occurred directly from the people trying to make the left turn movement from Mailihuna Road onto Kūhiō Highway.

So for the bridge, on Slide 17, the three (3) primary alternatives that are being considered are the rehabilitation, the replacement, and the no build. Again, the existing deficient two-span bridge was built in 1953 starting with the substructure. The current condition and capacity of the timber piles that support the abutments and the center pier are unknown, so right now we just don't know what the adequacy of the existing foundation is. To rehab it, we would have to do a pretty extensive retrofit to the existing foundation to make this a viable option. For the superstructure, to rehabilitate the existing bridge, we would need to widen it, we would need to take down the bridge rails, and this would, again, be an extensive process to strengthen the girders and make it meet seismic requirements, as well as the load carrying requirements. Again, we discuss the no build option as it being a requirement, and then there's the replacement of the existing bridge.

Also on this bridge, with initial consultation with the State Historic Preservation Division, we had met with Architectural Historian Jessica Puff and she recommended that no survey work was needed for Kapa'a Stream Bridge. The bridge is not eligible for listing on the National or the Hawai'i Registers of Historic Places, but the final determination will be made by Federal Highways.

On Slide 18, we share with you what is being proposed. Again, the replacement is where the project team is heading. The new bridge structure would be a single-span concrete bridge, so we would remove the need of a center pier, and this would help hydraulically with flow conditions in the future. The new bridge would be 190 feet long with a deck width of 42.5 feet. This bridge...we're not putting back the sidewalk, we're putting back two (2) 12-foot lanes and two (2) 8-foot shoulders, so the bridge would be widened a total of 4 feet; that's 2 feet on each side. Basically, the bridge railing would be 2 feet, 8 inches high. It would have a 10-inch high metal railing for bike safety, so that would bring it to a total of 42 inches. This also most closely resembles the existing bridge rail. Again, the utilities would be maintained on the existing bridge. In order to construct it, we would place a temporary bridge on the makai side, so this would be between the existing bridge and the shared use path bridge.

Slide 19 is kind of the visual simulations of "Before" and "After" of what the bridge would look like. We did have a public meeting on this bridge on September 18th. As you can imagine, most of the focus was really on the intersection. We didn't have too many comments on the bridge.

Again, I'll just quickly go through the intersection. In relation to the intersection, on Slide 20, it is to improve the traffic operations by trying to help reduce delays and improve pedestrian safety at this intersection. For Mailihuna Road, the traffic does back up so it does have a level of service of F.

Alternative 1 is a roundabout alternative, which would be a single-lane roundabout with a truck apron. It would have splinter islands and marked sidewalks on each approach. The single-lane would be 18 feet wide with an inscribed circle diameter of 130 feet. This roundabout would alleviate congestion and reduce delay on Mailihuna Road, and it would also provide a yield control on all legs. It does have a much larger footprint than the existing intersection, so this alternative would require a lot more grading. It would require more retaining walls, and there would be more encroachment in the undeveloped coastal area.

The next alternative, on Slide 22, is your more traditional intersection with full traffic and pedestrian signals, and crosswalks. This alternative would provide a new northbound left-turn lane on Kūhiō Highway for those going onto Mailihuna Road, and a southbound right-turn lane as well. The northbound left-turn lane would provide 180 feet of storage, and then the southbound right-turn lane would provide 150 feet. So this alternative would include, again, the signal of the marked crosswalks and lighting to improve conditions for your non-motorized modes.

That's it for Kapa'a Stream Bridge, and the Kūhiō Highway and Mailihuna Road intersection. Do you guys have any comments? Questions?

None? Okay.

Mr. Long: I have a comment.

Ms. Chu: Oh, okay.

Mr. Long: Where the new proposed railing for Hanapēpē is similar to the existing, this one has no resemblance to the existing at all, in my opinion; it's like nobody even tried. The existing is somewhat art deco with bi-partake rectangular columns and a different rhythm in the railing, so I don't see any similarity between "Before" and "After", at all. It doesn't look like it was picked out of a book; it looks like it was just poured concrete, the new railing. So it wasn't like somebody said "oh gee, let's pick a railing that's similar to the existing", they just designed a straight pour.

Ms. Chu: Okay.

Mr. Long: So it's the same comment.

Ms. Winterton: Okay. I think that's good feedback, and I can take it back, again, to our structural engineers. I don't know if...I think with this bridge it didn't have as much...not to say that we moved more towards that with Hanapēpē, but Hanapēpē was a more historically significant structure, and I think that effort was very robust whereas I think the aesthetics were integrated into this, so I can bring that feedback back, but I don't think resembling or matching was identified as a goal, so if that's feedback that you think should be considered.

Mr. Long: I'd like to identify it as a goal.

Ms. Winterton: Okay.

Ms. Schneider: Keeping the same rhythm as the old bridge.

Mr. Long: Yes.

Ms. Schneider: As opposed to this very even spacing that you have on the new bridge.

Mr. Long: I mean, you have historical architects in your group, yes?

Ms. Winterton: Yes.

Mr. Long: So could you have that architect talk to that engineer? (Laughter in background)
Because this is clearly designed by that engineer.

Ms. Winterton: Yes, I mean, well we have Barbara here who can speak, so really we have the meeting and the minds that come together.

Mr. Long: Are you the architect or the engineer?

Ms. Winterton: So I mean, I think it's that balance of when we have that historically significant structure, there's the balance of striving to maintain or play off of the aesthetics, but we are not trying to recreate history. I don't know if that was the primary goal on this job. I think it's more of a sensitivity towards the community, and the appreciation for the structure that they are seeing.

Mr. Long: Well, the structure that you see when you drive across the bridge is the railing.

Ms. Winterton: Okay.

Mr. Long: That's all you see. You don't see the girders, you don't see the...

Ms. Winterton: We didn't get a whole lot of feedback on the rail itself, except for the visibility out while you're driving.

Ms. Chu: Right, was to keep the bridge rail...to not make the bridge rail too high as to maintain some of the visual plains; the makai/mauka.

Mr. Long: Yes, I understand that. I would say that it's an architecturally significant feature on this bridge. When was this built?

Ms. Winterton: Preliminary coordination is that it is built in 1952 or '53; Barbara could chime in.

Mr. Long: Okay, so it was built in the 50's.

Ms. Winterton: It's not viewed as eligible for the State, nor the National Register.

Mr. Long: I'm not talking about that. I'm talking about it being architecturally and aesthetically significant.

Barbara Shideler: If you believe it's architecturally...

Ms. Griffin: Can you identify yourself?

Ms. Shideler: Barbara Shideler with Mason Architects. It may very well be architecturally significant to the community. In defense of the engineers and CFL, when we consulted with State

Historic Preservation Division, they said that they did not believe it was historically significant, and in fact, it was removed from our scope of work. It's a common bridge type. It was identified as not of historic consideration. I mean, that's why we've come to the local community, to consult with you and get another voice on that. We hear that and it's something to take into consideration as we go forward.

Mr. Long: Thank you.

Ms. Winterton: We can have the meeting of minds reassessed, and connect on the architecture and the safety.

Mr. Long: Yes, because SHPD has their standards, and historically significant is different than aesthetically significant. So I'm interested in the aesthetically significant aspect. Thank you.

Ms. Winterton: Okay, that's good feedback. Thank you.

Ms. Chu: Any other comments on the Kapa'a Stream Bridge?

Mr. Long left the meeting at 5:23 p.m.

Ms. Chu: So the last one is Bridge No. 7E. It's located on Kaumuali'i Highway on Route 50. This one is near Mile Post 7. The route is classified as Rural Minor Arterial, and it's the primary route from Līhu'e to the Kōloa District. This bridge is just west of Maluhia Road.

Slide 24 shows, again, the area of potential effect for this project.

On Slide 25, just some of the project background. The purpose of this project is to improve Bridge 7E to maintain Kaumuali'i Highway's crossing of an unnamed stream and to, again, continue to provide a safe and functional component of the regional transportation system. The existing bridge was built in 1933 and again, the structure doesn't meet current live load, seismic, roadway widths, railings, or other requirements. This bridge is a reinforced concrete box that has two (2) culvert cells with wing wall abutments, and again, is structurally deficient. The bridge is 22 feet long and the width is 32 feet wide. Through this bridge, the existing highway is 10 feet. There are two (2) lanes that are 10 feet with 2-foot shoulders on each side, and the posted speed limit is 50 miles per hour.

Again, the project team looked at the rehabilitation, the replacement, and the no build alternatives. Right now, the top slab of the box culvert does not meet the current live load requirements. The bridge has also been paved over in the past. This would need to be strengthened, so if they strengthen the top slab, they need to increase the slab thickness and they would have to put in increasing reinforcement on the sides of the box, which may also affect the hydraulic capacity of the box and overstress the existing piles. So again, rehabilitation can be very complex, and again, the capacity of the existing piles is unknown as well. The project team moved forward into looking at the replacement option, and then there is the no build option that also needs to be considered.

Mr. Long returned to the meeting at 5:25 p.m.

On Slide 27, the proposed bridge is 24 feet long. We are looking at a single-cell box culvert, so it'll be just a one (1) box culvert cell, versus two (2) cells. This will improve the hydraulic capacity. It will be 44 feet wide, so this would allow for your two (2) 12-foot lanes and 8-foot shoulders, and room for the bridge rails as well. We will put in crash-tested bridge rails. The intent is to match the existing profile and alignment of the roadway, so there will be no changes vertically or horizontally. We'll maintain the existing electrical and telecommunication lines.

The next slide shows you the "Before" and "After" of what it would look like. Right now, most people don't realize they are going over a bridge. There is just guardrail and the bridge has been paved over. So in the future, you will see your standard concrete barrier.

Any comments?

Ms. Griffin: Comments? I noticed on all of these the area of potential effect includes under the bridges and some land. I know we have archaeology represented here, and none of that has been discussed, but I'm wondering if there are areas in any of these bridges that we've discussed, cultural archaeological sites that would have any kind of adverse effect.

Gerald Ida: Gerald Ida, Cultural Surveys Hawai'i. Just speaking generally, no, there's nothing really. At this point, we've done work on each of these bridges and we have submitted reports to SHPD, but they haven't been totally reviewed yet; they are still in draft form. We have had a meeting with SHPD to discuss the findings. We have done subsurface testing, as well as surface surveys of the surrounding areas of the bridges. It's been my experience when you do things like these bridges, because I've done a lot of bridges including Wailua, a lot of these places are pretty messed up where there is an existing bridge. I would have not expected to find anything and indeed we found very little. What cultural material, historical, and pre-contact artifacts we found are not associated with any kind of intact cultural layer or historical layer; they are just messed up. There are some artifactual material in there, but nothing you can really do any kind of analysis on.

Ms. Wichman: So mostly backfill? Is what it looks like?

Mr. Ida: Yes, because they messed the place up big time once they put in the abutments.

Ms. Griffin: So for the purpose of this Commission, we don't need to be concerned about that aspect of the projects as they've been described.

Mr. Ida: Like I said, the ball is in SHPD's court right now. I can see where they might require us to do potentially maybe just a little bit more subsurface work, but...and there are some actual sites in these areas, but they are really kind of marginal stuff like historic culverts and stuff like that.

Ms. Griffin: Culverts may become a big discussion at some point in the not too distant future.

Mr. Ida: I know. Hopefully I will be retired by then. (Laughter in background)

Ms. Griffin: Thank you. Other questions of Gerald? I appreciate that. Thank you.

Other general questions for Kathleen or Nicole? No. We casually gave you comments as we went along, so if there are no other questions, then may I have a motion to receive this information and documentation as we have it?

Ms. Schneider: I make a motion that we receive this documentation as presented.

Mr. Chaffin Jr.: Second.

Ms. Griffin: Second, thank you. It's been moved and seconded that we receive the documentation on the bridges. Discussion? All in favor? (Unanimous voice vote) Opposed? None. The motion carries 6:0. Thank you all very much for waiting so long, for being together with the presentation.

Ms. Winterton: Thank you.

Ms. Chu: Thank you. Thank you for your time.

ANNOUNCEMENTS AND GENERAL BUSINESS MATTERS

Ms. Griffin: We skipped a couple of pieces, and they are short. The first is the Announcements and General Business Matters. There is an announcement about the SHA Conference.

Victoria, do you want to tell us about...?

Ms. Wichman: I do. I'm one (1) of the co-Chairs for the Society for Hawaiian Archaeology Annual Conference that's coming up October 9th, 10th, and 11th. We have invited the Planning Department to come free of charge, so everybody here is invited. Mr. Furfaro, you are more than welcome to come, please. Friday evening, starting at 5 o'clock, 5:00 until 8:00, we'll have the Kaua'i Museum for the first hour; we'll have it all to ourselves. We are having a stewardship award, Naki'ikeaho Stewardship Award, which will be presented to Hui Makaaainana o Makana out in Hā'ena. Our keynote speaker will be Mayor Carvalho, and he'll be speaking on his preservation efforts on this island, which I thought that was very appropriate.

Ms. Griffin: So we need to listen to that.

Ms. Wichman: Please come. It's open to the public here at the Kaua'i Museum next Friday night actually, and then on Saturday and Sunday at the Wailua...at Smith's Family Tropical Paradise Luau Grounds, we'll be having our conference; it starts at 8 o'clock in the morning. We have many papers. I know Saturday is kind of a bad time for Kaua'i because it's the same day as the Queen Emmalani up in Kokee, but we do have a lot of interesting papers going on, on that day. We also have conference papers going on, on Sunday, the 11th, and I tried to put most of our Kaua'i papers on that morning, so the Kaua'i people that might've went up to the Queen Emmalani would have an opportunity to hear papers from Kaua'i. As I mentioned, it's free for the County to come;

anybody in the County is welcome to come as our complimentary guest. We anticipate about a hundred (100) archaeologists showing up for this. Very interesting papers; there are several papers on Nu'alolo Kai. There are papers on Kaua'i Nui Kuapapa, which is the ahupua'a and moku signage project here on the island; interesting papers. I could send to Shan our schedule-at-a-glance. Mary Jane Naone and I are the organizers. We are still in the process of doing the last minute T's and I's on our program, so that won't be ready until the conference, but I do have the schedule-at-a-glance which we can pass around or email.

Ms. Griffin: It's online, isn't it?

Ms. Wichman: It is online. Our site is hawaiianarchaeology.org.

Ms. Griffin: Did everybody get this 2015 conference...? So at the bottom of it, it shows the hawaiianarchaeology.org.

Ms. Wichman: Yes, it should have the website on there. So that should have all of the updated schedules as well. Food is included, so it's all good. There's a luau on Saturday night. You are all welcome to come to that as well.

Mr. Hull: Commissioner Wichman, just for clarification, do say KHPRC members that want to attend, do they just show up and they'll be comped? Or should they contact...?

Ms. Wichman: It would be nice if people would let me know, if they would RSVP because I need a headcount for the food. So it's always good for me to know, and then I can have name tags that show who your affiliation is as well. It's a really good opportunity for networking with archaeologists. These are archaeologists that are from across the State of Hawai'i, plus from New Zealand, California, Ohio, New York, and Alaska, several different states as well. We also have a workshop on Sunday afternoon on microfossils. It's kind of interesting. We have a professor from New Zealand who's coming up to give a paper, and since he came we thought we'd ask him to do one on microfossils and phytoliths, which has to do with plants, so it should be quite interesting.

Ms. Griffin: Thank you so much. And thanks to you and our SHPD archaeologist, Mary Jane Naone, they have really, from what I understand, have put this thing together and it should be a really fine conference that all of us should be able to take advantage of. Thank you.

Ms. Wichman: We're looking forward to it. Thank you. And specifically, I'd really like to invite you to the Mayor's keynote address on Friday night, and to honor Hui Maka'ainana o Makana. I think they are very worthy of honoring at this time. The Mayor is such a dynamic speaker that I think...he's so enthusiastic about his preservation efforts that I'm looking forward to hearing him.

Ms. Griffin: Thank you.

Ms. Wichman: Thank you.

Ms. Griffin: Any other announcements and general business matters?

UNFINISHED BUSINESS (Continued)

Re: Report from investigative committee members (Permitted Interaction Group) to discuss and explore strategies on informing the public and land owners on the State and National Register of Historic Places Nomination Process and Incentives for placing historic structures on to the National and State Register of Historic Places.

Ms. Griffin: Going on to C.2., the report from the PIG to discuss and explore strategies on informing the public. There is a printed report here at this point. One (1) of the two (2) possibilities that was on the report that we made last month was the possibility of putting the Shell Station on the National Register, so I just wanted to mention that.

There was also, and we read in the minutes, I think that we had been suggesting our little mini education for this or next month, and that's why I was a little short, Larry, when you talked about cost because one (1) of the opportunities we have...there are tax incentives. Buildings built before 1936 that are on the National Register can get a 20% tax credit on rehabilitation. There are things like that that if we know about, we will be able to discuss with applicants, people who come before us, and to be able to get the information out. I'm hoping that, Mr. Hull, if you can arrange perhaps if Ian Jung will come back and educate us on his time. Or we have some other expert who could give us that training next month; I think would be beneficial for us all.

Was there anything else from our PIG that...?

Re: Report from investigative committee (Permitted Interaction Group) to discuss and explore creating a Smart Phone Application to identify and highlight Historic properties on Kaua'i.

Ms. Griffin: Then on C.3., report from the Permitted Interaction Group to discuss the Smart Phone App.

Ms. Wichman: Nothing has been done, so I'd like to defer that. Kuulei and I have not gotten together. We were supposed to be talking with the Kaua'i Nui Kuapapa, and that hasn't happened as well.

Ms. Griffin: Okay, great.

Ms. Wichman: So defer it, please.

Ms. Griffin: If we can just continue that on the agenda for next month.

Re: Discussion on the status of the Certified Local Government.

Ms. Griffin: And then the status of the Certified Local Government, C.4. I guess the most important question is, when are the applications due for the next round of Certified Local Government funds?

Mr. Hull: It usually happens, I believe, in March. We'll double-check on that.

Ms. Griffin: So perhaps if you can have in your tickler file to put in maybe our December or January agenda to start discussing possible projects. Inventory always comes up, but we do have the possibility of National Register nominations that our PIG has discussed.

Mr. Hull: And on that topic, to use that as an agenda item to segue into the fact that concerning the current inventory that we have or don't have, it's ultimately, and I think the Commission, you are going to have to start wrestling with whether or not they want to do this, but ultimately there are issues that both the Department and SHPD have with the inventory that was produced, and perhaps that needs to be, essentially, pared down. Essentially what it looks like could be a possibility for you guys to put on the back burner and start thinking about is that, to utilize this body, essentially, to go through the list and establish an acceptable inventory, essentially. There is a fair amount of work associated with that, and meetings could be a bit longer, but the inventory list is one (1) of the most critical resources for this body and for the County, in terms of preservation and that is probably the only avenue because it lends itself to public discourse and transparency that would be acceptable, really.

Ms. Griffin: That's great. I think that if we can establish another PIG so that three (3) or four (4) of us can do it, and then we can bring it back to the Commission and get it more efficient. So if you will remind us or have it as an agenda item next month.

Anything else on the CLG? In that case, our next meeting will be next month, November 5th, and hope to see you...yes?

Mr. Long: I have a question and a thought.

Ms. Griffin: Yes.

Mr. Long: We came up with these four (4) neighborhoods to do a historic survey of. We came up with four (4) because that seemed like a reasonable amount of work for them, but we don't know if Pākalā will be included in that group because it's privately owned. My guess is that we likely will not receive permission from the owner to do that survey there. In my discussions with some of the Planning Staff, there was a concern that we didn't have enough neighborhoods on this list. So my consideration is, do we want to put Hanapēpē and Waimea, which were the other two (2) communities that we discussed that we were going to be doing as a tier 2, phase 2, next year. Do we want to put those on this list so that we don't end up with less work than we possibly could have?

Ms. Griffin: Thank you. And that was in my anxiousness to get everybody out of here, I didn't give enough attention to that part of the CLG. It was my understanding that Staff was going to

compile the list of the several different areas that we discussed. Did that happen? Or did it just go down to...?

Mr. Hull: As I understand, it just went to the four (4), but I have to double-check with Myles on that.

Ms. Griffin: Okay.

Mr. Hull: But we should make a note to bring that back at the next KHPRC meeting.

Ms. Griffin: Okay. Yes, Myles did send a message saying that they are going to start doing their field surveys in October and November, but we don't really know... And they will have students as interns doing the inventorying and so forth, and the field surveys, and that they will let the Planning Department know when they have a real schedule for here.

Mr. Long: In my conversation with Myles, he said that they are going to be relying on in-house Staff, students, and volunteers to do this survey work. I'm a member of the public; I would like to volunteer to be part of that team in that process.

Ms. Griffin: They specifically said that members of KHPRC are welcome to participate.

Mr. Hull: Okay. We'll have to look at that. I think having you as a volunteer would be wonderful, but then we'd also have to look at your ability to actually vote on that item though. Inadvertently you push yourself out of the decision-making process because you may have to recuse yourself, but Jodi can look into that.

Ms. Griffin: Thank you. Anything else on that agenda item?

SELECTION OF NEXT MEETING DATE AND AGENDA TOPICS (11/5/2015)

Ms. Griffin: Okay. Then the next meeting is set for November 5th, first Thursday. Is there a motion to adjourn?

Ms. Schneider: I make a motion.

Mr. Chaffin Jr.: Second.

Ms. Griffin: Thank you. All in favor? (Unanimous voice vote) Thank you. Thank you all for taking the time.

ADJOURNMENT

The meeting was adjourned at 5:45 p.m.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Darcie Agaran". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

Darcie Agaran
Commission Support Clerk

Date: 10/20/15

HISTORIC HAWAII FOUNDATION

December 9, 2015

Mr. J. Michael Will, P.E.
Project Manager
Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 380
Lakewood, CO 80228

**Re: Hanapēpē Bridge Replacement Project (Project No. HI STP SR50(1)
Waimea District, Island of Kaua'i, Hanapēpē Ahupua'a
Tax Map Key: (4)1-9-007:001 Hanapēpē River, (4)1-9-007:013, (4)1-9-007 Kaumuali'i
Highway Right-of-way, (4)1-9-010:015, (4)1-9-010 Kaumuali'i Highway Right-of-way**

FHWA Reference: HFPM-16

Dear Mr. Will,

Thank you for referring the above mentioned project to Historic Hawai'i Foundation (HHF) under Section 106 of the National Preservation Act (NHPA). HHF received your letter of August 26, 2015 opening consultation, containing the scope of work and attached exhibits, including a Draft Archaeological Inventory Survey Report (AISR) and the State Historic Preservation Division (SHPD) Historic Resource Inventory Form.

Historic Hawai'i Foundation is a statewide organization established in 1974 to encourage the preservation of sites, buildings, structures, objects and districts that are significant to the history of Hawai'i. HHF is a consulting party to the Federal Highway Administration and its state and local partners pursuant to the implementing regulations of the NHPA at 36 Part 800.2(c)(5) as an organization with a demonstrated interest in the undertaking and a concern for the effects on historic properties.

HHF accepts the invitation to participate in the consultation for the Hanapēpē Bridge and efforts to avoid, minimize and mitigate adverse effects on historic properties.

Undertaking: The project proposes to demolish the Hanapēpē Bridge and its approaches, and construct a new bridge.

APE: The Area of Potential Effect (APE) includes the Hawai'i Department of Transportation (HDOT) right-of-way (permanent impact) and portions of adjacent private property (required temporarily during construction) as indicated on the maps submitted.

Identification of Historic Resources: The Hawai'i Department of Transportation (HDOT) State Historic Bridge Inventory determined the Hanapēpē Bridge is eligible for listing on the National Register of Historic Places.

Further, HDOT categorized the Hanapēpē Bridge as “High Preservation Value.” That designation triggers a higher level of evaluation and treatment, as the clear intention is to preserve and rehabilitate High Preservation Value resources per the Secretary of Interior’s Standards for the Treatment of Historic Properties.

***Eligible – High Preservation Value:** Bridges within this category include those that are generally unique or possess characteristics of a type and exhibit high degrees of historic integrity. These are recommended for listing on the Hawaii or National Register of Historic Places. HDOT must consider all feasible and prudent alternatives as required by Section 4F for the treatment of historic bridges deemed “eligible” and “high preservation value.” [Hawai‘i State Historic Bridge Inventory & Evaluation (2013), p. 1-10]*

The Draft AISR identifies four cultural resources within the APE, including the Hanapēpē Bridge.

- Hanapēpē River Bridge: This architectural cultural resource was evaluated as eligible to the National and Hawai‘i Registers under criterion “A” (association with development of Kaua‘i’s Belt Road), and Criterion “C” (excellent example of concrete bridge construction, and “work of a master” (William R. Bartels)) [AISR, p. 90]
- Basalt and Mortar Retaining Wall: This architectural cultural resource was evaluated as not eligible to the National and Hawai‘i Registers due to lack of engineering significance and no known association with an important historic person or event. [AISR, p. 90]
- Dry-stacked Basalt Stone Wall: This architectural cultural resource was evaluated as not eligible to the National and Hawai‘i Registers due to lack of engineering significance and no known association with an important historic person or event. [AISR, p. 90]
- Large Earthen and Piled Basalt Stone Berm: This architectural cultural resource was evaluated as eligible to the National and Hawai‘i Registers under Criterion “A” (association with community planning and development of Hanapēpē as well as federal flood control projects). [AISR, p. 90]

Determination of Effect: FHWA’s letter of August 26, 2015 opening consultation does not include a determination of effect for the undertaking.

Under the regulations of the National Historic Preservation Act (NHPA), demolition of an eligible historic resource is, by definition, an adverse effect. [36 CFR 800.5]

Historic Hawai‘i Foundation finds the proposed undertaking would be an adverse effect to the Hanapēpē Bridge.

Furthermore, Section 4F of the Department of Transportation Act (DOT Act) of 1966 is applied, which in turn requires “feasible and prudent alternates” to the “use” of a historic resource.

As the subject historic property is deemed of “high preservation value”, HHF strongly recommends that an alternative to demolition be selected.

Consideration of Alternatives: Some alternatives to be considered for discussion include:

- Preservation of the Hanapēpē Bridge with repairs and rehabilitation consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties;
- Restoration of lost/altered character-defining features of the historic bridge;
- Structural rehabilitation of the existing structure;
- Separate bicycle bypass or 'share the road' configuration rather than widening or replacing the bridge; and
- Develop a prototype in-kind replacement railing that meets both historic preservation standards and engineering requirements for use on the bridge.

As a part of the consultation on the demolition of another historic Kaua'i Bridge (Līhu'e Mill Bridge), a Memorandum of Agreement (MOA) was developed. A stipulation from that project is relevant for the current undertaking, namely:

- HDOT shall conduct a forum with the FHWA, SHPD, KHPRC, HHF and other interested parties to discuss historic bridges located within the County of Kaua'i. The purpose of the forum is to develop a consultation protocol among the participants regarding the rehabilitation of historic bridges identified in the HDOT Historic Bridge Inventory. HDOT shall initiate the forum by December 31, 2015. [Stipulation #16, Līhu'e Mill Bridge MOA]
- A topic to be addressed during the forum is the identification, replication and crash testing of the most typical railing types from the Historic Bridge Inventory. [FHWA Letter to HHF August 28, 2014].

HHF recently sent a letter to FHWA and HDOT (November 19, 2015) reminding them of the open stipulation and their responsibility to address these issues in the Kaua'i Historic Bridges Forum.

Historic Hawai'i Foundation looks forward to resolving the outstanding issues and adverse effects on the Hanapēpē Bridge.

Very truly yours,



Kiersten Faulkner, AICP
Executive Director

Copies via email:

FHWA: Meesa Otani

HDOT: Nishioka, Donald Smith

SHPD: Alan Downer, Jessica Puff, Susan Lebo, Mary Jane Naone



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380A
Lakewood, CO 80228-2583
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

May 11, 2016

In Reply Refer To:
HFPM-16

TO: THE HONORABLE SUZANNE CASE, CHAIRPERSON
DEPARTMENT OF LAND AND NATURAL RESOURCES

ATTN: SUZANNE CASE
STATE HISTORIC PRESERVATION OFFICER

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: NATIONAL HISTORIC PRESERVATION ACT, SECTION 106 AND HAWAII
REVISED STATUTES, CHAPTER 6E CONSULTATION
HANAPEPE BRIDGE REPLACEMENT PROJECT
WAIMEA DISTRICT, KAUAI ISLAND, HANAPEPE AHUPUAA
PROJECT NO. HI STP SR50(1)
TAX MAP KEY: (4)1-9-007:001 HANAPEPE CANAL, (4)1-9-007:013, (4)1-9-
007:034, (4)1-9-007 KAUMUALII HIGHWAY RIGHT-OF-
WAY, (4)1-9-010:015, (4)1-9-010:014, (4)1-9-010:046, (4)1-9-
010:050, (4)1-9-010 KAUMUALII HIGHWAY RIGHT-OF-
WAY

Dear Ms. Case:

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in partnership with the State of Hawaii Department of Transportation (HDOT), is proposing to replace the Hanapepe River Bridge at Mile Post (MP) 16.57 on Kaumualii State Highway 50 (HI-50) (see attached Area of Potential Effects USGS Map for project location). The proposed project is considered a federal action and undertaking, and will comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (2006), as well as Hawaii Revised Statutes (HRS) Chapter 6E. This letter is to initiate consultation with the State Historic Preservation Division (SHPD) under Section 106 in accordance with Title 36 of the *Code of Federal Regulations* (CFR), Section 800.3, and in accordance with HRS Chapter 6E-8.

Overview of the Undertaking

The existing Hanapepe Bridge, built in 1938, does not meet current seismic requirements and has a substandard load carrying capacity. Inspection of existing timber piles, which support the two-span bridge, has identified possible marine borer infestation and decay which may compromise their load carrying capacity. The proposed project would replace the Hanapepe Bridge and its approaches to maintain the Hanapepe River crossing on HI-56 as a safe and functional component of the regional transportation system for highway users.

The new structure would accommodate two 12-foot travel lanes, two 8-foot shoulders, two 5-foot sidewalks, and concrete bridge railings on both sides. The new concrete railing would have similar style openings to the existing bridge railing and would be 42 inches tall for bicycle safety. Concrete end posts would be provided at the roadway transition to the bridge, to provide a visual transition from the bridge railings to the roadway metal guardrails. The bridge design was identified in consultation with your office because it complements the surrounding historic area.

During construction, Hanapepe Bridge would be closed to traffic, and a temporary bypass road and bridge would be constructed to route traffic over Hanapepe River upstream of the existing bridge.

The proposed improvements would occur within existing HDOT right-of-way. However, construction parcels would be needed for the temporary bypass road, construction zone, and staging areas during construction. Archaeological monitoring will be conducted for all initial ground disturbance and excavation activities during construction.

Rehabilitation of the existing bridge was evaluated, but dismissed from further consideration based on the age and deteriorated condition of the existing bridge. For rehabilitation to meet current design requirements, the existing bridge would require improvements that would essentially result in dismantling a substantial portion of the existing bridge and construction of new bridge rails that meet crash test requirements. An alternative to retain the existing Hanapepe River Bridge, but close it to vehicular traffic in light of structural and functional deficiencies and restricting its use to pedestrians and bicycles, was considered but dismissed because of the substantial adverse impacts to adjacent property owners and businesses and high costs involved in realigning the highway for a new river crossing.

Area of Potential Effects

The archaeological and historic architectural Areas of Potential Effects (APE) are illustrated in the attached APE Aerial Imagery maps, and include both temporary and permanent impact areas. The APE (updated in March 2016) comprises 2.9 acres and includes the following TMKs: (4)1-9-007:001 Hanapepe Canal, (4)1-9-007:013, (4)1-9-007:034, (4)1-9-007 Kaumualii Highway Right-of-Way, (4)1-9-010:015, (4)1-9-010:014, (4)1-9-010:046, (4)1-9-010:050, (4)1-9-010 Kaumualii Highway Right-of-Way.

Determination of Eligibility

Pursuant to NHPA Section 106 and HRS Chapter 6E-8, cultural resources investigations were performed within a field survey area that included the project's updated APE. The cultural resources investigation comprised an archival literature review, an architectural reconnaissance survey, and an archaeological inventory survey.

Two eligible historic sites were identified within the APE:

- SIHP #50-30-09-2280: Hanapepe River Bridge
- SIHP #50-30-09-2283: Levee

The surveys did not identify any eligible archaeological resources within the updated APE. FHWA believes all historic properties with potential to be affected by the undertaking have been identified.

The Hanapepe River Bridge (SIHP #50-30-09-2280) was included in the 2013 Hawaii Historic Bridge Inventory and Evaluation prepared by MKE Associates, LLC and Fung Associates, Inc. as eligible for the National Register of Historic Places (NRHP) and the Hawai'i Register of Historic Places (HRHP) under Criteria A and C. Mason Architects has updated the site record as part of this undertaking's inventory efforts. The Hanapepe River Bridge is significant for its contribution to the areas of engineering and transportation in Hawaii. The bridge is eligible for listing on the NRHP and the HRHP under Criterion A for its associations with the development of the Kauai Belt Road System and its role in the history of the town of Hanapepe. It is eligible under Criterion C as an excellent example of later developments in concrete bridge construction on Kauai and represents the "work of a master," William R. Bartels.

The levee (SIHP #50-30-09-2283) is evaluated by Mason Architects as significant under Criterion A for its association with community planning and development of Hanapepe as well as federal flood control projects.

FHWA is in agreement with the recommendations of Mason Architects and has therefore determined that Hanapepe Bridge is *eligible* for the NRHP under Criteria A and C and that the levee is *eligible* for the NRHP under Criterion A.

Detailed information on the cultural, archaeological, and historical settings of the project area and the evaluation of eligibility are provided in two studies prepared for this project, included on the enclosed CD:

1. Draft Archaeological Inventory Survey Report for the Hanapepe River Bridge Replacement Project, Hanapepe Ahupuaa, Waimea District, Kauai
2. Hawaii SHPD Historic Resource Inventory Form (Reconnaissance Level) for Hanapepe Bridge

Determination of Effects

The proposed action would demolish and replace the Hanapepe River Bridge and would remove a portion of the historic levee, resulting in an Adverse Effect on the Hanapepe River Bridge (SIHP #50-30-09-2280) and No Adverse Effect on the levee (SIHP #50-30-09-2283) in accordance with Federal regulations (36 CFR 800.5) and an Effect, With Agreed Upon Mitigation Commitments in accordance with HAR §13-13-275-7.

A detailed Determination of Effects memorandum is attached to this letter.

As part of the environmental process for this undertaking, FHWA must also comply with Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966. The intent of the Section 4(f) Statute, 49 U.S.C. Section 303, and the policy of the FHWA is to strive to avoid transportation use of historic sites and publicly owned recreational areas, parks, wildlife and waterfowl refuges. However, the legislation states that a transportation project may be approved if it results in a *de minimis* impact. As defined in FHWA's implementing regulations (23 CFR 774), "for historic sites, *de minimis* impact means that the FHWA has determined, in accordance with 36 CFR part 800, that no historic property is affected by the project or that the project will have "no adverse effect" on the historic property in question." This project has been determined to have *no adverse effect* on the levee (SIHP #50-30-09-2283). Based on the findings outlined above,

FHWA-CFLHD may make a *de minimis* finding for the Section 4(f) requirements for this property.

Consultations

Section 106 notice/advertisement was published in The Garden Island on August 29, 2015. Native Hawaiian organizations and Native Hawaiian descendants with ancestral, lineal, or cultural ties to, cultural knowledge or concerns for, and cultural or religious attachment to the proposed project area were asked to provide a response within 30 days of notification.

Section 106 consultation letters were sent to the following organizations as potential consulting parties:

- Office of Hawaiian Affairs
- Kauai Historic Preservation Review Commission
- Kauai-Niihau Island Burial Council
- Queen Deborah Kapule Hawaiian Civic Club
- Hookipa Network
- Historic Hawaii Foundation

The Kauai Historic Preservation Review Commission (HPRC) met on October 1, 2015 to discuss the project and provided comments (in form of meeting minutes) on October 28, 2015. The HPRC indicated they feel the crash-tested bridge railings do not appear visually similar to the existing bridge railing, and they requested that a more visually similar railing be crash tested and installed on the bridge. FHWA-CFLHD responded that this feedback would be considered, and explained that the national process to crash test and approve bridge railings for use on federally-funded highways takes years to accomplish. General questions were asked regarding the presence of archaeological sites, and Cultural Surveys Hawaii, Inc., the archaeological consultant for the project, discussed the surveys performed and lack of resources identified in the project areas and the ongoing consultation with SHPD.

The Historic Hawaii Foundation (HHF) met with representatives from the SHPD, FHWA, and the project team on February 9, 2016 to discuss the Hawaii Bridges Program part of ongoing consultation pursuant to the NHPA Section 106 and HRS Chapter 6E. At this meeting HHF requested that the feasibility of historic replication of the Hanapepe Bridge be evaluated for the project. The *Hanapepe Bridge Replication Analysis* study (May 2016) was prepared and concluded that true reconstruction or replication is not feasible for the Hanapepe Bridge.

We did not receive responses from any of the other organizations.

Request for Concurrence

We request your concurrence with the Area of Potential Effects and Determinations of Eligibility and Effects. We would appreciate a written response within 30 days from date of receipt, by email at Michael.will@dot.gov or by US Postal Service to 12300 West Dakota Avenue, Suite 380A, Lakewood, CO 80228-2583.

Please feel free to contact Nicole Winterton, Environmental Protection Specialist, at (720) 963-3689, email: nicole.winterton@dot.gov, if you have any questions. We look forward to working with the SHPO on these needed improvements.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Enclosures:

- Area of Potential Effects (USGS Map)
- Area of Potential Effects (Aerial Imagery)
- Determination of Effects Memorandum, including bridge plans
- On CD: Draft Archaeological Inventory Survey Report for the Hanapepe River Bridge Replacement Project, Hanapepe Ahupuaa, Waimea District, Kauai
- On CD: Hawaii SHPD Historic Resource Inventory Form (Reconnaissance Level) for Hanapepe Bridge
- Kauai HPRC Comments (October 28, 2015 meeting minutes of October 1, 2015 meeting)

cc (with enclosures on CD):

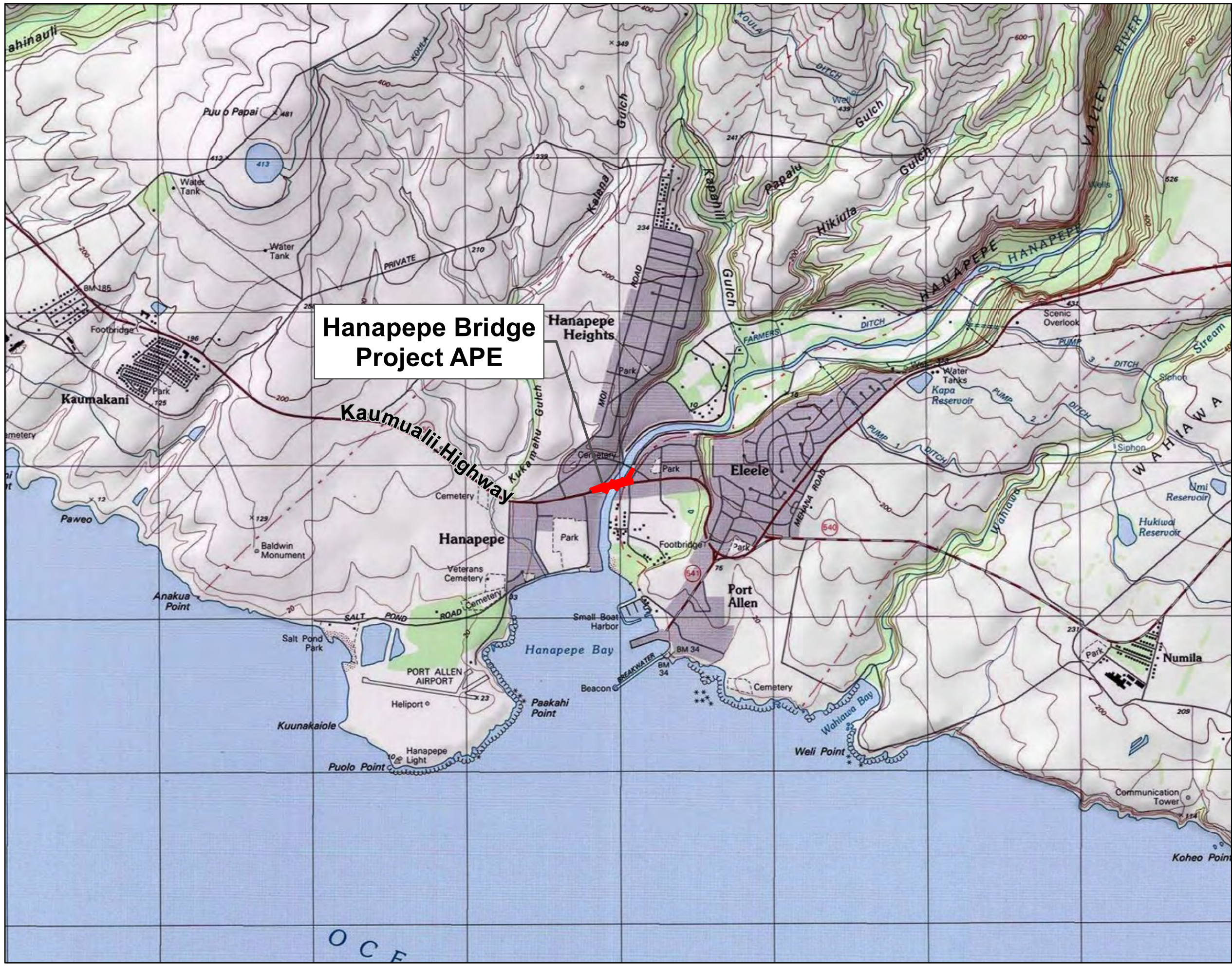
Christine Yamasaki, HDOT

Todd Nishioka, HDOT

Jessica Puff, SHPD

Susan Lebo, SHPD

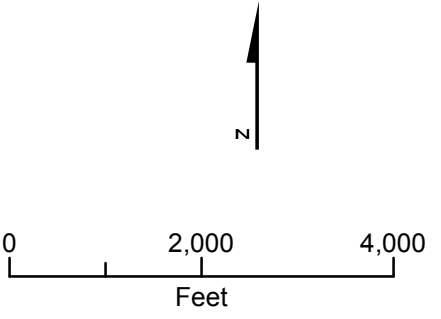
Mary Jane Naone, SHPD



Hanapepe Bridge Project APE

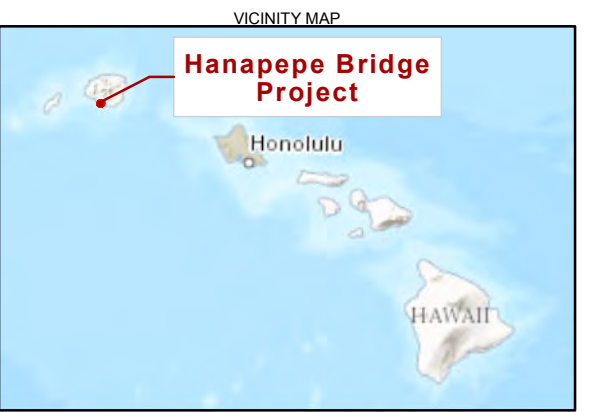
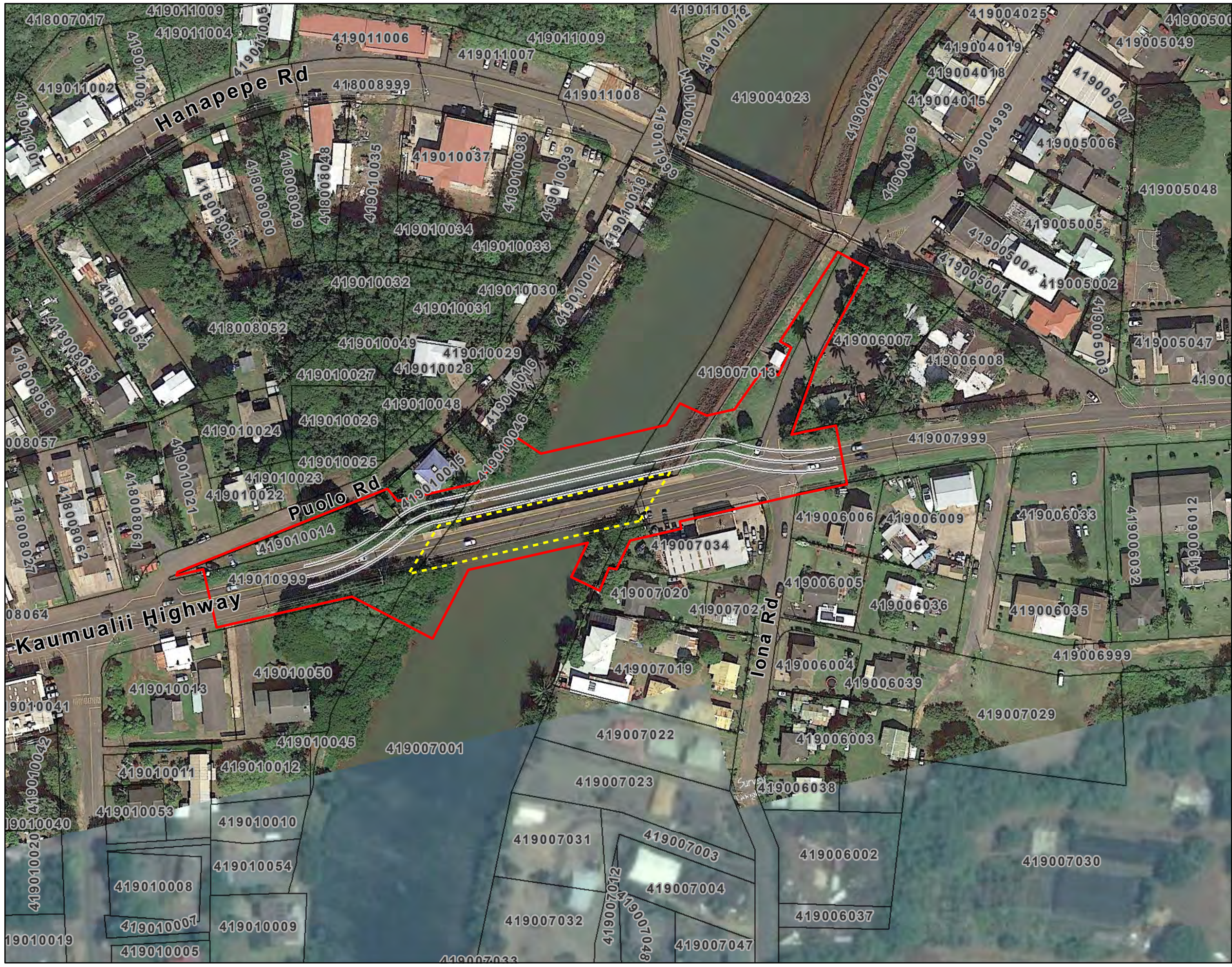


LEGEND
■ Area of Potential Effects

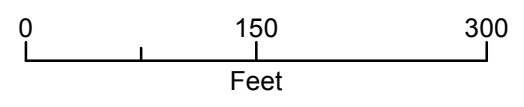


Notes:
 1. Imagery Source: ESRI USA Topographic Maps

**Hanapepe Bridge Project
 Area of Potential Effects (USGS Map)**
 Central Federal Lands - Waimea, Kauai



- LEGEND**
- Existing Bridge
 - Area of Potential Effects
 - TMK
 - Detour Route



- Notes:**
1. High-Res Imagery Source: Google Earth 12/16/2013
 2. Low-Res Imagery Source: Digital Globe 08/26/2011
 3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

Hanapepe Bridge Project
Area of Potential Effects (Aerial Imagery)
 Central Federal Lands - Kawaihau, Kauai
CH2MHILL

**NATIONAL HISTORIC PRESERVATION ACT, SECTION 106 CONSULTATION
HANAPEPE BRIDGE REPLACEMENT PROJECT**

WAIMEA DISTRICT, KAUAI ISLAND, HANAPEPE AHUPUAA
PROJECT NO. HI STP SR50(1)

TAX MAP KEY: (4)1-9-007: 001 HANAPEPE RIVER. (4)1-9-007: 013. (4)1-9-007: 999 KAUMUALII
HIGHWAY RIGHT OF WAY, (4)1-9-010: 015, (4)1-9-010: 999 KAUMUALII HIGHWAY RIGHT OF
WAY. (4)1-9-007:020, (4)1-9-007:034(por.), (4)1-9-010:014, (4)1-9-010:046, (4)1-9-010:050 (por.),
AND IONA ROAD RIGHT OF WAY.

DETERMINATION OF EFFECT

1.0 INTRODUCTION

The Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), in cooperation with the State of Hawaii Department of Transportation (HDOT) is proposing to replace the existing Hanapepe Bridge. The bridge is located at Kaumualii Highway (Route 50) at Mile Post 16.57. Kaumualii Highway at the project site is classified as an urban minor arterial and is the primary route to the Koloa District and the Waimea District.

The purpose of this project is to replace the existing Hanapepe Bridge to maintain the Kaumualii Highway crossing of Hanapepe River. The existing bridge was built in 1938. The bridge does not meet current standards for live loads, seismic, roadway widths, railings, and stream flows.

The proposed project would demolish the existing bridge and replace it with a three-span, shallow arch, wide flange girder bridge that reflects the aesthetics of the existing historic bridge. The proposed span length with arches is similar to the existing bridge.

The Historic Resource Inventory for the Hanapepe Bridge, prepared by Mason Architects, Inc. (MAI) in July 2015 and included in Appendix A of this report, determined that the bridge is eligible for listing on the National and Hawaii Register of Historic Places. The proposed bridge replacement project is considered a federal action and undertaking, and will comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (2006). MAI has been tasked with evaluating the effects of the undertaking on the historic resources within the APE. Concurrence with these findings will be confirmed in consultation with SHPD.

An “adverse effect” is defined in 36 CFR § 800.5(a)(1) as:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association...Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Examples of adverse effects.

Adverse effects on historic properties include, but are not limited to:

- (i) Physical destruction of or damage to all or part of the property;
- (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped

- access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- (iii) Removal of the property from its historic location;
 - (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
 - (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
 - (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
 - (vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.¹

Area of Potential Effect

The historic architectural Area of Potential Effects (APE) are illustrated in Figure 1 and includes both temporary and permanent impact areas.

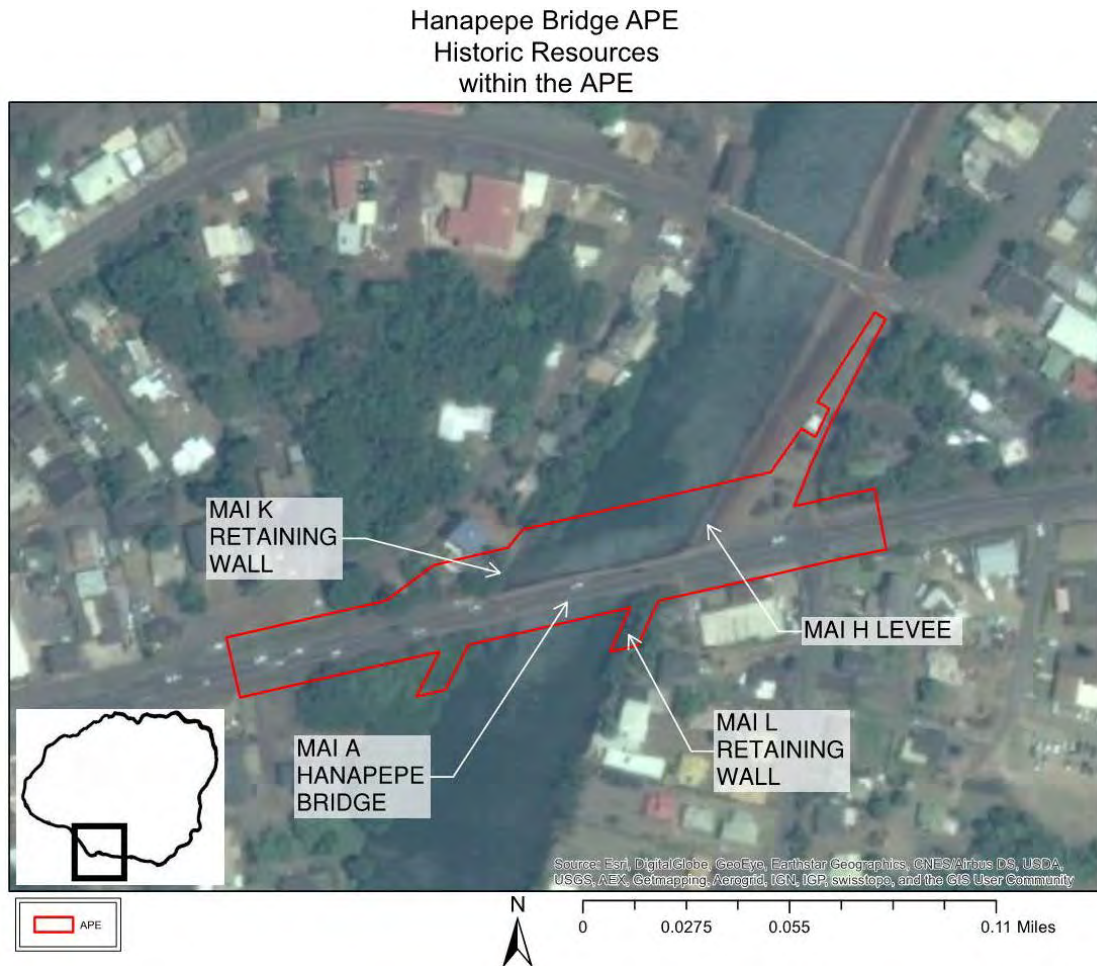


Figure 1: Area of Potential Effect, Hanapepe Bridge

¹ Advisory Council on Historic Preservation. *36 Code of Federal Regulations Part 800 – Historic Properties (incorporating amendments effective August 5, 2004)*.

2.0 HISTORIC AND CULTURAL RESOURCES

2.1 Summary of Historic and Cultural Properties within the APE

The Archaeological Survey Report prepared for Hanapepe Bridge by Cultural Surveys Hawaii, indicated that four cultural resources have been identified within the Area of Potential Effect (APE), the Hanapepe Bridge, one levee, and two retaining walls.

The Historic Resource Inventory Form (Mason Architects, July 2015) identified two historic resources within the APE that are eligible for listing on the National Register of Historic Places (National Register) and the Hawaii State Register of Historic Places (State Register), the Hanapepe Bridge (Hawaii State Inventory of Historic Places # 50-30-09-2280), and the ca. 1966 flood control levee (Hawaii State Inventory of Historic Places # 50-30-09-2283). Other historic resources not eligible for listing or located outside of the APE have been identified, and are summarized in the attached Historic Resource Inventory Form.

2.2 Identification of Historic Character-defining Features

The Secretary of the Interior's Standards for the Treatment of Historic Properties embody two important goals: 1) the preservation of historic materials and, 2) the preservation of a building's distinguishing character. Character refers to those visual aspects and physical features that comprise the appearance of every historic building. Character-defining elements include the type of construction, deck, railings and decorative features, alignment, width, as well as the various aspects of its site and environment.

Hanapepe Bridge

Primary historic character-defining architectural features of the Hanapepe Bridge:

- Setting is urban, low rise residential and small businesses.
- Channelized river upstream of the bridge with hardened (levee) left bank that protects historic Hanapepe Town.
- Concrete bridge construction with Greek cross openings in the parapet.
- Parapet stanchions with rectangular light fixtures facing the roadway.
- End stanchions are L shaped in plan with inscriptions and radiused end posts.
- Basket arch profile stringers spanning between piers and piers / abutments.
- Pedestrian walkways.

Secondary historic character-defining architectural features of the Hanapepe Bridge:

- Three span design.
- Concrete abutments and wing walls.

Missing or deteriorated historic character-defining features that could be restored or recreated.

- Historic light fixtures at stanchions.

Non-contributing features are typically built or added outside the historical period and are not considered to be historic character-defining. Non-contributing features that may be altered or removed without adversely affecting historic character:

- 3' high band of solid panels, outboard, across the upstream length of the bridge.

Ca. 1966 Left Bank Levee

Primary historic character-defining architectural features of the 2,200' long Left Bank Levee:

- Setting is urban, low rise residential and small businesses.
- Sloping earthen levee that protects historic Hanapepe Town.

- Rip rap-hardened sloping surface on inboard (river) side.
- Planted grass on earthen sloping surface of outboard (town) side.
- Approximate 3' high concrete wall topping the levee.

Secondary historic character-defining architectural features of the Left Bank Levee:

- Level pathway on both sides of concrete wall.
- Pathway is planted grass on outboard side, bare earth on inboard side.

3.0 PROPOSED PROJECT AND EFFECTS

3.1 Overview:

The proposed project would replace the existing Hanapepe Bridge, abutments, and piers to meet current standards for load capacity, pedestrian traffic, bridge railing and transitions, and bridge approaches

The proposed (two) options for replacement bridges have varying configurations of span and girder design, with the favored option for a three span shallow arch bridge. Both options are for bridges about 310' long, which is about 35' longer than the existing 275' long bridge. The new bridge will be wider, at 52', than the existing 36' wide bridge.

3.2 Discussion:

Setting:

Construction access and staging areas are represented within the APE. It is expected that construction activities will have no impact on the setting.

NO ADVERSE EFFECT: The proposed work is expected to be designed to avoid degradation of the environment and/or impacts to the stream and landscape.

New (Replacement) Bridge:

The existing, historic, 1938 concrete bridge will be demolished and replaced by a new, larger footprint concrete bridge.

ADVERSE EFFECT: Demolition of the historic Hanapepe Bridge does not meet the Secretary of the Interior's Standards for the Treatment of Historic Properties and 36 CFR 800 which calls out an adverse effect as physical destruction of or damage to all or part of the property. (Example i).

Left Bank Levee:

The existing levee, built ca. 1959 with ca. 1966 topping wall on the left bank upstream of the 1938 Hanapepe Bridge begins at the northeast wing wall of the bridge and extends about 380' northward to the 1911 Bridge and then continues north for a total length of about 2,200'. The levee is not continued at the southeast wing wall and does not extend south (makai) of the bridge. Due to the bridge's L shaped end stanchions, the overall width of the bridge abutments, between the wing walls, is about 42'-6". When the new, 52' wide, bridge is built its northeast abutment will remove about 6'-9" of the overall length of the levee.

A temporary, two-lane bypass road is proposed to be installed just *mauka* of the existing bridge using a temporary bridge structure to span the river. Preliminary plan drawings show this bypass as a 28' total width roadway that curves away from Kaunualii Highway just east of Iona Street. The bypass bridge will not affect the levee. The contractor will be required to bridge over the

levee and not impact it. Other than the 6'-9" length of levee to be removed, the existing bank of the levee and the concrete topping wall are to be retained and protected in place. The contractors undertaking the bridge work and/ or the bypass road will be responsible for protecting the levee. Any incidental damage to the levee will be repaired by those contractors, using salvaged, original material in the case of the rip rap bank, or in the case of the concrete wall, repaired in kind.

NO ADVERSE EFFECT: The levee is eligible for the NRHP for its association with community planning and the development of Hanapepe under Criterion A. It is not considered eligible under Criterion C because it lacks significance associated with engineering distinction. Because this eligibility is based on the association with an event, rather than engineering or structural qualities, the removal of a short, 6'-9" length of the levee from its overall total length of 2,200' would not adversely affect a characteristic that qualifies it for inclusion in the NRHP (CFR 800.5 [1]).

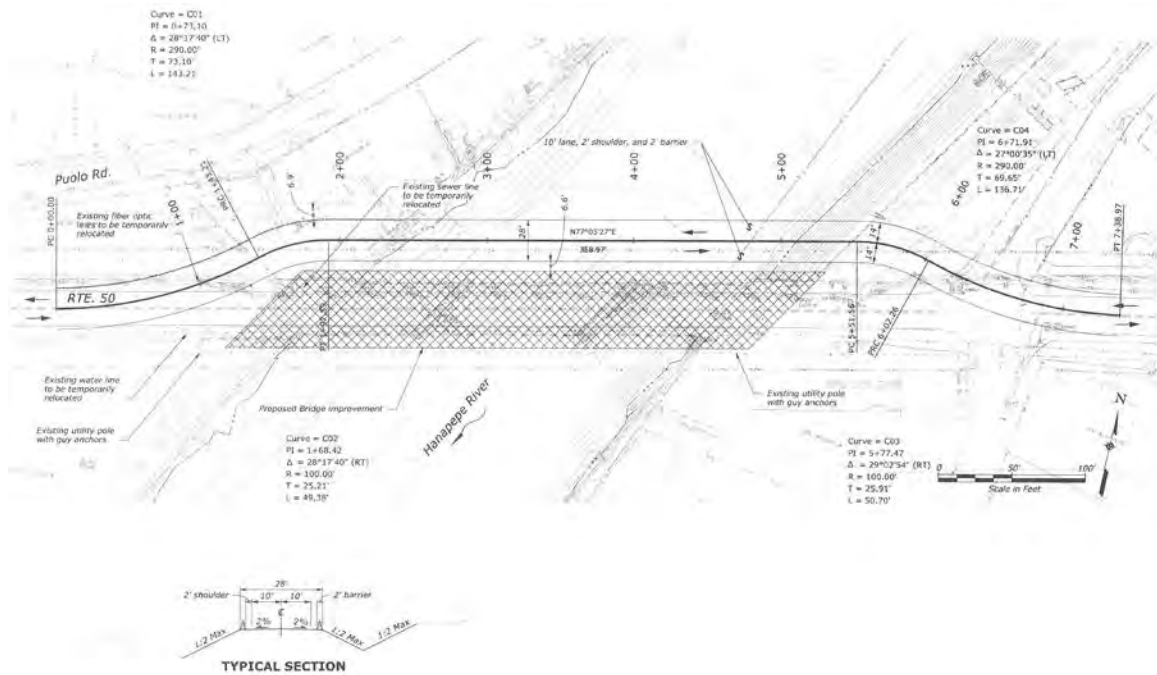


Figure 2: Preliminary drawing for Hanapepe Bridge replacement, showing the proposed area for the new bridge (crosshatch) and the bypass road.

4.0 SUMMARY DETERMINATION OF EFFECT

In summary, it is the opinion of the historical architects who reviewed the proposed project and have determined that the undertaking will result in an adverse effect to the Hanapepe Bridge since demolition of the bridge removes it from inclusion on the State or National Register of Historic Places. The project will have no adverse effect on the historic significance of the levee.

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 24, 2016

J. Michael Will
Federal Highways Administration
Central Federal Lands Highway Division
michael.will@dot.gov

IN REPLY REFER TO:
LOG NO: 2016.01305
DOC NO: 1608MN07
Archaeology
Architecture

Aloha Mr. Will:

**SUBJECT: Chapter 6E-8 and National Historic Preservation Act (NHPA) Section 106 Review -
Demolition and Replacement of Hanapepe River Bridge
Federal Highway Admin/Central Federal Lands Highway Div. Contract: DTFH68-13-R-00027
Hanapēpē Ahupua‘a, Kona District, Island of Kaua‘i
TMK: (4) 1-9-007: 001, 013, 020, 034 pors.; 1-9-010: 014, 015, 046, 050 pors.**

SHPD received your May 27, 2016 request for the State Historic Preservation Officer's (SHPO's) concurrence for NHPA Section 106 effect determination for the replacement of the Hanapēpē River Bridge. The project is an undertaking according to 36CFR§800.16(y), due to the provision of federal funding from the Federal Highway Administration (FHWA) and the Central Federal Lands Highway Division (CFLHD). The proposed project also is subject to review under Hawaii Revised (HRS) Statutes Chapter 6E-8.

The 2.9-acre area of potential effect (APE) is located along Kaumuali‘i Highway, near mile marker 16, where the highway crosses over the Hanapēpē River, and encompasses a portion of Iona Road as well as Kaumuali‘i Highway, which is owned by the State of Hawaii.

The project includes the demolition and replacement of the bridge (Site 50-30-09-2280) and the removal of a portion of the historic levee (Site 50-30-09-2283). The determination is "adverse effect on the Hanapepe River Bridge...and No Adverse Effect on the levee" per NHPA Section 106, and "Effect, with Agreed Upon Mitigation Commitments" per Hawaii Administrative Rules (HAR) §13-275-7.

A review of SHPD records indicates that the archaeological inventory survey report (Belluomini et al. 2016) completed by Cultural Surveys Hawai‘i, Inc. (CSH) for this project was reviewed and accepted with minor revisions on August 15, 2016 (Log No. 2016.01214, Doc No.1607MN17). A companion architectural study was conducted by Mason Architects, Inc.

The AIS identified two historic properties which were recommended as eligible for the National Register of Historic Places (NRHP): the Hanapēpē River Bridge (Site 50-30-09-2280), and an earthen/basalt berm or levee (Site 50-30-09-2283). Site 2280 was evaluated by Mason Architects as eligible for inclusion in the NRHP and the Hawaii Register of Historic Places (HRHP) under Criterion A (associated with events that have made a significant contribution to the broad patterns of our history) and Criterion C (embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction), and significant under HAR §13-275-6 Criteria a and c. They also evaluated the berm/levee (Site 2283) as eligible for inclusion in the NRHP and HRHP under Criterion A (associated with events that have made a significant contribution to the broad patterns of our history) and significant under HAR §13-275-6 Criterion a. The AIS report further states that while the project will adversely affect historic properties, thorough architectural documentation by Mason Architects

J. Michael Will
August 24, 2016
Page 2

serves as mitigation and, thus no further archaeological work is recommended. SHPD concurs with the site significance and determination of eligibility evaluations, and the recommendation of no further archaeological work.

The Federal Highway Administration and Central Federal Lands Highway Division conducted NHPA Section 106 consultation with consulting parties between August 29, 2015 and August 15, 2016. They state that comments from the Kaua'i Historic Preservation Review Commission regarding the replacement of the bridge railings were considered, but not feasible. Historic Hawaii Foundation (HHF) also requested that a feasibility study be conducted to consider whether Hanapepe Bridge could be historically replicated. The *Hanapepe Bridge Replication Analysis* study (May 2016) was prepared and concluded that replication was not feasible. The State Historic Preservation Division and Office of Hawaiian Affairs also recommended consulting parties. FHWA and CFLHD contacted these parties, and received no response.

In accordance with 36CFR§800.5, **the State Historic Preservation Officer (SHPO) concurs with the adverse effect determination** for the replacement and demolition of the bridge (Site 50-30-09-2280), and **“effect, with proposed mitigations” for both properties** (Site 50-30-09-2280 and Site 50-30-09-2283) in accordance with HAR§13-275-7.

However, the **SHPO has determined that removal of a portion of the levee is also an adverse effect**, as the levee (Site 2283) is eligible under criterion A and D, and the undertaking will “alter...characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, or association.”

SHPD looks forward to receipt of a Memorandum of Agreement (MOA) for the project that addresses both the bridge (Site 50-30-09-2280) and the earthen/rock berm/levee (Site 50-30-09-2283). Please contact Architectural Historian Jessica Puff at (808) 692-8023 or Jessica.L.Puff@hawaii.gov for questions related to architecture. Please contact Kaua'i Lead Archaeologist Mary Jane Naone at Maryjane.naone@hawaii.gov or at (808) 271-4940 if you have questions regarding archaeological concerns.

Aloha,



Alan S. Downer, Ph.D.
Administrator State Historic Preservation Division
Deputy State Historic Preservation Officer

cc.
Thomas Parker
Central Federal Lands Highway Division
Thomas.parker@dot.gov

Hallett Hammatt, Ph.D.
Cultural Surveys, Inc.
hhammatt@culturalsurveys.com

Trevor Yucha
Cultural Surveys, Inc.
tyucha@culturalsurveys.com

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE HAWAII STATE HISTORIC PRESERVATION OFFICER,
AND
REGARDING THE HANAPEPE BRIDGE REPLACEMENT PROJECT,
HANAPEPE AHUPUAA, WAIMEA DISTRICT, KAUAI ISLAND, HAWAII

WHEREAS, the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in partnership with the State of Hawai'i Department of Transportation (HDOT), has determined that the proposed undertaking to replace the Hanapepe River Bridge will have an *adverse effect* on the historic bridge (State Inventory of Historic Properties [SIHP] #50-30-09-2280), a property eligible for inclusion in the National Register of Historic Places. The Hanapepe Bridge is located on Hawai'i State Highway 50 (HI-50), also known as Kaunualii Highway at Mile Post (MP) 16.57 on the Island of Kauai, Hawai'i.

WHEREAS, FHWA has consulted with the Hawai'i State Historic Preservation Officer (SHPO) pursuant to 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (54 USC 306108); and

WHEREAS, FHWA has established the undertaking's area of potential effects (APE), as defined at 36 CFR 800.16(d), in consultation with the SHPO and consulting parties; the 2.9-acre APE includes temporary and permanent impact areas including the following Tax Map Keys: (4)1-9-007:001 Hanapepe Canal, (4)1-9-007:013, (4)1-9-007:034, (4)1-9-007 Kaunualii Highway Right-of-way, (4)1-9-010:0015, (4)1-9-010:014, (4)1-9-010:046, (4)1-9-010:050, (4)1-9-010 Kaunualii Highway Right-of-Way (Attachment 1); and

WHEREAS, the Hawai'i SHPO has reviewed and concurred with the evaluations and recommendations in the following referenced materials: (1) *Final Archaeological Inventory Survey Report for the Hanapepe River Bridge Replacement Project, Hanapepe Ahupuaa, Waimea District, Kauai* (March 2016); and (2) *Hawaii SHPD Historic Resource Inventory Form (Reconnaissance Level) for Hanapepe Bridge* (November 2014).

WHEREAS, in accordance with 36 CFR 800.6(a)(1), FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation, and in a letter dated August 10, 2016, the ACHP has elected not to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii); and

WHEREAS, FHWA has consulted with HDOT regarding the effects of the undertaking on historic properties and has invited HDOT to be a concurring party to this Memorandum of Agreement (MOA); and

WHEREAS, FHWA sent letters describing the undertaking and inviting participation to the Office of Hawaiian Affairs, Kauai Historic Preservation Review Commission (HPRC), Kauai-Niihau Island Burial Council, Queen Deborah Kapule Hawaiian Civic Club, Hookipa Network, and Historic Hawai'i Foundation (HHF); HPRC and HHF accepted the invitation to be consulting parties and provided comments on the Project. All other organizations contacted did not respond; and

WHEREAS, HPRC and HHF requested participation in Section 106 consultation and have been consulted and invited to be concurring parties to this MOA; and

NOW, THEREFORE, FHWA and the Hawai‘i SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

The FHWA shall ensure that the following stipulations are carried out:

I. MITIGATION MEASURES

- A. The project requires a small portion of the historic United States Army Corps of Engineers floodwall (SIHP # 50-30-09-2283) to be removed. This action will be conducted using construction methods that would not compromise the overall integrity of the resource by ensuring the area where material is removed is left structurally stable and repaired with in kind materials.
- B. FHWA shall consult with the National Park Service HABS/HAER/HALS (HHH) Coordinator in the Pacific West Regional Office as to the required type and level of HHH documentation and on the guidelines and protocols for submission.
- C. FHWA shall ensure that all documentation activities will be performed or directly supervised by architects, historians, photographers and/or other professionals meeting the minimum qualifications in their field as specified in the Secretary of Interior's Professional Qualifications Standards (36 CFR 61; Appendix A).
- D. FHWA shall provide originals of all records resulting from the documentation to the National Park Service.
- E. Prior to construction completion, FHWA shall develop and install interpretation materials (i.e sign/kiosk) for the Hanapepe River Bridge project. The interpretive materials will include a summary of the history of the Hanapepe Valley including but not limited to: A discussion of Native Hawaiian history within the area; Hanapepe Town; a summary of the HAER documentation for the Hanapepe River Bridge (SIHP # 50-30-09-2280) as well as its role in the development in Hanapepe Town; The Hanapepe River watershed; Agriculture within the Hanapepe Valley; and a summary of the HAER documentation for the Hanapepe River levee (SIHP # 50-30-09-2283). The FHWA will prepare the interpretive materials and will consult with the SHPD and consulting parties during the development of such materials. FHWA shall develop an outline, which summarizes the contents of the interpretive materials to be developed, and will hold a scoping meeting with the SHPD, consulting parties, and local community prior to interpretive material development. This scoping meeting will also provide an opportunity for the collection of oral history to be included within the interpretive materials. Two draft interpretive material reviews with the SHPD and consulting parties will be conducted at 50% and 90% complete milestones. The SHPD and consulting parties will be afforded 30 days to review and comment on the design and content of the interpretive materials. The locations of the interpretative signage/kiosk have yet to be determined. FHWA will coordinate with the SHPD and consulting parties to identify an appropriate site for installing the interpretive sign/kiosk materials.
- F. FHWA will salvage character defining features of the Hanapepe River Bridge (SIHP # 50-30-09-2280) including a segment of the Greek cross rail with lights and a Bridge end post/monument.

FHWA will make every attempt to salvage a Bridge end post/monument that has the bridge name and/or date. FHWA will reduce the number of saw cuts during the material salvage by cutting material at natural breaks within the structure. FHWA will stockpile and protect salvaged material throughout construction with the intent to incorporate it as part of the interpretive signage/kiosk area.

- G. FHWA shall prepare and provide a complete set of As-Built drawings for the Hanapepe River Bridge to the SHPD and consulting parties following project completion and construction closeout.
- H. FHWA shall prepare a formal MOA closeout memorandum which documents compliance with all stipulations included in this MOA. The SHPD and consulting parties will be afforded 30 days to review and comment on the content of the formal MOA closeout memorandum.

II. BRIDGE REPLACEMENT

- A. FHWA-CFLHD proposes to replace the existing bridge to meet current standards for load, capacity and seismicity. The replacement bridge would include the following activities:
 - 1. The new bridge will be a three-span, shallow arch, girder bridge which reflects the aesthetics and historic character of the existing structure.
 - 2. The new bridge will be longer than the existing bridge—increasing in length from 275 feet to approximately 308 feet.
 - 3. The new bridge will be wider than the existing bridge—increasing in width from 36 feet to approximately 52 feet.
 - 4. The existing vertical bridge abutments are currently located within the main channel. The existing abutments would be demolished and removed. New abutments will be constructed behind the location of the existing abutments and set back from the main channel, thereby avoiding interference with the existing foundation and adding additional conveyance of flood waters under the bridge.
 - 5. The proposed horizontal and vertical roadway alignments will closely match existing conditions as roadway profile changes would impact the adjacent properties along the roadway approaches to the bridge.
 - 6. The project will include two retaining walls on the west end of the bridge. Based on preliminary design, the wall on the mauka side would measure approximately 110 feet long, and the wall on the makai side approximately 55 feet long.
- B. FHWA shall replace the bridge consistent with design plans previously furnished to SHPO on May 11, 2016 (Attachment 2). Deviations and/or design refinements on intermediate stanchions and end stanchions shall be consulted with SHPO and consulting parties as design is finalized.
 - a. Prior to rehabilitation, FHWA shall provide the State Historic Preservation Division (SHPD) redline copies of the bridge replacement plans for review and approval. SHPD shall provide written concurrence or comments with the drawings within 30 days of receipt.
 - b. Prior to the bridge contractor's notice to proceed, FHWA will provide SHPD

final drawings of the bridge for approval. SHPD shall provide written concurrence or comments with the drawings within 30 days of receipt.

- C. Any historic properties directly adjacent to the APE, including SIHP # -2283 (Levee), shall be avoided and appropriately protected in place with construction fencing for the duration of the replacement project.
- D. At the completion of the bridge construction and thirty (30) days after final as-built drawings are received by FHWA as directed by the project specifications, FHWA shall provide as-built drawings to SHPO and concurring parties to document the completion of the rehabilitation.

III. DISPUTE RESOLUTION

Should any party to this MOA object to the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection(s) cannot be resolved, the FHWA will:

- A. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to the ACHP. The ACHP shall provide FHWA with its advice on the resolution of the objection within thirty (30) days of receiving documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and signatories and concurring parties, and provide them with a copy of this written response. FHWA will then proceed according to its final decision.
- B. Make a final decision regarding the dispute and proceed accordingly if the ACHP does not provide its advice regarding the dispute within the forty five (45) day time period. Prior to reaching a final decision, the FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
- C. Be responsible to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute.

IV. AMENDMENTS

Any signatory, invited signatory, or concurring party to this MOA may request that it be amended, whereupon the parties shall consult in accordance with 36 CFR Part 800 to consider such amendment. Any such amendment shall be effective on the date a fully executed copy is filed with the ACHP. If the signatories cannot agree to the appropriate terms to amend the MOA, any signatory may terminate consultation on the proposed amendment in accordance with Stipulation V, below.

V. DURATION

The terms of this MOA shall be satisfactorily fulfilled within five (5) years from the execution of the MOA, unless amended pursuant to Stipulation IV or terminated pursuant to Stipulation VI of this MOA. Prior to such time, FHWA may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation IV.

This MOA shall take effect on that date it has been executed by FHWA and the SHPO.

VI. TERMINATION

- A. If any signatory or invited signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation IV, above. If, within thirty (30) days, an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.
- B. Within thirty (30) days following termination and prior to work continuing on the undertaking, the FHWA shall notify the signatories if it will initiate consultation to execute an MOA with the signatories under 36 CFR 800.6(c)(1) or request the comments of the ACHP under 36 CFR 800.7(a) and proceed accordingly.

VII. ANTI-DEFICIENCY ACT

- A. This agreement shall be subject to available funding, and nothing in this agreement shall bind the FHWA to expenditures in excess of funds appropriated and allotted for the purposes outlined this agreement.

VIII. EXECUTION

Execution of this MOA by FHWA and SHPO and the submission of documentation and filing of this MOA with the ACHP pursuant to 36 CFR 800.6(b)(1)(iv) prior to FHWA approval of this undertaking, and implementation of its terms, is evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

The following are identified as parties to this MOA:

Signatories:

Federal Highway Administration, Central Federal Lands Highway Division
State Historic Preservation Officer

Concurring Parties:

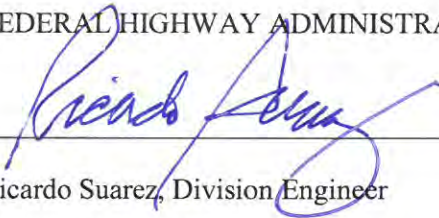
State of Hawai'i, Department of Transportation
Historic Hawai'i Foundation
Kauai Historic Preservation Review Commission

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE HAWAI'I STATE HISTORIC PRESERVATION OFFICER,
AND
REGARDING THE HANAPEPE BRIDGE REPLACEMENT PROJECT,
HANAPEPE AHUPUAA, WAIMEA DISTRICT, KAUAI ISLAND, HAWAI'I

Signatory

FEDERAL HIGHWAY ADMINISTRATION, CENTRAL FEDERAL LANDS HIGHWAY DIVISION



Ricardo Suarez, Division Engineer

Date 8/25/16

SIGNATORY PAGE

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AMONG
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AND
REGARDING THE HANAPEPE BRIDGE REPLACEMENT PROJECT,
HANAPEPE AHUPUAA, WAIMEA DISTRICT, KAUAI ISLAND, HAWAI'I

Signatory

HAWAI'I STATE HISTORIC PRESERVATION OFFICER

Alan S Downer

Date 8/24/2016

Alan S. Downer, PhD, Deputy State Historic Preservation Officer

CONCURRING PARTY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE HAWAI'I STATE HISTORIC PRESERVATION OFFICER,
AND
REGARDING THE HANAPEPE BRIDGE REPLACEMENT PROJECT,
HANAPEPE AHUPUAA, WAIMEA DISTRICT, KAUAI ISLAND, HAWAI'I

CONCURRING PARTY:

STATE OF HAWAI'I, DEPARTMENT OF TRANSPORTATION

_____ Date _____
Ford N. Fuchigami, Director of Transportation

CONCURRING PARTY PAGE

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AMONG
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HANAPEPE AHUPUAA, WAIMEA DISTRICT, KAUAI ISLAND, HAWAI'I

CONCURRING PARTY:

HISTORIC HAWAI'I FOUNDATION

_____ Date _____
Kiersten Faulkner, Executive Director

CONCURRING PARTY PAGE

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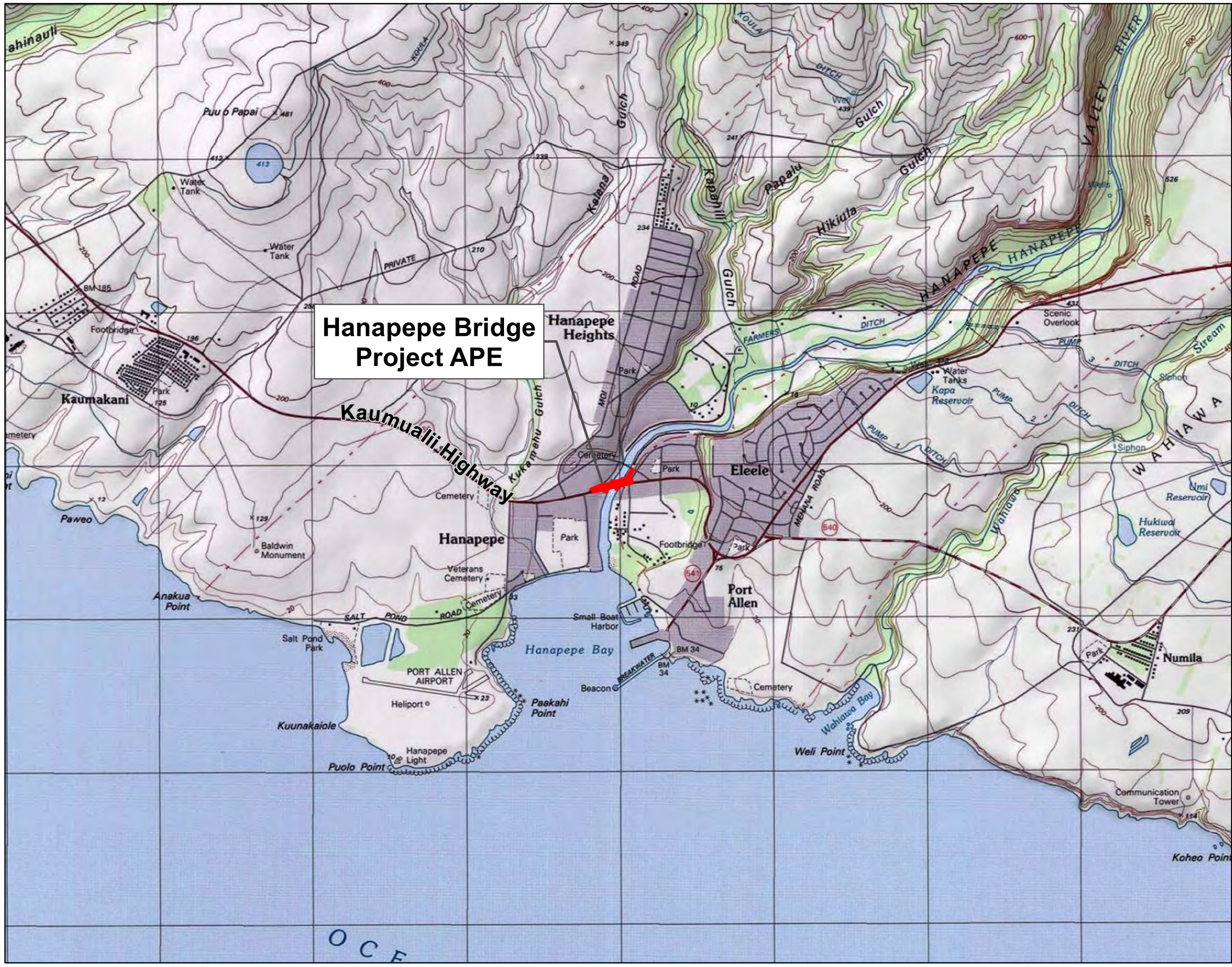
CONCURRING PARTY:

KAUAI HISTORIC PRESERVATION REVIEW COMMISSION

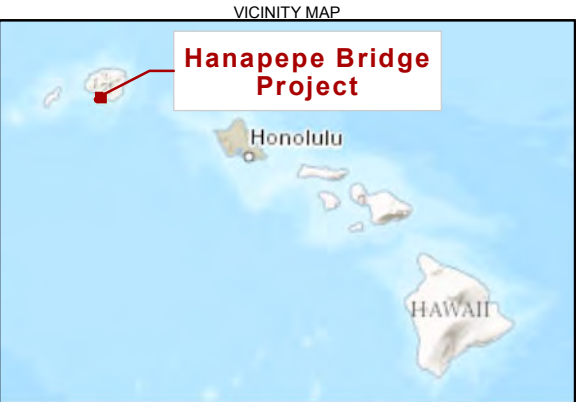
_____ Date _____
Steven Long, Chairperson

Attachment 1

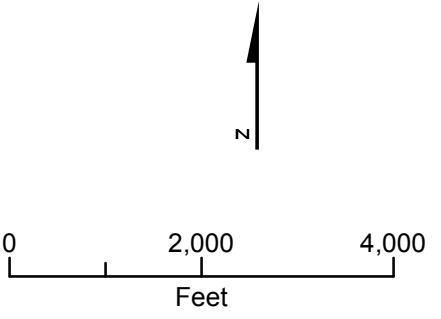
Hanapepe Bridge Replacement Project Area of Potential Effects



Hanapepe Bridge Project APE

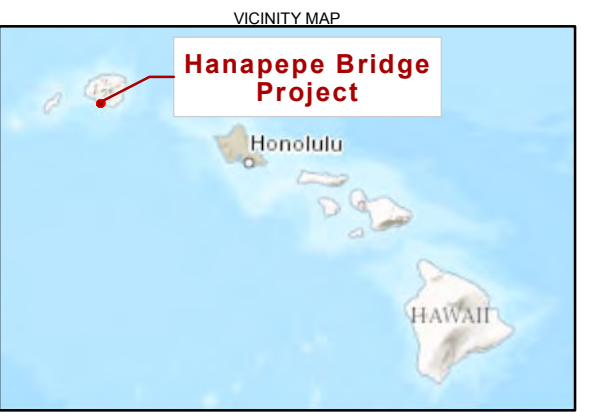
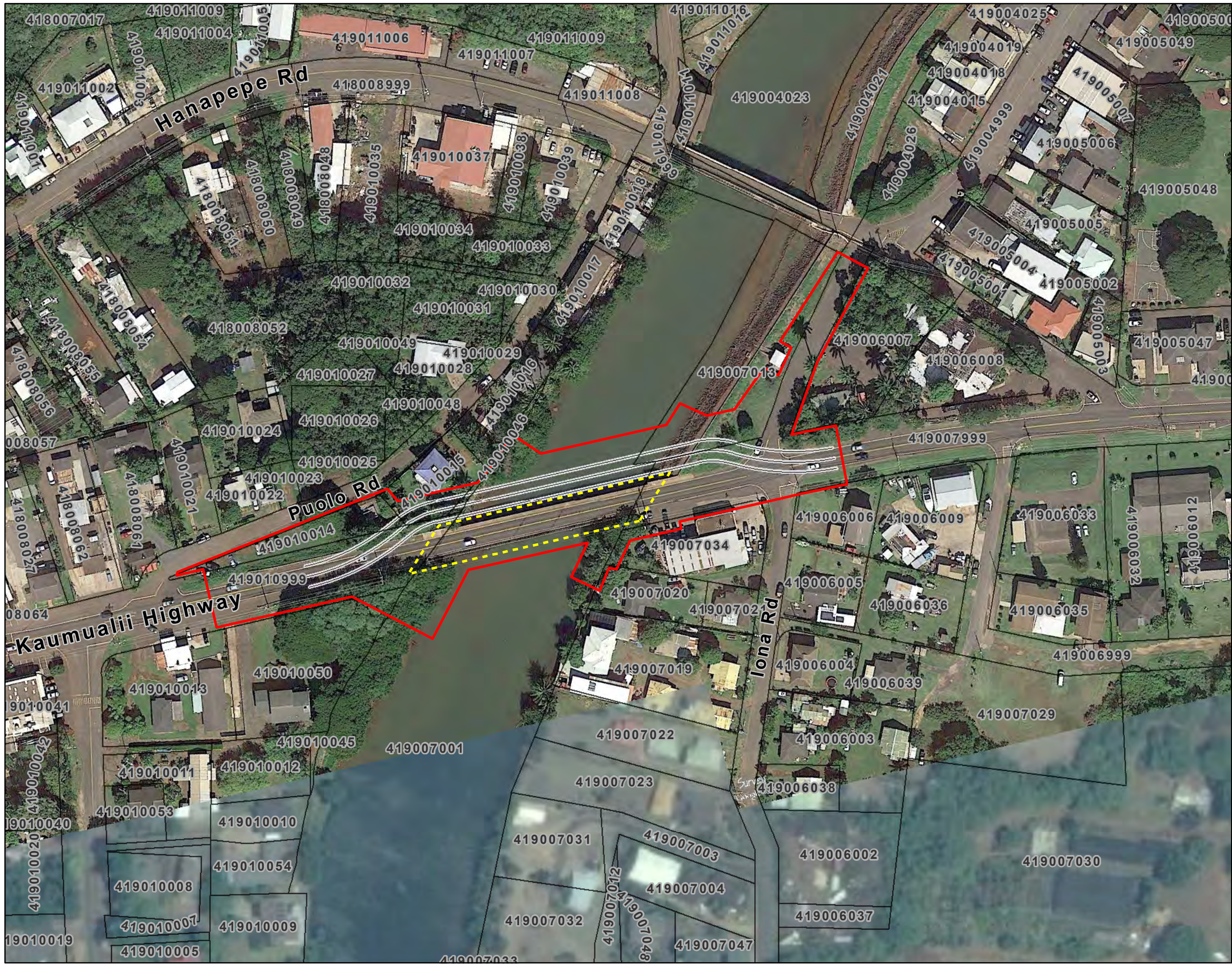


LEGEND
■ Area of Potential Effects

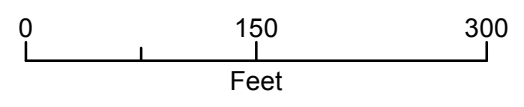


Notes:
 1. Imagery Source: ESRI USA Topographic Maps

**Hanapepe Bridge Project
 Area of Potential Effects (USGS Map)**
 Central Federal Lands - Waimea, Kauai



- LEGEND**
- Existing Bridge
 - Area of Potential Effects
 - TMK
 - Detour Route

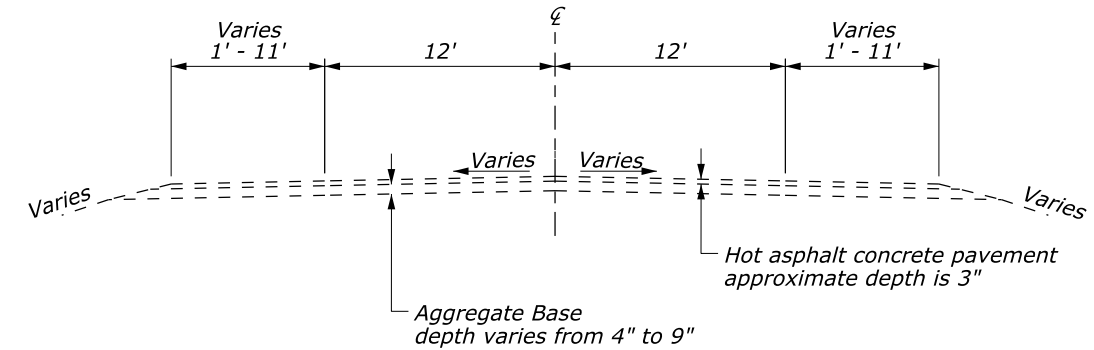


- Notes:**
1. High-Res Imagery Source: Google Earth 12/16/2013
 2. Low-Res Imagery Source: Digital Globe 08/26/2011
 3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

Hanapepe Bridge Project
Area of Potential Effects (Aerial Imagery)
 Central Federal Lands - Kawaihau, Kauai
 CH2MHILL

Attachment 2

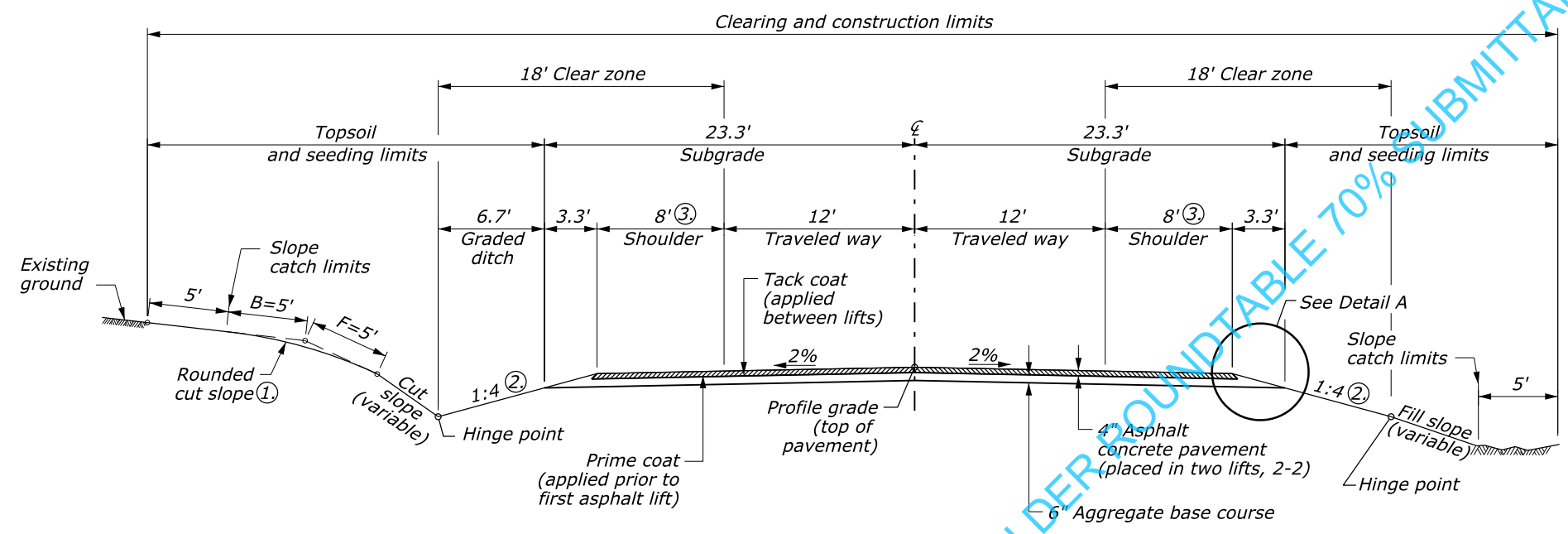
Hanapepe Bridge Replacement Design



EXISTING TYPICAL SECTION
204+65.71 TO 210+20.20

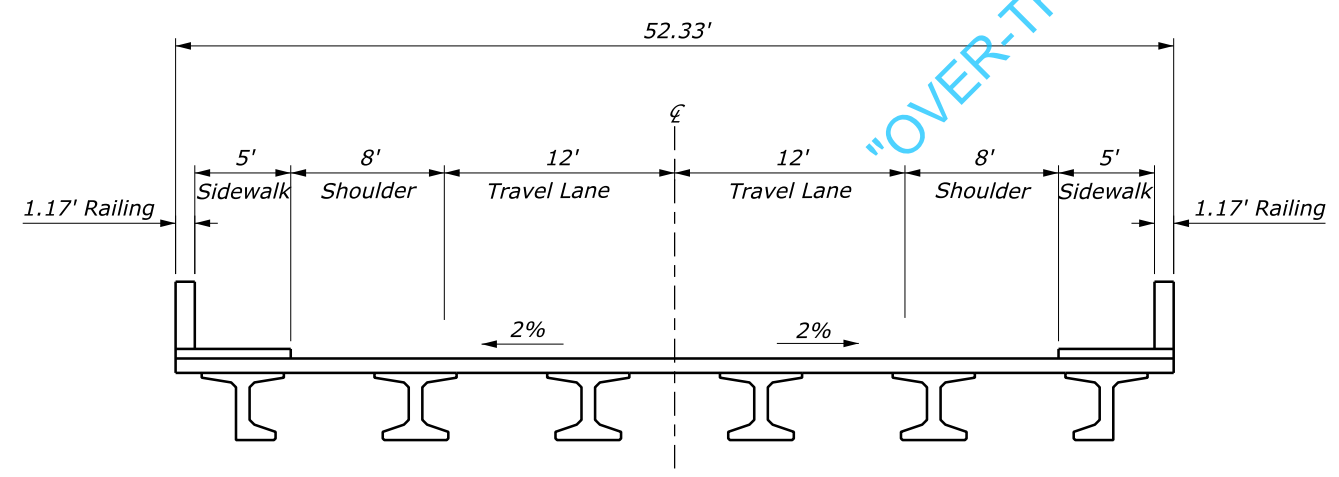
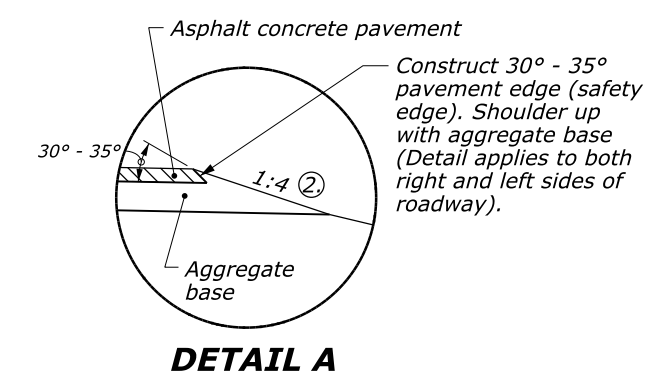
LENGTH OF PROJECT		
Station to Station	Roadway (ft)	Bridge (ft)
204+65.71 TO 210+20.20	241	314
TOTALS (ft)	241	314
TOTAL (mi)	0.05	0.06

- NOTES:**
- Round all earth slopes and all rippable rock slopes. For cut heights less than B, reduce the B and F dimensions to the actual cut height.
 - See Slope Table for non typical 1:4 cut and fill slope ratios.
 - Shoulder varies 7.3' to 13' to match existing at end of project.

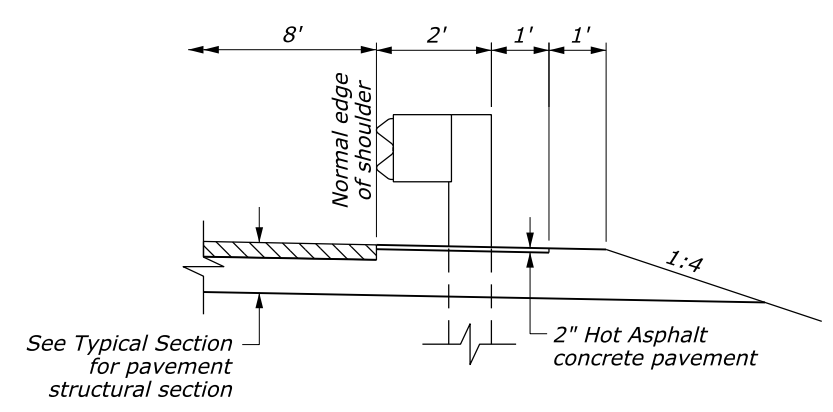


TYPICAL SECTION
204+65.71 TO 205+62.86
208+76.38 TO 210+20.20

SLOPE TABLE	
Station to Station	Slope
204+65.71 to 205+17.99	1:2 Fill - Lt.
209+30.00 to 209+40.00	1:2 Cut - Lt.



BRIDGE TYPICAL SECTION
205+62.86 TO 208+76.38



GUARDRAIL DETAIL

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY

TYPICAL SECTIONS

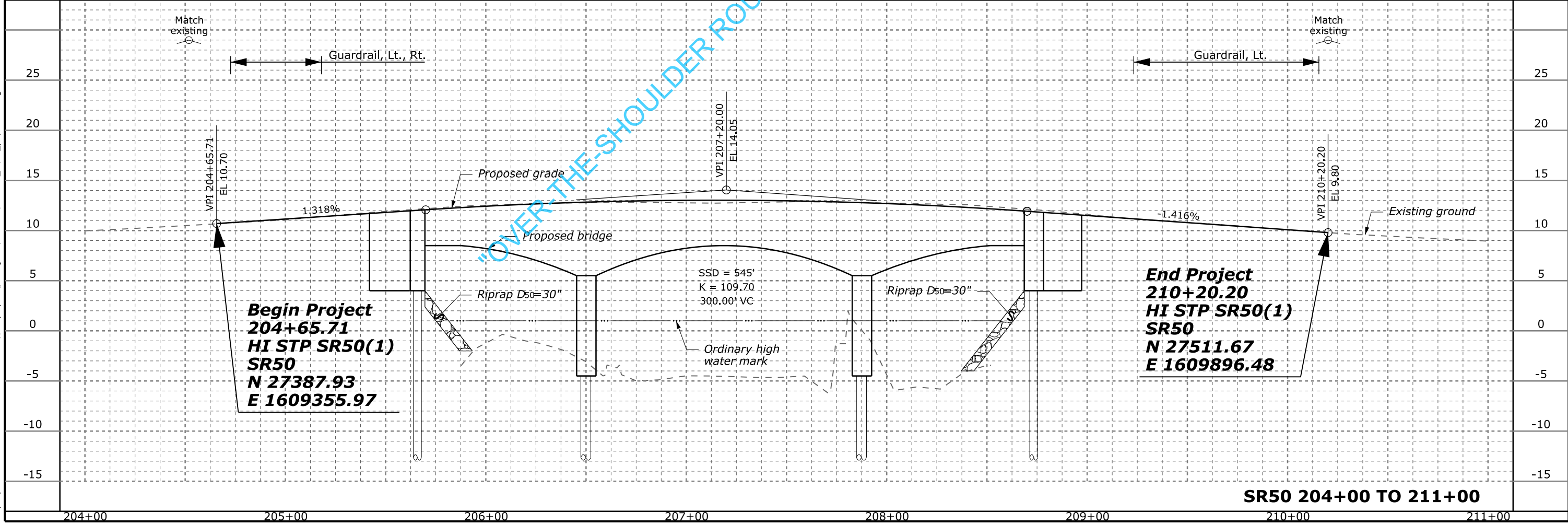
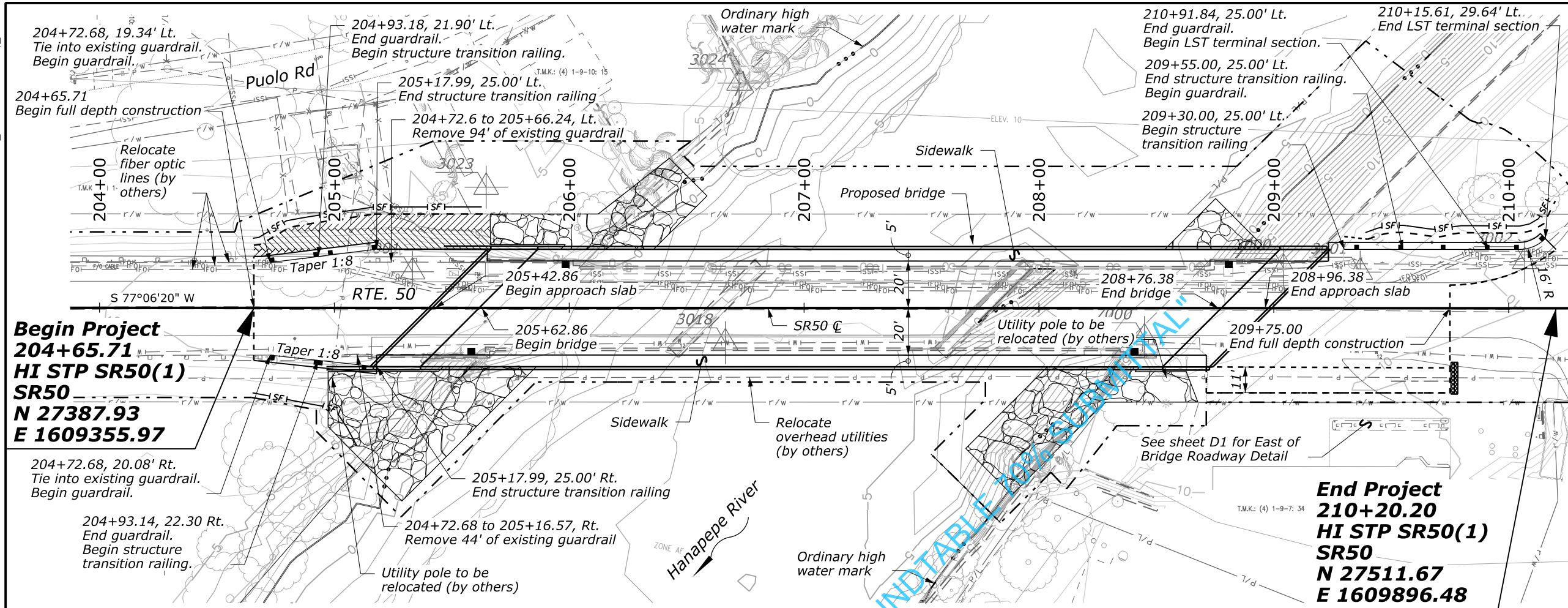
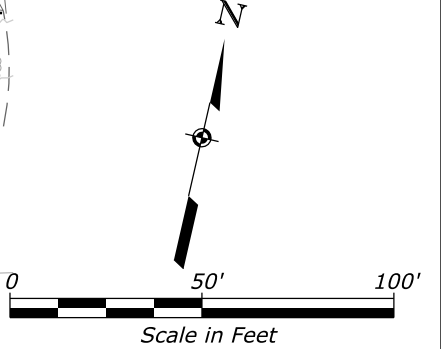
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OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NO.
HI	HI STP SR50(1)	C1

- NOTES:**
1. See S Series for bridge plan, profile and details.
 2. See G Series for riprap limit and sizes.
 3. Replace existing signage, pavement markings, and raised pavement markers in kind.
 4. Provide a stabilized construction exit properly placed for the staging and construction areas. Coordinate placement with the CO. Alternative types may be considered to better suit site conditions.
 5. Erosion and sediment control features shown not to scale.
 6. See T Series for waterline and sewer line relocations.

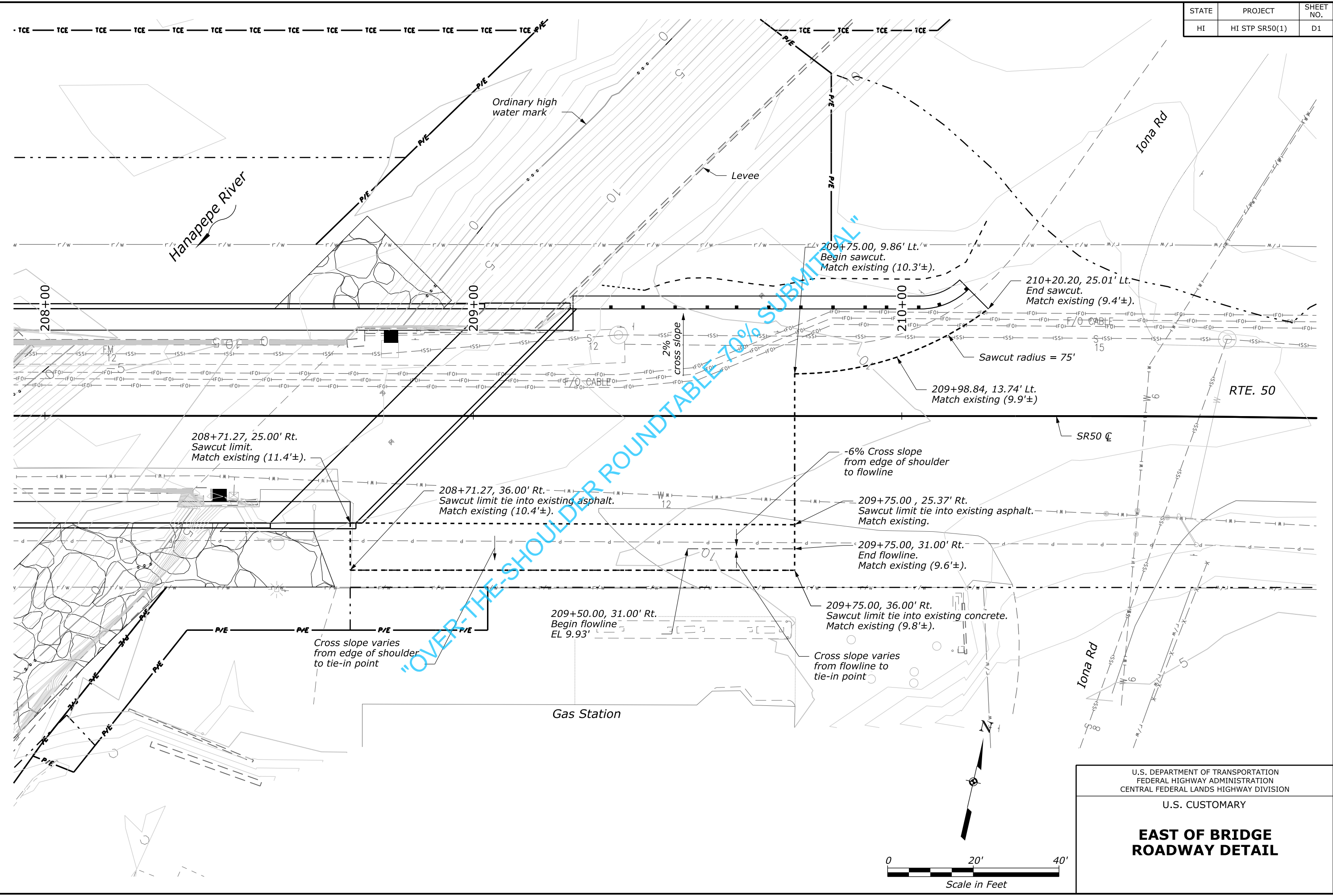


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OVER-THE-SHOULDER ROUND-TABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NO.
HI	HI STP SR50(1)	D1

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"OVER-THE-SHOULDER ROUNDABOUT" 70% SUBMITTAL

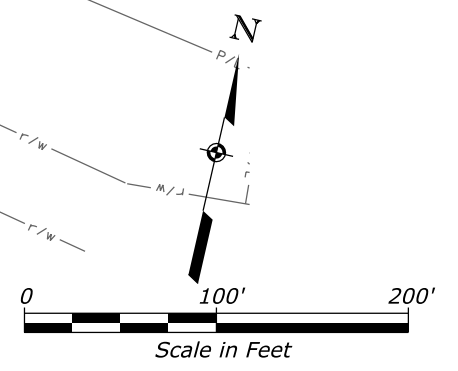
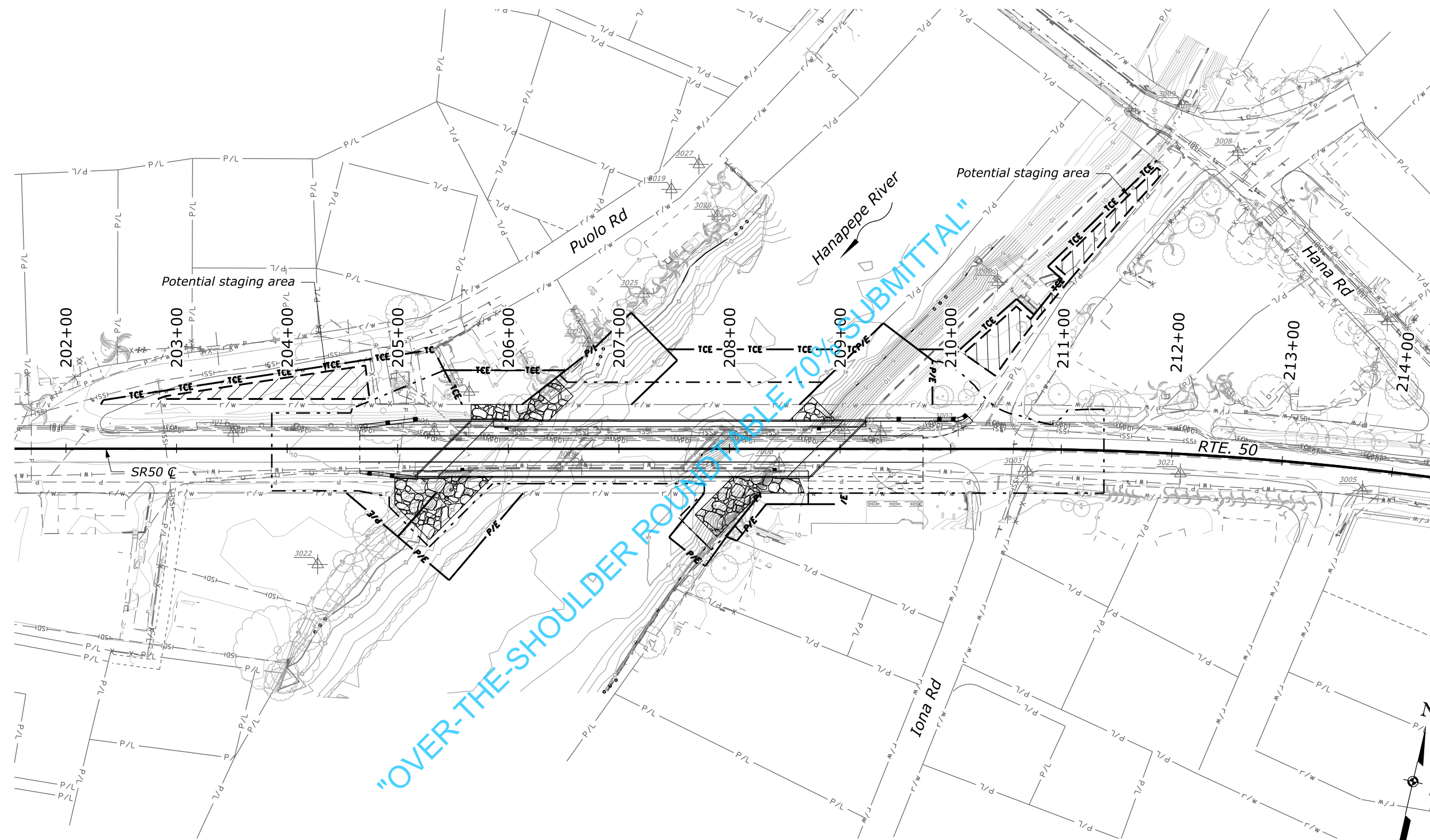
U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

 U.S. CUSTOMARY

**EAST OF BRIDGE
 ROADWAY DETAIL**

OVER-THE-SHOULDER ROUNDABOUT 70% SUBMITTAL - NOT FOR CONSTRUCTION

STATE	PROJECT	SHEET NO.
HI	HI STP SR50(1)	D2



U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

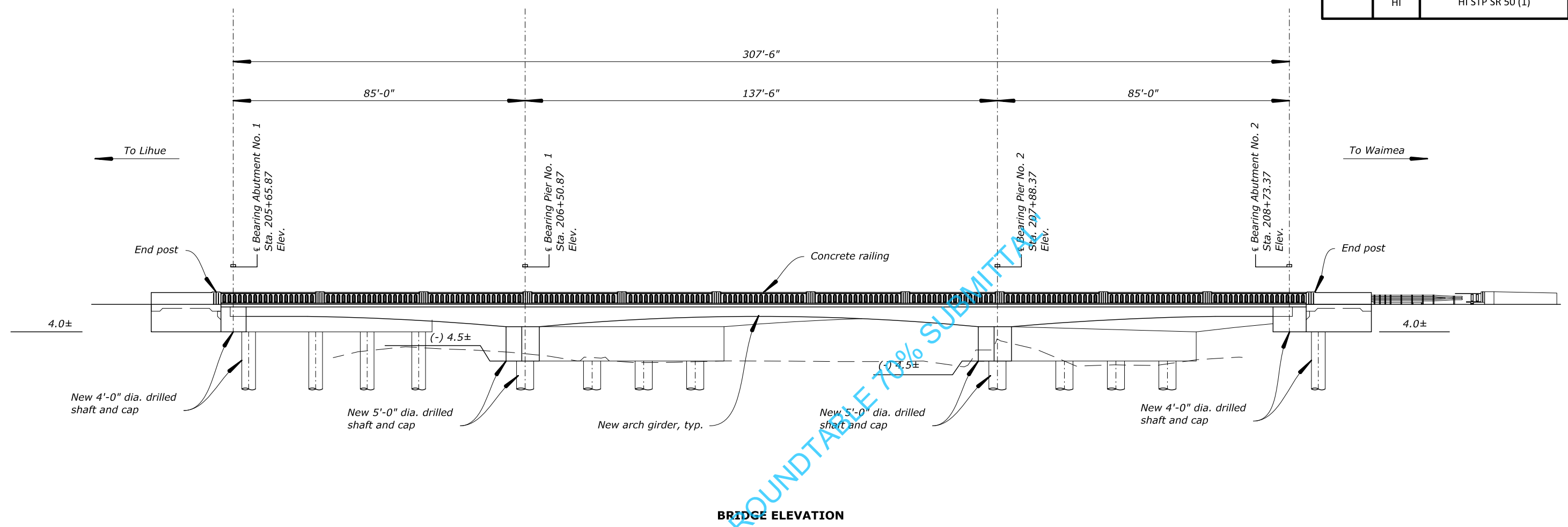
U.S. CUSTOMARY

STAGING AREA PLAN

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OVER-THE-SHOULDER ROUND TABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S2.2



BRIDGE ELEVATION

"OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

 KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

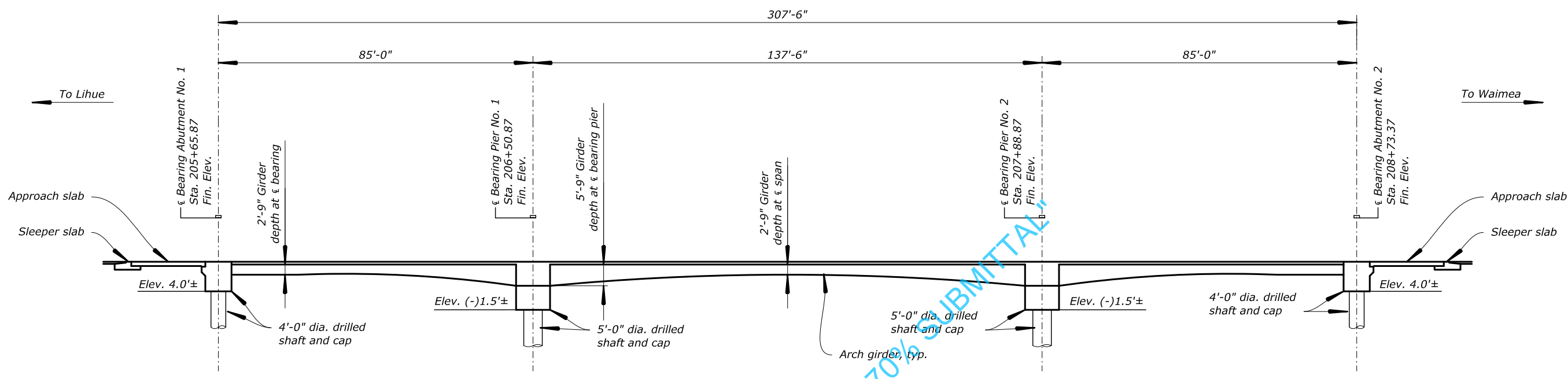
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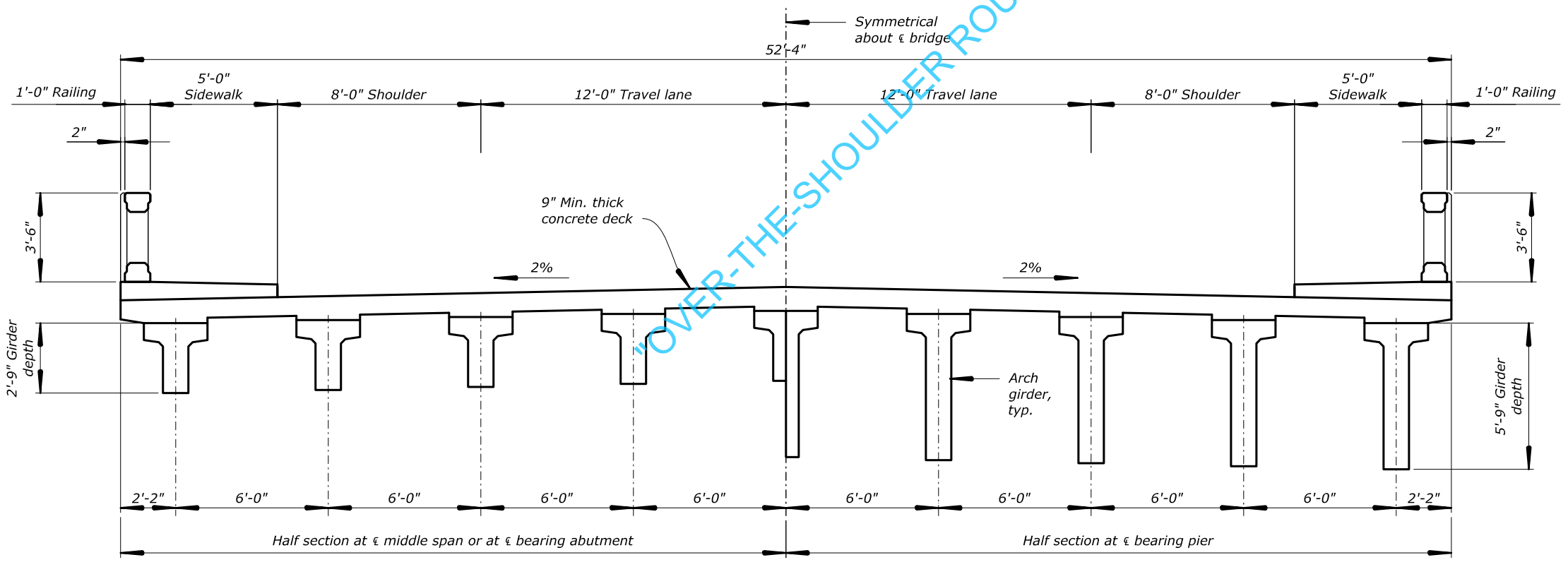
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								E. MATSUMOTO	C. TANABE	D. FUJIWARA	1"=30'-0"	D. FUJIWARA	S2.2 of 24	NOVEMBER 2015	RG3080-E

OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S2.3



BRIDGE LONGITUDINAL SECTION
Scale: 1"=30'-0"



BRIDGE CROSS SECTION
Scale: 3/16"=1'-0"

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

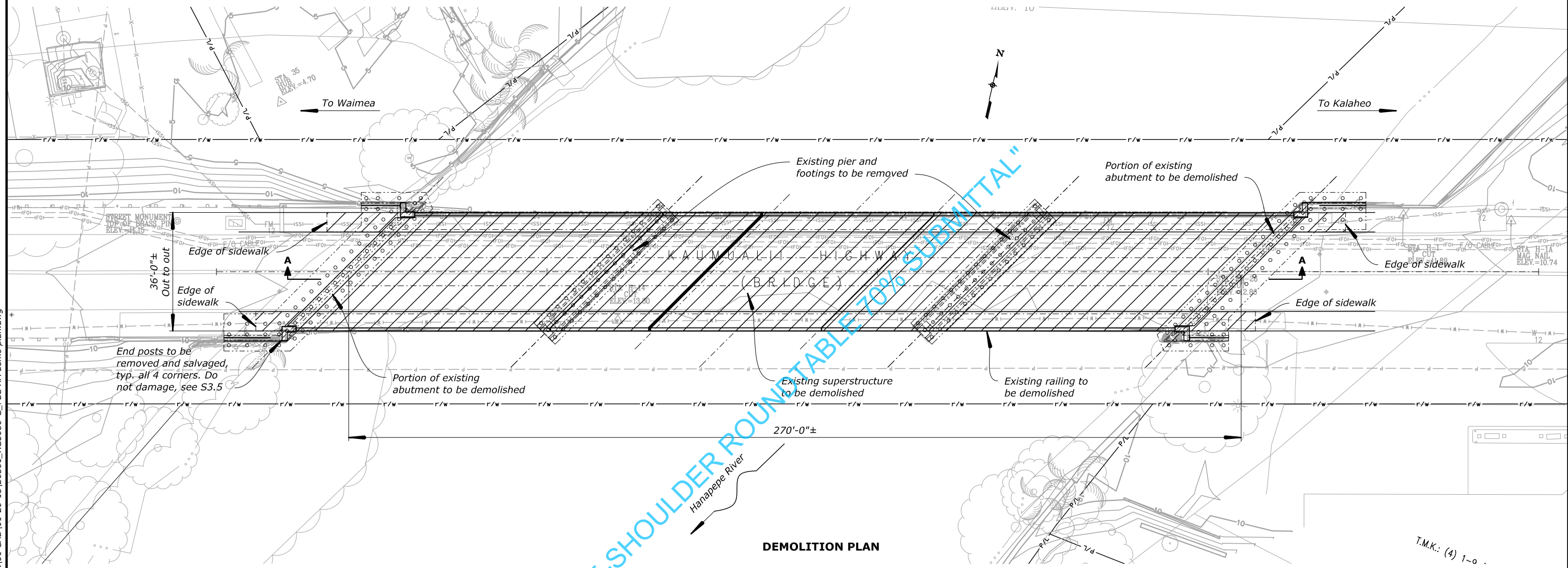
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
OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S3.1



Note:
See sheet S3.2 for section/elevation "A-A".

Legend:

 Demolition of existing bridge which includes the superstructure, railings, guardrails, sidewalk, portion of abutment stem, rocker bearings, walls, piers, and pier footings. Piles underneath pier footing to remain. End posts to be removed but not damaged. Salvaged end posts will be relocated.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

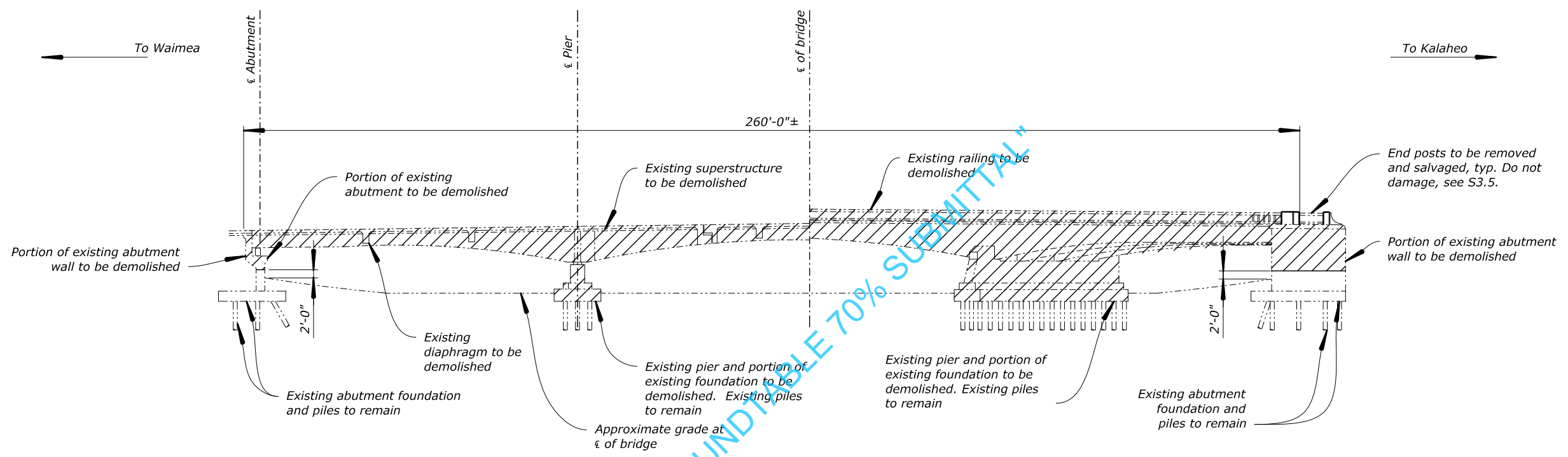
DEMOLITION PLAN

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OVER-THE-SHOULDER ROUND TABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION


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								S. PETERS	V. TAKAGAKI	D. FUJIWARA	1" = 30'-0"	D. FUJIWARA	S3.1 of 24	NOVEMBER 2015	RG3080-G

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S3.2



PARTIAL DEMOLITION SECTION/ELEVATION "A-A"

Legend:

 Demolition of existing bridge which includes the superstructure, railings, guardrails, sidewalk, portion of abutment stem, rocker bearings, walls, piers, and pier footings. Piles underneath pier footing to remain. End posts to be removed but not damaged. Salvaged end posts will be relocated.

"OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

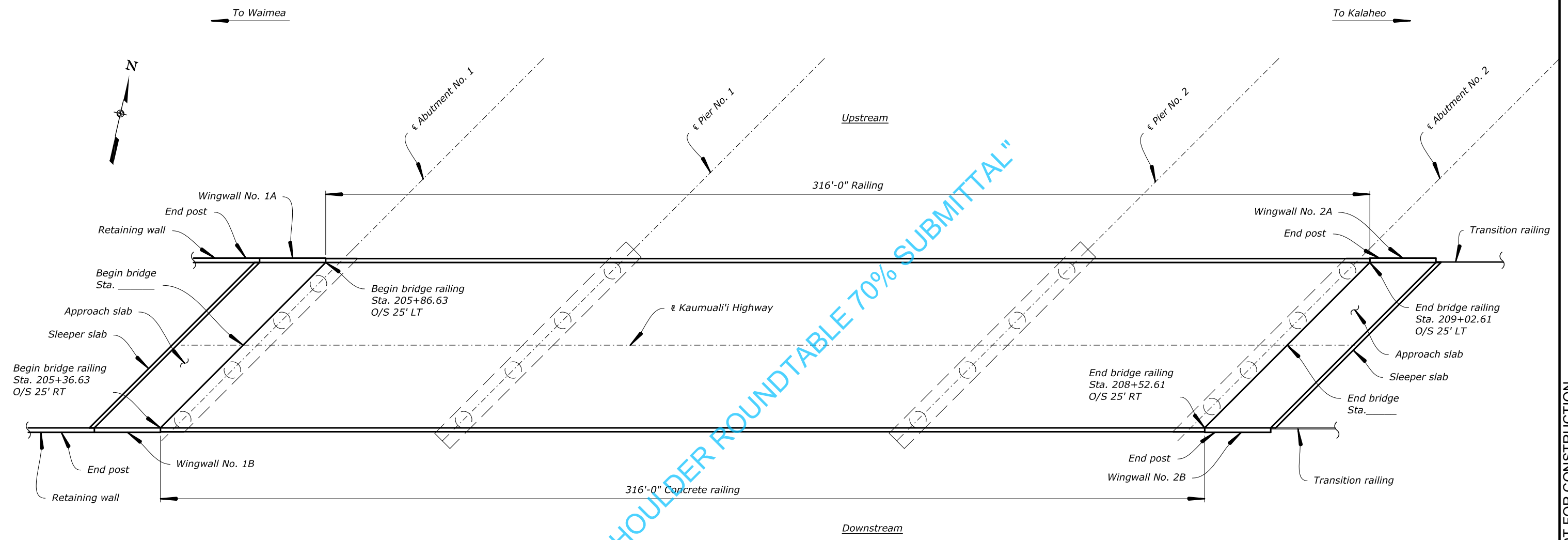
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OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.1



BRIDGE RAILING PLAN

"OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

 KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

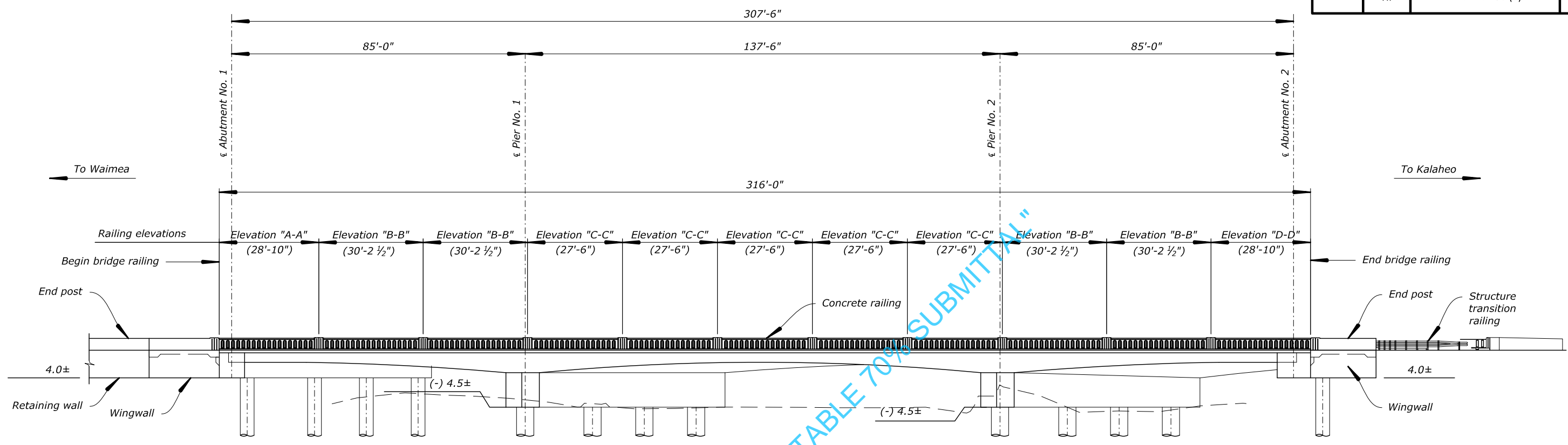
BRIDGE RAILING PLAN

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								E. MATSUMOTO	C. TANABE	D. FUJIWARA	1"=30'-0"	D. FUJIWARA	S4.1 of 24	NOVEMBER 2015	RG3080-L

OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.2



BRIDGE RAILING ELEVATION

Notes:

1. See sheet S4.3 to S4.4 for bridge railing elevations "A-A" to "D-D".
2. Elevation view is facing north. Downstream bridge railing is shown.
3. Upstream railing is opposite hand.
4. See sheet S4.1 for begin and end bridge railing stations and offsets.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

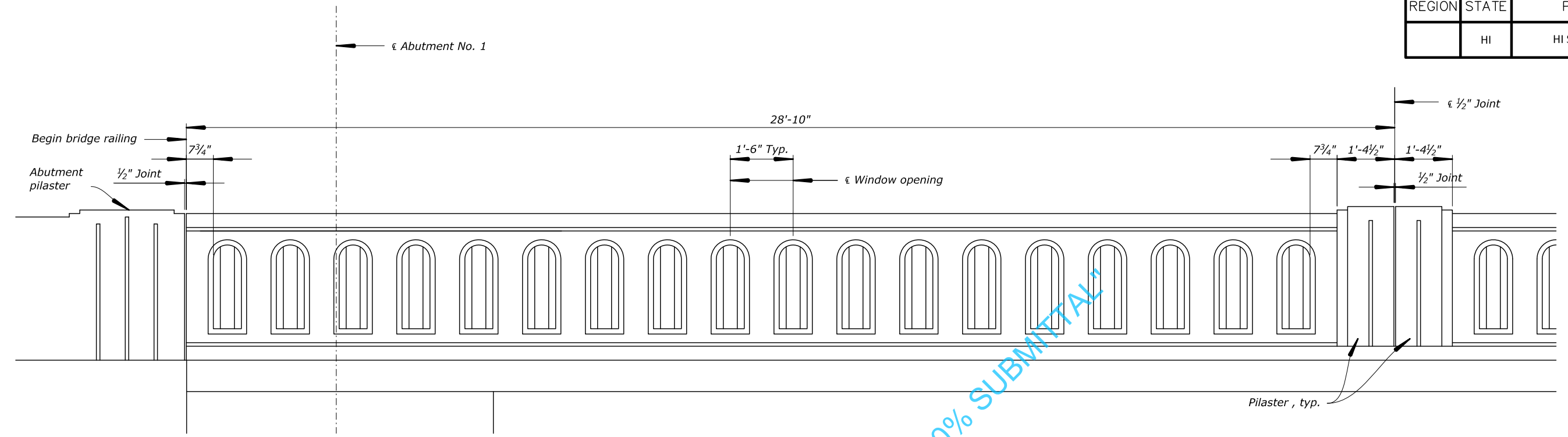
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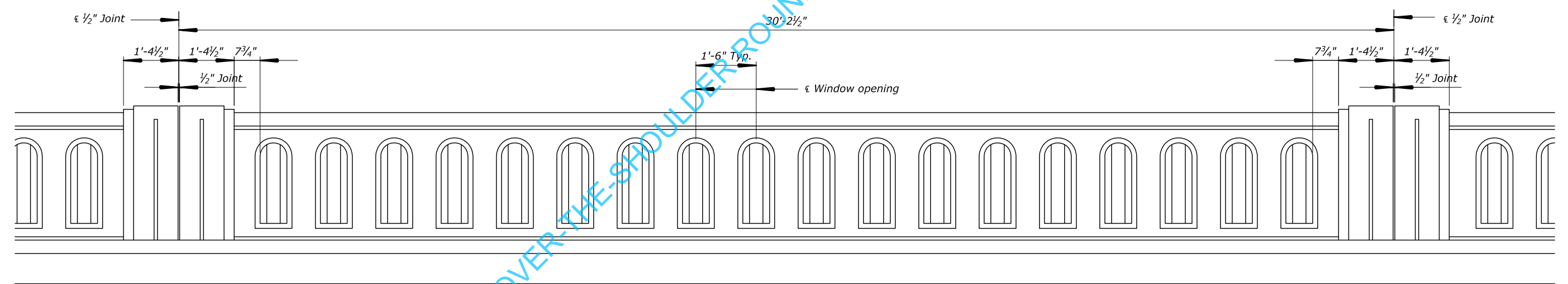
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OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.3



BRIDGE RAILING ELEVATION "A-A"



BRIDGE RAILING ELEVATION "B-B"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

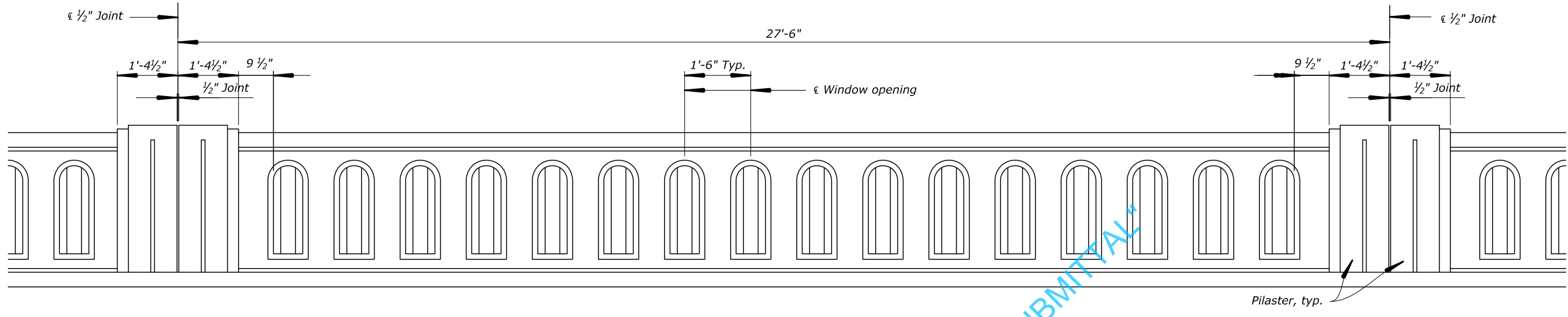
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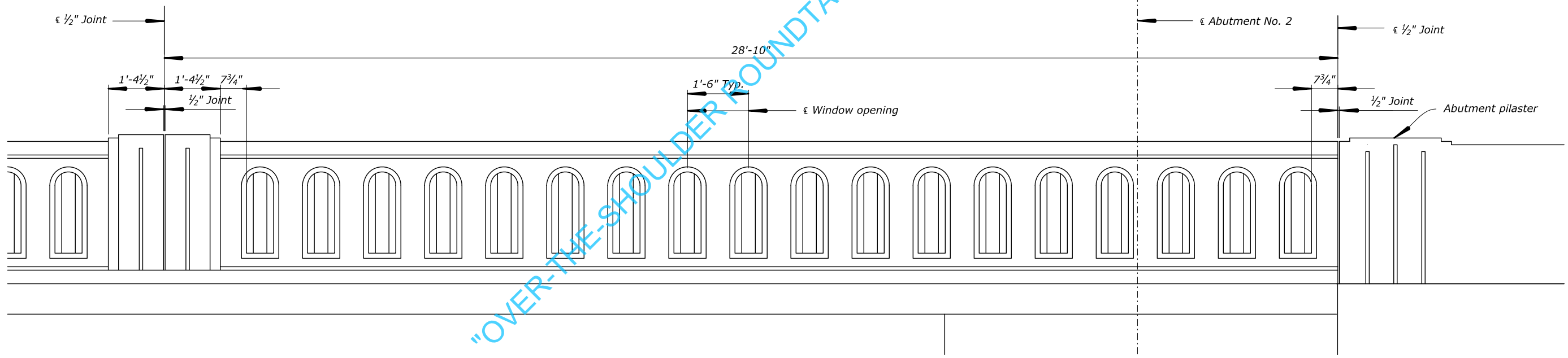
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								E. MATSUMOTO	C. TANABE	D. FUJIWARA	3/8"=1'-0"	D. FUJIWARA	S4.3 of 24	NOVEMBER 2015	RG3080-N

OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.4



BRIDGE RAILING ELEVATION "C-C"



BRIDGE RAILING ELEVATION "D-D"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

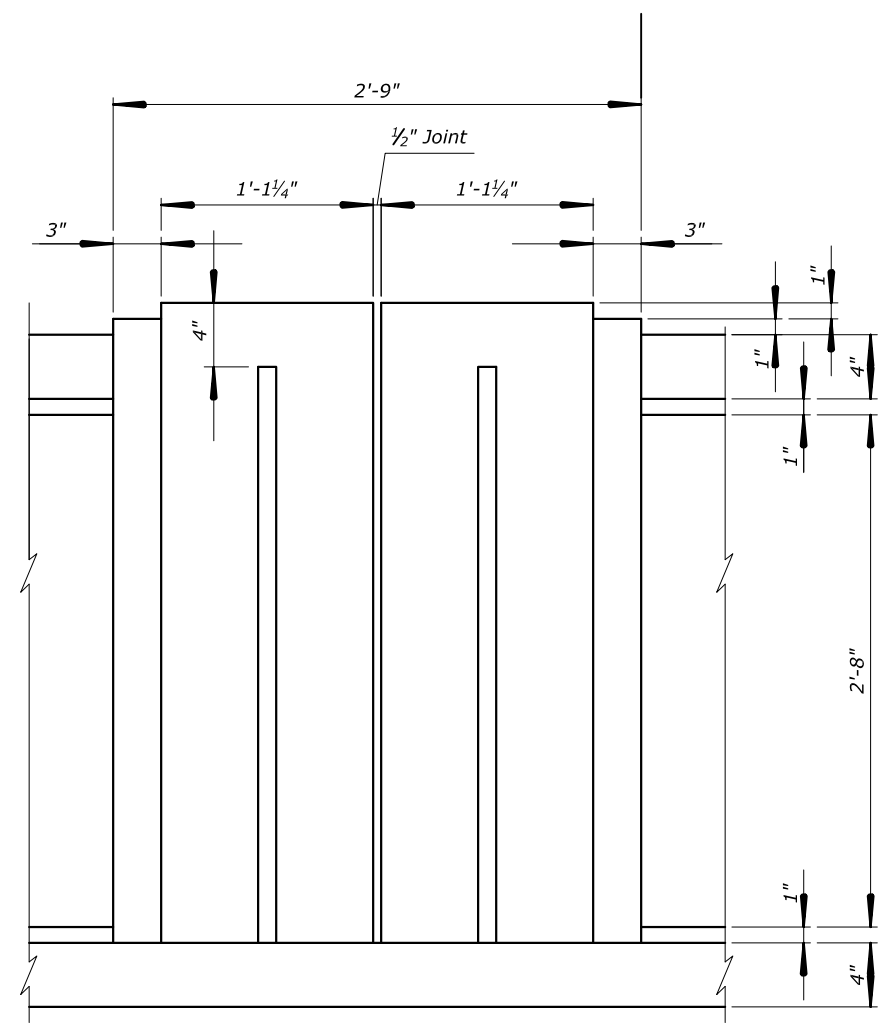
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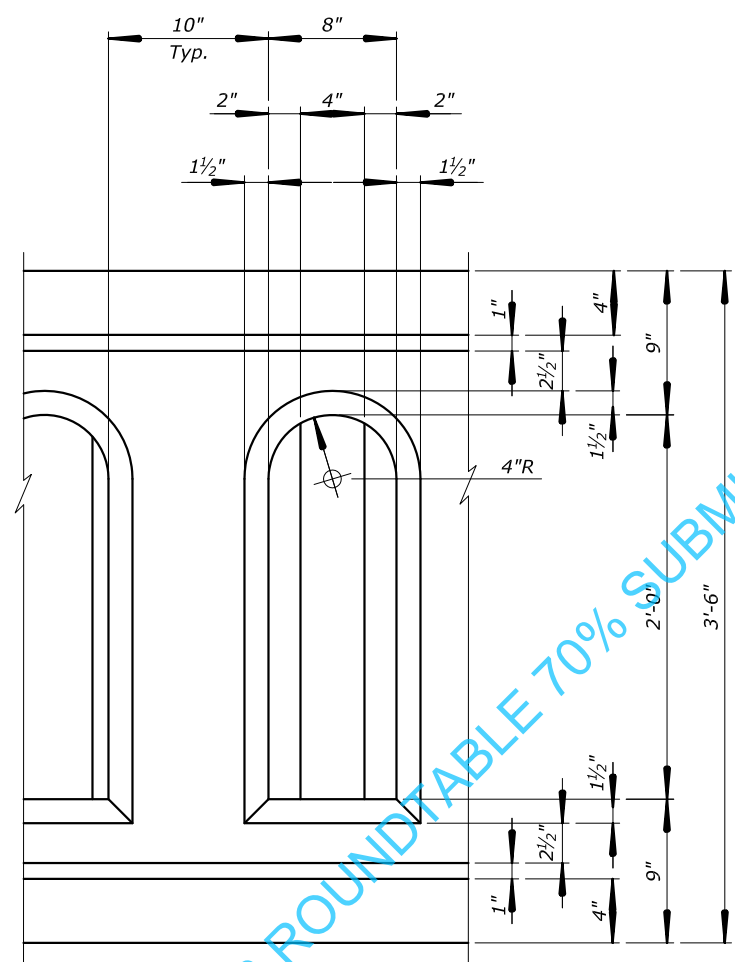
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OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

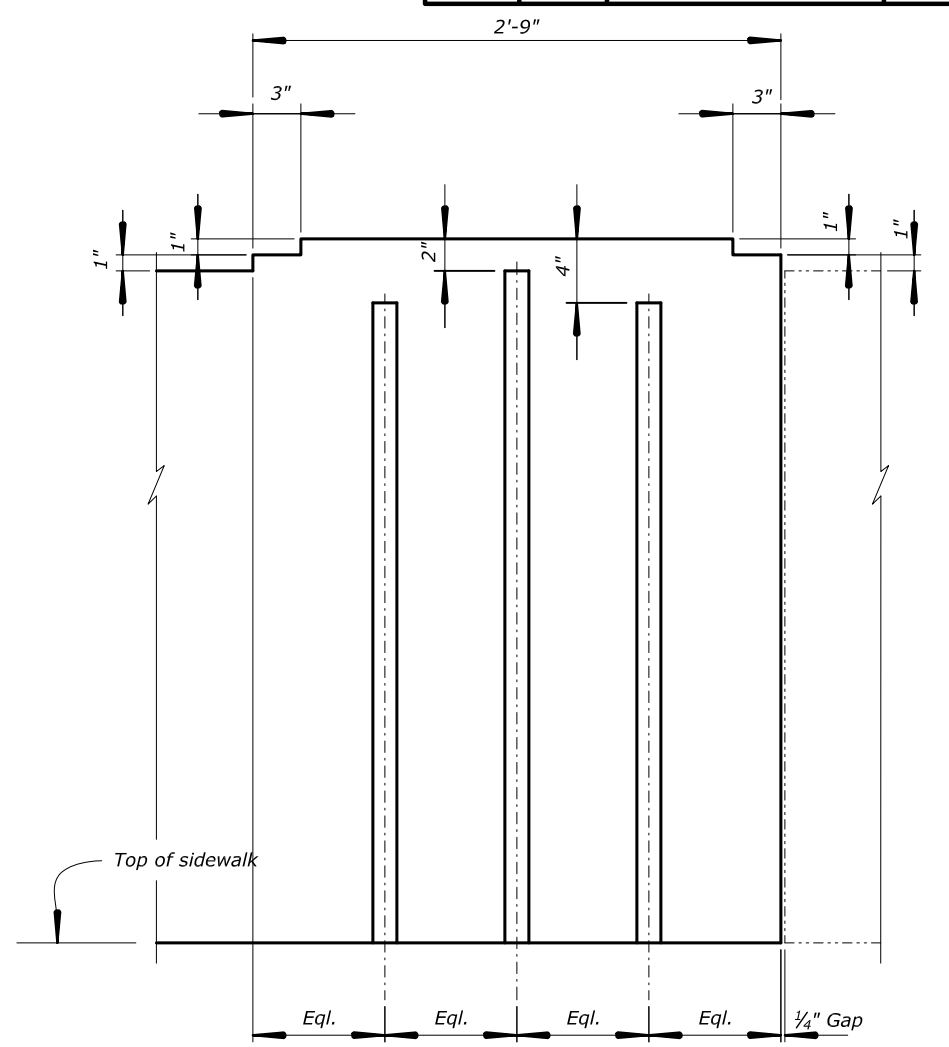
REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.5



**BRIDGE RAIL ELEVATION
AT TYPICAL PILASTER**



**BRIDGE RAIL ELEVATION
AT TYPICAL WINDOW OPENING**



**ABUTMENT PILASTER
ELEVATION**

- Notes:
- This rail was evaluated based on the results of previous crash tests and approved for a NCHRP Report 350 TL-2 rating. This rail is only approved for low speed use, speeds of 45 mph and less.
 - Rail is a modified Type C411 Texas Classic Rail. Modifications include:
 - Added horizontal reinforcing
 - Increased horizontal rebar sizes

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

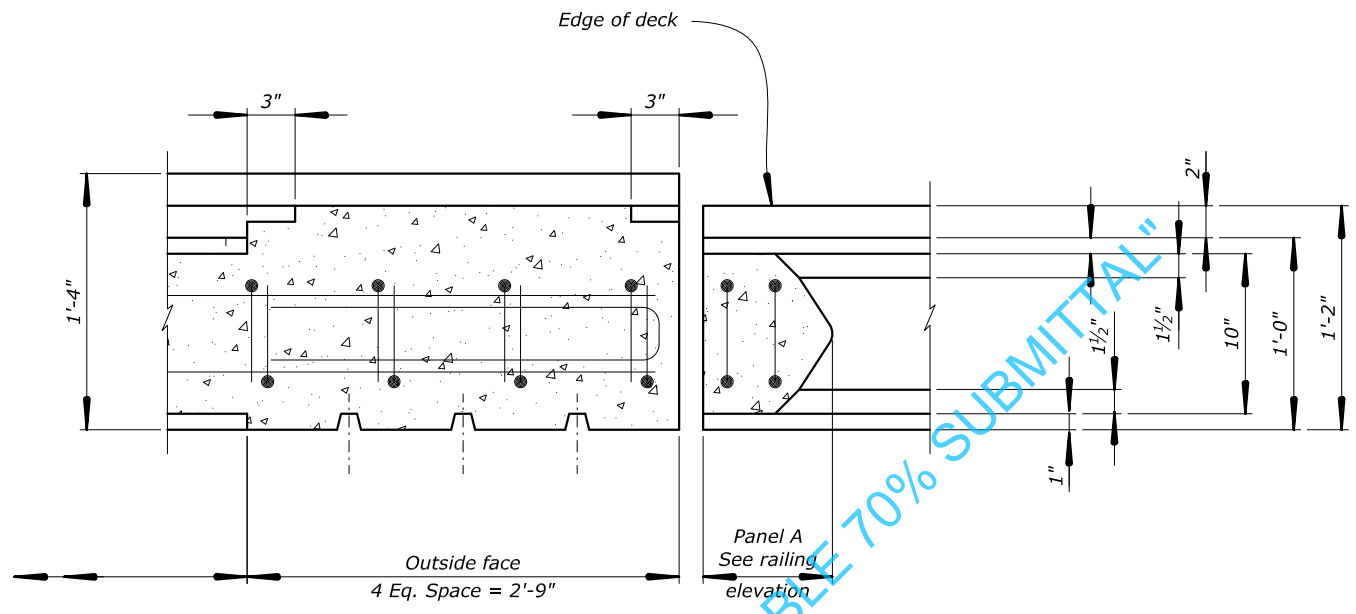
**PARTIAL BRIDGE
 RAILING ELEVATIONS**

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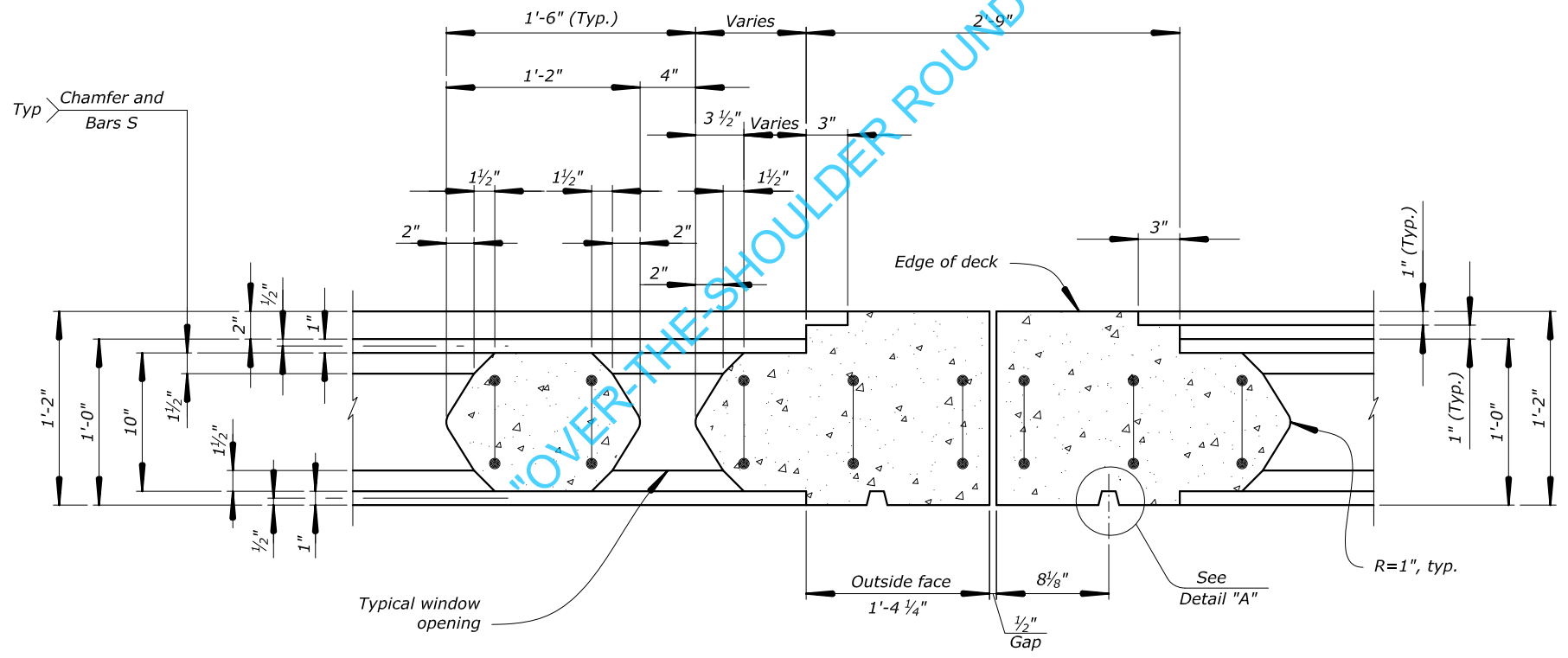
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OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

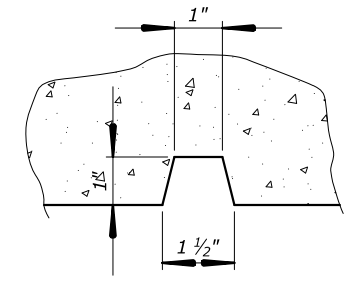
REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.6



END POST PILASTER DETAIL



TYPICAL PILASTER DETAIL



DETAIL "A"

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

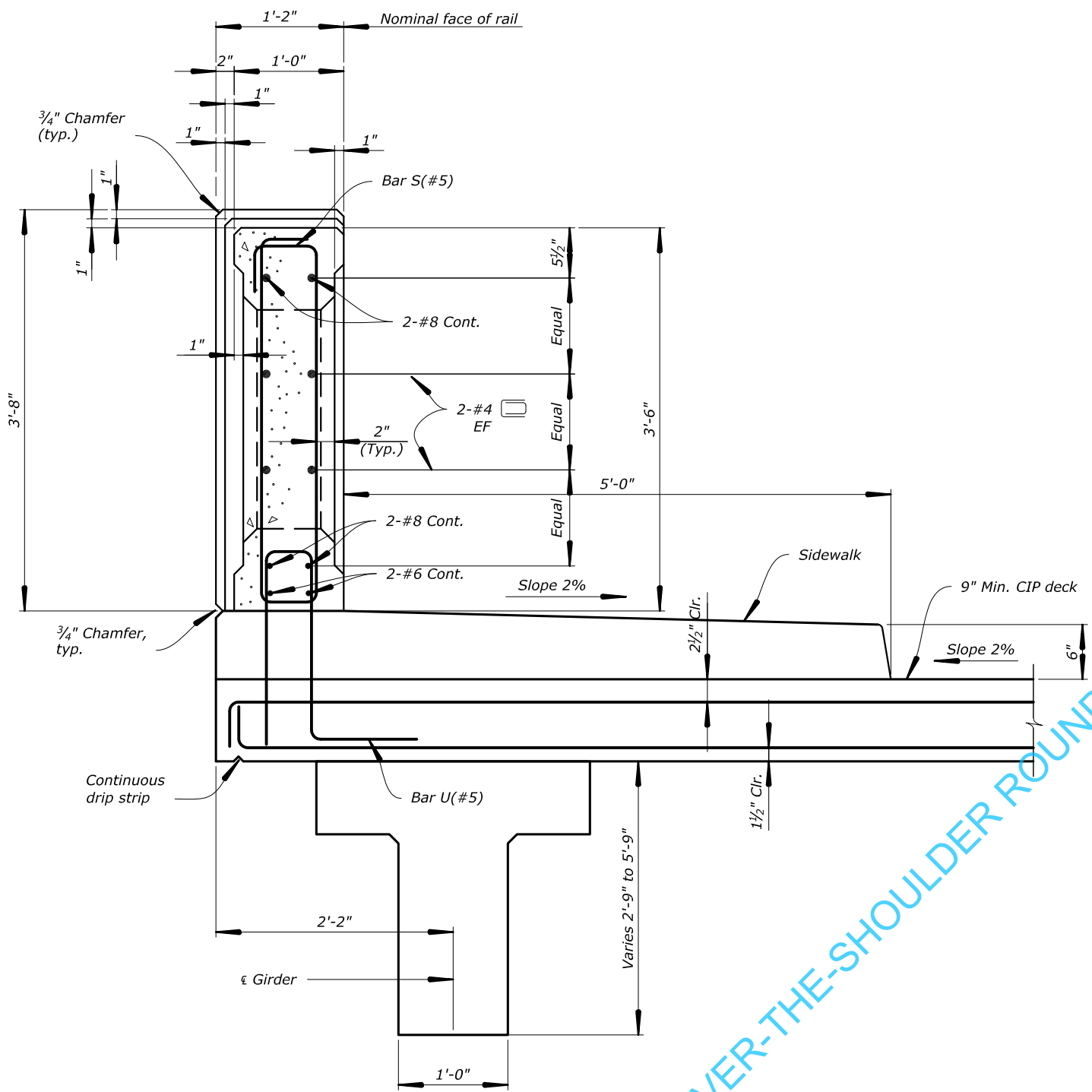
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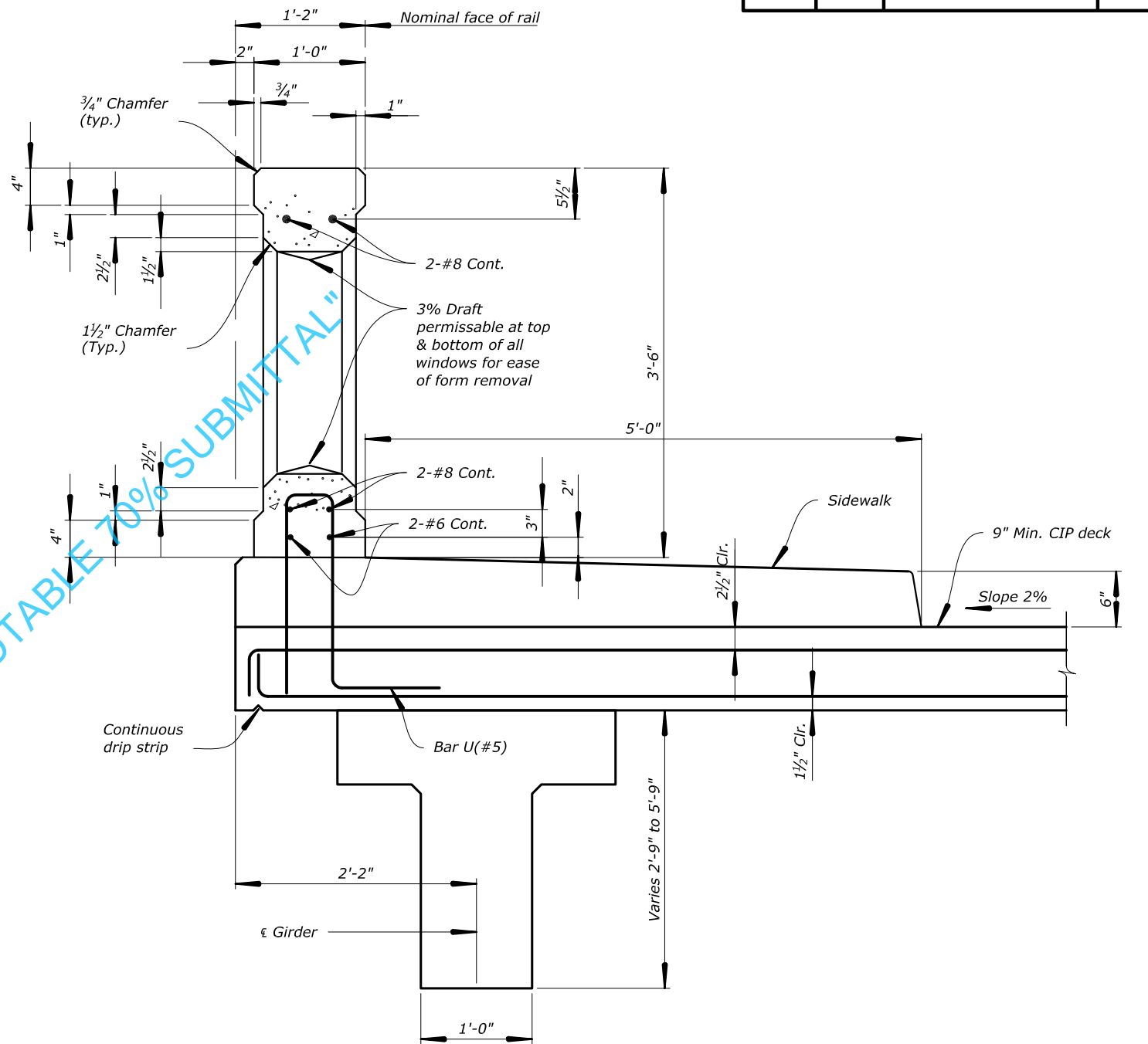
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OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

REGION	STATE	PROJECT	SHEET NO.
	HI	HI STP SR 50 (1)	S4.7



SECTION THROUGH POST ON BRIDGE DECK



SECTION THROUGH WINDOW ON BRIDGE DECK

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 CENTRAL FEDERAL LANDS HIGHWAY DIVISION

HANAPEPE RIVER BRIDGE

KAUMUALII HIGHWAY, ROUTE 50
 DISTRICT OF WAIMEA, ISLAND OF KAUAI, HAWAII

TYPICAL RAILING SECTIONS

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								E. MATSUMOTO	C. TANABE	D. FUJIWARA	3/4" = 1'-0"	D. FUJIWARA	S4.7 of 24	NOVEMBER 2015	RG3080-R

OVER-THE-SHOULDER ROUNDTABLE 70% SUBMITTAL - NOT FOR CONSTRUCTION

Appendix H
Pre-Assessment Comments and Responses

PRE-ASSESSMENT COMMENTS

Template Letter with Project Sheet (attachment)

Comment and Response Letters

- State of Hawaii Department of Health, Clean Water Branch
- State of Hawaii Department of Health, Environmental Planning Office
- State of Hawaii Department of Land and Natural Resources, Commission on Water Resource Management
- Office of Planning, Department of Business Economic Development and Tourism
- Kauai Department of Public Works



U.S. Department
of Transportation
**Federal Highway
Administration**

Template for Pre-assessment Letter--Hanapepe

Central Federal Lands Highway Division 12300 West Dakota Avenue

Suite 380

Lakewood, CO 80228

720-963-3647

michael.will@dot.gov

March 24, 2015

In Reply Refer To:
HFPM-16

Dear _____ :

**Subject: Hawaii Bridge Program for Island of Kauai
Federal Highway Administration, Central Federal Lands Highway Division
Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes and National Environmental Policy
Act**

The Federal Highway Administration, Central Federal Lands Highway Division (CFLHD), in partnership with the Hawaii Department of Transportation (HDOT), is conducting environmental studies to examine the impacts of three projects to improve three bridges on the island of Kauai. We are assisted in this effort by our consultant, CH2M HILL.

- Hanapepe River Bridge on Kaumualii Highway
Koloa and Waimea Districts, TMK: [4] 1-9-007: 001
- Bridge 7E on Kaumualii Highway
Koloa District, TMK: [4] 2-7-001
- Intersection Improvements at Kuhio Highway and Mailihuna Road and
Kapaa Stream Bridge on Kuhio Highway
Kawaihau District, TMK: [4] 4-6-014 and 4-7-003

Attached to this letter are fact sheets for each of the projects, including photos and maps. We are requesting comments and input regarding environmental concerns in all resource areas, and information that might help us to evaluate the projects.

The environmental review for this project is being conducted in accordance with the National Environmental Policy Act (NEPA) and Hawaii Revised Statutes (HRS), Chapter 343.

Please send any concerns or comments to Kathleen Chu, CH2M Hill program manager (CH2M Hill, Inc, 1132 Bishop Street, Suite 1100, Honolulu, HI 96813) or myself, within 30 days receipt of this letter. If you have questions, please contact Ms. Chu at Ph. 440-0283 or kathleen.chu@ch2m.com or myself at Ph. 720-963-3647 or Michael.will@dot.gov. Thank you.

Sincerely,



J. Michael Will, P.E.
Program Engineering Manager

Enclosure:

Fact Sheets for Hanapepe Bridge, Kapaa Stream Bridge and Intersection Improvements, and Bridge No. 7E

cc: Nicole Winterton/FHWA-CFLHD
Kathleen Chu/CH2M HILL
Paul Luersen/CH2M HILL
Elizabeth Cutler/CH2M HILL

Hanapepe River Bridge

Hanapepe, Waimea District, Kauai
TMK: [4] 1-9-007: 001

Location

The project area for the improvements includes Hanapepe River Bridge and its immediate environs. The bridge is located at milepost 16.5 on Kaumualii Highway (State Route 50) in Hanapepe town on the west side of Kauai (see Project Location Map). The bridge site is located approximately 0.4 mile upstream from the outlet to Hanapepe Bay.

Existing Conditions

Hanapepe River Bridge, built in 1938, is a concrete tee-beam bridge with two piers and three arched spans. The existing bridge measures 275 feet long and 35 feet, 10 inches wide. There are two 12-foot wide travel lanes and 5-foot-wide raised sidewalks on each side.

Kaumualii Highway is a two-lane undivided highway in the project area with a posted speed limit of 35 mph. It is classified as an Urban Minor Arterial. Average daily traffic (ADT) is currently 11,380. For long-range planning purposes, ADT in 2035 is estimated at 15,600. There is no plan to add travel lanes to increase the capacity of the bridge.

Purpose and Need

The purpose of this project is to improve Hanapepe River Bridge and its approaches, by rehabilitation or replacement, to create a river crossing that remains a safe and functional component of the regional transportation system for highway users. Based on bridge inspections and studies, a number of conditions were identified that need to be remedied, including: overall structural deficiencies, chipping and spalling in the concrete substructure, deterioration of the timber piles, pier and abutment scour, settlement of underlying fill soils leading to pavement cracks, and narrow travel lanes and shoulders.

Project Description

Bridge design alternatives are being developed in conjunction with ongoing environmental studies. However, design options will include the following components:

- Restore structural integrity of the river crossing via bridge rehabilitation or replacement
- Meet live load and seismic requirements
- Provide for adequate hydrological flow under flood conditions
- Mitigate scour at bridge foundations
- Widen bridge to include shoulders in addition to the travel lanes and sidewalks
- Rehabilitate roadway approaches



Photo 1: Mauka side of Hanapepe River Bridge, looking west

- Upgrade bridge railings in compliance with crash test requirements
- Replace/relocate existing utilities
- Develop a traffic management plan with appropriate construction-period detours

This project is included in the Statewide Transportation Improvement Program (STIP) and will be funded, in part, with federal monies.

Project Location Map

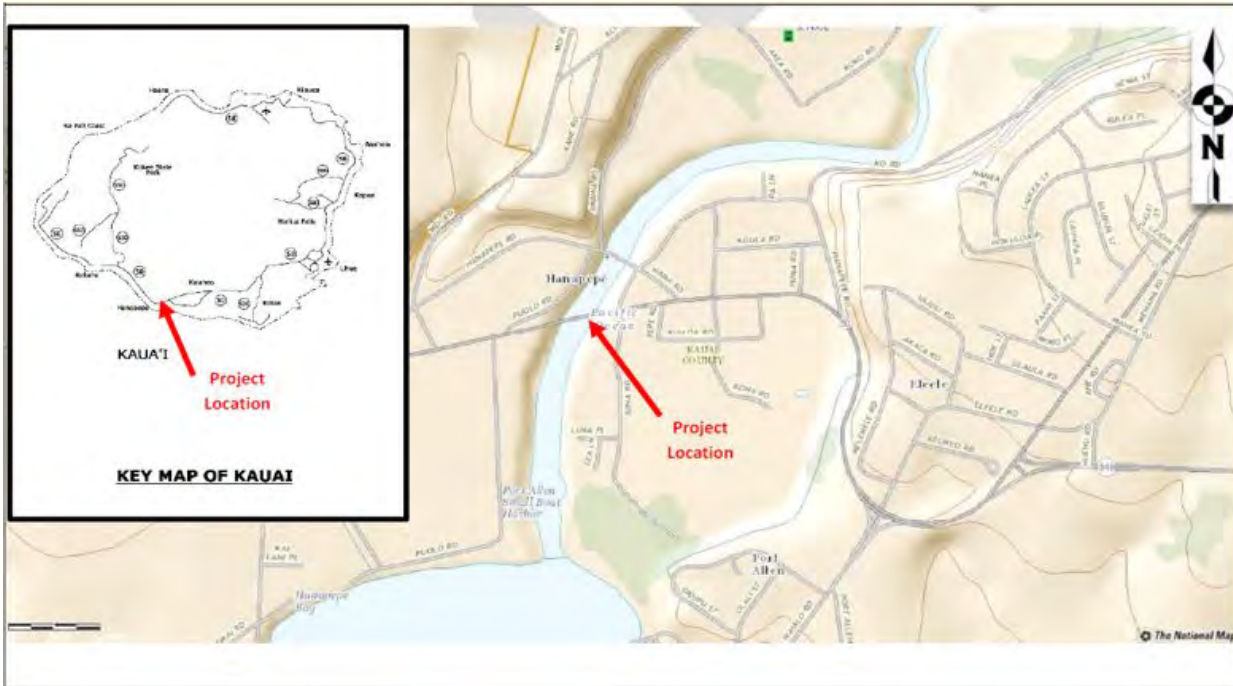
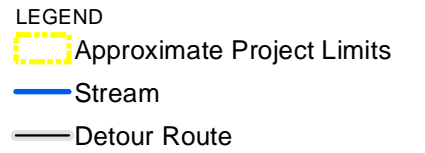
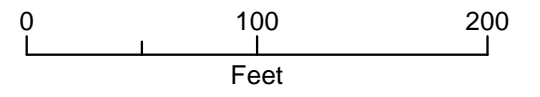


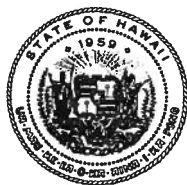
Photo 2: View of Hanapepe Bridge looking west



Notes:
 1. Imagery Source: ESRI World Imagery



Hanapepe Bridge Project
General Project Limits
 Central Federal Lands - Waimea, Kauai



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

In reply, please refer to:
EMD/CWB

05028PNN.15

May 18, 2015

Mr. J. Michael Will, P.E.
Program Engineering Manager
Central Federal Lands Highway Division
U.S. Department of Transportation
12300 West Dakota Avenue, Suite 380
Lakewood, Colorado 80228

Dear Mr. Will:

**SUBJECT: Comments on the Pre-Assessment Consultation for the
Hawaii Bridge Program
State of Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated March 24, 2015, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at:
<http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

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

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
 - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like

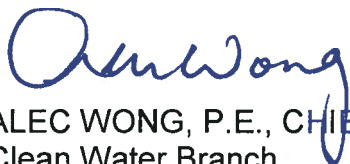
community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at:

<http://health.hawaii.gov/cwb>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



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

NN:ay

- c: Ms. Kathleen Chu, CH2M Hill [via e-mail kathleen.chu@ch2m.com only]
DOH-EPO #15-094 [via e-mail only]
Mr. Gary Ueunten, CWB, Kauai District Health Office [via e-mail only]
Mr. Neil Mukai, CWB, Hawaii District Health Office [via e-mail only]



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: ALEC WONG, P.E.
CHIEF, CLEAN WATER BRANCH
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HI 96801

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Mr. Wong:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 18, 2015.

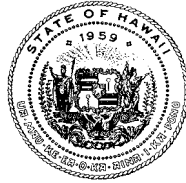
The project team is aware that certain projects may require certification or permits under the Clean Water Act. We have been engaged in early consultation with your staff and greatly appreciate their assistance.

We appreciate your participation in the environmental review process. A copy of the Draft Environmental Assessment will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL



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

In reply, please refer to:

File:

HFFPM-16

EPO 15-094

May 12, 2015

Mr. J. Michael Will, P.E.
Program Engineering Manager
Central Federal Lands Highway Division
U.S. Department of Transportation
12300 West Dakota Avenue, Suite 380
Lakewood, Colorado 80228
Via email: Michael.will@dot.gov

Dear Mr. Will:

SUBJECT: Pre- Assessment Consultation (PC) for Hawaii Bridge Program for State of Hawaii

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PC to our office on March 24, 2015. Thank you for allowing us to review and comment on the proposed project. The PC was routed to the Clean Water Branch, and the District Health Offices on Kauai and Hawaii. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: <http://health.hawaii.gov/epo/home/landuse-planning-review-program>. Projects are required to adhere to all applicable standard comments.

We encourage you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: <https://eha-cloud.doh.hawaii.gov>

You may also wish to review the revised Water Quality Standards Maps that have been updated for all islands. The Water Quality Standards Maps can be found at: <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/water-quality-standards>

The University of Hawaii has examined potential sea level rise changes in Hawaii. You may find it useful to review their studies at: <http://www.soest.hawaii.edu/coasts/sealevel>

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

A handwritten signature in blue ink, appearing to read "Laura Phillips".

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

c: Kathleen Chu, CH2M Hill program manager – kahtleen.chu@ch2m.com {via email only}
CWB, DHO Kauai, DHO Hawaii {via email only}



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: LAURA LEIALOHA PHILLIPS McINTYRE, AICP
PROGRAM MANAGER, ENVIRONMENTAL PLANNING OFFICE
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HI 96801

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Ms. McIntyre:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 12, 2015.

We acknowledge the information provided on the Hawaii Environmental Health Portal, Water Quality Standard Maps, and University of Hawaii studies related to sea level rise.

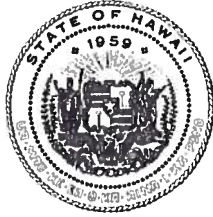
We appreciate your participation in the environmental review process. A copy of the Draft Environmental Assessment will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

CARTY S. CHANG
ACTING CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

FIRST DEPUTY

WILLIAM M. TAM
INTERIM DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 15, 2015

U. S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
Attn: J. Michael Will, Program Engineering Manager
12300 West Dakota Avenue, Suite 330
Lakewood, CO 80228

via email: michael.will@dot.gov

Dear Mr. Will,

SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information, HFPM-16

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments sent to you dated December 18, 2014, and January 9, 2015, enclosed are additional comments from the Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



RECEIVED
LAND DIVISION

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

2015 JAN 14 PM 1:19



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

December 2, 2014

MEMORANDUM

TO: **DLNR Agency:**

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands

- Land Division - Oahu District
- Land Division - Kauai District
- Land Division - Maui District
- Land Division - Hawaii District
- Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information

LOCATION: Various (see cover letter) including all Districts except Maui

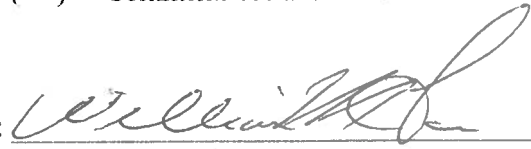
APPLICANT: Federal Highway Administration, Central Federal Lands Highway Division, in cooperation with the Hawaii Department of Transportation

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by December 18, 2014. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: 

Print Name: WILLIAM M. TAM, Deputy Director

Date: January 7, 2015

FILE ID:	RFD 4095.0
DOC ID:	11897




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

January 7, 2015

REF: RFD.4095.0

TO: Russell Tsuji, Administrator
Land Division

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

SUBJECT: Notification of Intent to Construct Hawaii Bridge Program, Request for Information

FILE NO.: HFPM-16
TMK NO.: Various including all Districts except Maui

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

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.
- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>

- 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf
- 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrn/info_permits.htm.

- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. A Well Construction Permit(s) is (are) required before any well construction work begins.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:

If there are any questions, please contact Dean Uyeno at 587-0234.



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: ROY HARDY
DEPUTY DIRECTOR
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HI 96809

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Mr. Hardy:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated January 7, 2015.

We acknowledge that projects may require a Stream Channel Alteration Permit, and will initiate the application process as needed.

We appreciate your participation in the environmental review process. A copy of the Draft Environmental Assessment will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL



OFFICE OF PLANNING STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
ACTING DIRECTOR
OFFICE OF PLANNING

Ref. No. P-14732

May 1, 2015

RECEIVED

MAY 4 2015

Ms. Kathleen Chu
Program Manager
CH2M Hill, Inc.
1132 Bishop Street, Suite 1100
Honolulu, Hawaii 96813

Dear Ms. Chu:

Subject: Hawaii Bridge Program for the State of Hawaii
Federal Highway Administration, Central Federal Lands Highway Division,
Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes and National Environmental Policy
Act; TMK: Various

Thank you for the opportunity to provide comments on the pre-consultation request for a Draft Environmental Assessment (Draft EA) being developed for the Hawaii Bridge Program. The pre-consultation review material was transmitted to our office by letter dated March 24, 2015.

It is our understanding that the Federal Highway Administration, Central Federal Lands Highway Division, in partnership with the Hawaii Department of Transportation, is conducting this environmental study for nine bridges on the islands of Kauai, Oahu, and Hawaii. The purpose of this bridge improvement project is the rehabilitation or replacement of identified bridges to create a safer and more functional stream, river, and canal crossing network for roadway users. The bridge improvements will focus on getting these bridges up to current design standards, increase load capacity, allow for safer pedestrian traffic, and improve on railings, transitions, and bridge approaches.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. Some of the bridge sites listed in the Draft EA review material contain incorrect Tax Map Key (TMK) numbers. TMK's generally have a nine digit number and are listed by island designation, plat, and parcel locations. The island of Oahu is classified by the number (1), Maui County by (2), Hawaii County by (3), and Kauai County by (4). The review material, for example, lists the Hanapepe River Bridge with the correct TMK: (4) 1-9-007:001. The bridges on the island of Oahu have an insufficient

amount of TMK numerals. The East Hawaii County locations list the wrong island designation (it should be listed with island designation of (3), rather than the island designation of (4)). The Draft EA should correct these errors and provide TMK locations with a nine digit format.

2. OP provides technical assistance to state and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Plan provides goals, objectives, priorities, and priority guidelines for growth, development, and the allocation of resources throughout the State. The Hawaii State Plan includes diverse policies and objectives of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, climate change adaptation, and sustainability.

The Draft EA should include an analysis that addresses whether the proposed project conforms or is in conflict with the objectives, policies, and priority guidelines listed in the Hawaii State Plan.

3. The coastal zone management area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" see HRS § 205A-1 (definition of "coastal zone management area").

HRS Chapter 205A requires all State and county agencies to enforce the coastal zone management (CZM) objectives and policies. The Draft EA should include an assessment as to how the proposed project conforms to the CZM objectives and its supporting policies set forth in HRS § 205A-2. The assessment addressing compliance with HRS Chapter 205A is an important component for satisfying the requirements of HRS Chapter 343. These objectives and policies include: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

4. Because of the proximity to the shoreline, some of the bridge sites may lie within areas designated as Special Management Areas (SMA). Please confirm with the City and County of Honolulu's Department of Planning and Permitting, the County of Kauai Planning Department, and the County of Hawaii Planning Department on the location of these bridges in relation with the SMA boundaries and whether SMA permits are required.

Ms. Kathleen Chu

May 1, 2015

Page 3

5. The national Coastal Zone Management Act requires direct federal activities and development projects to be consistent with approved state coastal programs to the maximum extent practicable. OP is the lead state agency to conduct this Federal Consistency evaluation.

Because at least one of the proposing agencies for this Draft EA is a federal agency, and federal funding will be used to finance this endeavor, this project may require compliance with Federal Consistency requirements. The Draft EA should list all applicable permits needed for this project. Any federal permits required for this project may have implications on the federal consistency evaluation conducted by OP.

6. Our review indicates that these bridge improvement projects lie within proximity to perennial streams, canals, wetlands, and are within numerous watersheds. The project areas are adjacent to a range of human activities from agriculture, urban development, and activity along coastlines or upstream from the coastline. The Draft EA should consider inclusion of a section addressing watershed protection and management.

OP has created the Hawaii Watershed Guidance to provide direction on methods to safeguard Hawaii's watersheds and implement watershed plans. This guidance provides a number of management measures that address polluted runoff. OP's watershed guidance provides a number of management measures that address polluted runoff from urban activities, and a summary and links to management measures that may be implemented to minimize coastal nonpoint pollution impact. Specifically please examine, Section B – Roads, Highways, and Bridges pages 132-135. The document can be viewed or downloaded from the Office of Planning website at [http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI Watershed Guidance Final.pdf](http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI_Watershed_Guidance_Final.pdf).

7. We have reviewed the location maps of the bridge improvement projects and compared them to known coastal resources in the area. Many of these parcels are located in flood hazard zones, tsunami evacuation areas, and as noted above, land zoned for agriculture or urban uses, or are located near perennial streams, canals, wetlands, seasonal river gulches, or pass close to coastal areas and beaches. Therefore, inclusion of a stormwater impact evaluation would be beneficial to the Draft EA. Development and land use activities can create erosion, increased stormwater runoff, and coastal pollution that cause direct, secondary, and cumulative impacts to Hawaii's resources.

Ms. Kathleen Chu
May 1, 2015
Page 4

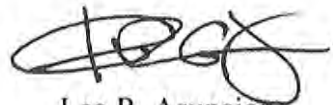
Please consider OP's Stormwater Impact Assessment in your stormwater impact evaluation for this project. This document can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff occurrences. Mitigation measures and best management practices (BMP) listed in this document can be applied to water runoff strategies to prevent damage to coastal ecosystems. This document will assist in integrating stormwater impact assessment within the planning and environmental review process of a project. The document can be found at http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_impact/final_stormwater_impact_assessments_guidance.pdf.

8. Construction of widened roadways, new bridge approaches, increased support structures for bridge spans, and pedestrian crossing will introduce hardened impervious surfaces, secondary development, and may require additional drainage infrastructure to be built. Please consider Low-Impact Development (LID) design practices in the planning process for this project. LID techniques promote a range of structural BMP's for stormwater control management, roadway development, and urban layout that minimizes negative environmental impact.

LID design concepts and BMP's that should be considered include: the preservation of natural features and conservation design; the reduction of impervious cover; and utilizing natural features and source control for stormwater management. These methods are listed in OP's Low Impact Development, A Practitioners Guide. For more information on LID – BMP's, please examine Section 1.7, pgs. 1-4 to 1-11. This guidance can be viewed or downloaded from the OP website at: http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

If you have any questions regarding this comment letter, please contact Josh Hekekoa of our office at 587-2845.

Sincerely,



Leo R. Asuncion
Acting Director

c: J. Michael Will, P.E., Program Engineering Manager



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING
235 SOUTH BERETANIA STREET, 6TH FLOOR
HONOLULU, HI 96813

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Mr. Asuncion:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 1, 2015. We offer the following responses in the order presented in your letter:

1. Tax Map Key numbers will be verified.
2. The Draft Environmental Assessment (DEA) will discuss consistency with the Hawaii State Plan.
3. The DEA will discuss consistency with Coastal Zone Management objectives.
4. Where relevant, the Special Management Area permit will be listed as a potential requirement.
5. Federal Consistency Review will be listed as a potential requirement.
6. The DEA will assess potential impacts on water resources.
7. We acknowledge the availability of the Office of Planning's Stormwater Impact Assessment as an environmental planning resource.
8. Stormwater management measures are being considered in project design and will be addressed in the DEA.

We appreciate your participation in the environmental review process. A copy of the DEA will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL

Bernard P. Carvalho, Jr.
Mayor



Larry Dill, P.E.
County Engineer

Nadine K. Nakamura
Managing Director

Lyle Tabata
Deputy County Engineer

DEPARTMENT OF PUBLIC WORKS

County of Kaua'i, State of Hawai'i

4444 Rice Street, Suite 275, Līhu'e, Hawai'i 96766
TEL (808) 241-4992 FAX (808) 241-6604

May 6, 2015

Kathleen Chu
CH2M Hill, Inc.
1132 Bishop Street, Suite 100
Honolulu, Hawai'i 96813

Subject Hawai'i Bridge Program for Island of Kaua'i
Federal highway Administration, Central Federal Lands Highway Division
Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes and National Environmental Policy Act

PW 04.15.050

Dear Ms. Chu:

Thank you for the opportunity to review the fact sheets and to provide input on three projects to improve three bridges on the island of Kaua'i. We have the following comments on the projects:

**Hanapēpē River Bridge on Kaumualii Highway
Kōloa and Waimea Districts, TMK (4) 1-9-007: 001**

1. The Hanapēpē River Bridge lies within Zone AEF of Flood Insurance Rate Map (FIRM) Panel 287F. Zone AEF is the floodway area of Zone AE. Where development is proposed in a floodway, a registered engineer will need to certify that the work will not cause an increase in the base flood elevation during the occurrence of the base flood discharge.
2. Included in the Project Description for Hanapēpē River Bridge is "Develop a traffic management plan with appropriate construction-period detours". The short term impacts of construction on traffic in the Hanapēpē area should be fully discussed and evaluated in the Environmental Assessment.

**Bridge 7E on Kaumualii Highway
Kōloa District, TMK (4) 2-7-001**

1. The fact sheet states that Bridge 7E was built in 1933, but later it states that "HDOT's 2013 Historic Bridge Inventory identified that Bridge 7E is a common post-war bridge constructed after 1945." The environmental document should clarify this discrepancy.

Intersection Improvements at Kuhio Highway and Ma'ilihuna Road and Kapaa Stream Bridge on Kuhio Highway
Kawaihau District, TMK: (4) 4-6-014 and 4-7-003

1. The Kapaa Stream Bridge lies within Zone AEF on Flood Insurance Rate Map (FIRM) Panel 210F. Zone AEF is the floodway area of Zone AE. Where development is proposed in a floodway, a registered engineer will need to certify that the work will not cause an increase in the base flood elevation during the occurrence of the base flood discharge.
2. Included in the Project Description for Kapaa Stream Bridge is "Develop a traffic management plan with appropriate construction-period detours". The short term impacts of construction on traffic in the area of the Ma'ilihuna Road Intersection should be fully discussed and evaluated in the Environmental Assessment.
3. A roundabout should be evaluated as one of the alternatives for improving the Ma'ilihuna Road intersection in the Environmental Assessment. We believe that a roundabout could have many benefits over both signalized and stop-controlled alternatives; including:
 - Better overall safety, especially given the curvilinear alignment of Kuhio Hwy.;
 - Improved safety and convenience of crossing for pedestrians and bicyclists to and from Ke Ala Hele Makalae (shared use path); and
 - Possible reduced bridge width due to there being no need to provide left turn and right turn storage lanes and associated tapers.
4. Due to the presence of Ke Ala Hele Makalae (shared use path), there is no need for sidewalks on this bridge. Therefore, the existing deck width may be sufficient to provide adequate travel lanes and shoulders, if it is structurally feasible to remove the sidewalks and replace them with shoulders. We recognize that the structure may be nearing the end of its service life, but it might be useful to evaluate an option that retains the existing structure and converts the sidewalks to paved shoulders.

Thank you for the opportunity to review and comment on the Fact Sheets for these three projects. We wish to remain on your mailing list to continue participating in the environmental review process. If you have any questions or need additional information, please feel free to contact Stanford Iwamoto, Engineering Division at (808) 241-4896.

Sincerely,



MICHAEL MOULE, P.E.
Chief, Engineering Division

SI/MM

Copy to: J. Michael Will, FHWA, Central Federal Lands Highway Division
Design and Permitting
County Engineer



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
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Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: MICHAEL MOULE, P.E.
CHIEF, ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET, SUITE 275
LIHUE, HI 96766

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM, KAUAI PROJECTS
HANAPEPE RIVER BRIDGE
BRIDGE 7E
KAPAA STREAM BRIDGE

Dear Mr. Moule:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 6, 2015. We offer the following responses in the order presented in your letter:

Hanapepe

1. Hydraulic analysis is being conducted for Hanapepe River Bridge. Project engineers will coordinate with the County to ensure that the project complies with requirements of the floodplain management program.
2. The Draft Environmental Assessment (DEA) will discuss construction-related traffic impacts.

Bridge 7E

1. Bridge 7E was constructed in 1933.

Kapaa

1. Hydraulic analysis is being conducted for Kapaa Stream Bridge. Project engineers will coordinate with the County to ensure that the project complies with requirements of the floodplain management program.
2. The DEA will discuss construction-related traffic impacts.

3. The roundabout option is being evaluated. Alternatives are being assessed from multiple perspectives, including safety, performance, environmental impacts, constructability, operations and maintenance, and cost.

4. We acknowledge your comment about using the shared use path for pedestrian travel. In evaluating rehabilitation of the existing structure, we note that the bridge is nearing the end of its service life. It is functionally obsolete, has substandard load carrying capacity, does not meet current seismic requirements, and is identified as scour critical. Therefore, we are leaning toward replacing the bridge as rehabilitation would necessitate modifying bridge substructure, superstructure, and railings to meet current AASHTO design standards.

We appreciate your participation in the environmental review process. A copy of the DEA will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:

Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL

Appendix I
Project Information Meeting Summary,
September 16, 2015

Hanapepe River Bridge Public Meeting Summary



ATTENDEES: HDOT: Mike Hinazumi, Ray McCormick, Donald Smith
FHWA-CFLHD: Mike Will, Nicole Winterton
CH2M: Kathleen Chu, Nancy Nishikawa, Kim Nokes
Kuiwalu: Dawn Chang

COPY TO: Ed Hammontree, Bill Lang

PREPARED BY: Nancy Nishikawa

MEETING DATE: September 16, 2015

PROJECT: Hawaii Bridge Program: Hanapepe

Meeting Objectives

- I. Provide an overview of the project:
 - The purpose and need for improving the bridge
 - The proposed design elements and construction schedule
 - How we plan to manage traffic during construction

- II. Obtain community feedback

Meeting Summary

Ray McCormick opened the meeting by thanking the public for attending and emphasizing the importance of public feedback.

Kathleen Chu gave a short presentation of the Hanapepe River Bridge Project. The meeting then proceeded to comments and questions.

Comments/Questions

The public information meeting was attended by 30-35 people. Their primary concerns related to structural deficiencies resulting in load limits; bridge design that allows passage of floating debris, anticipates rising sea levels, accommodates recreational uses, and is aesthetically pleasing; relative differences in cost and longevity between alternatives; design and load capacity of the temporary bridge; pedestrian accommodations, including ADA compliance, lighting, and temporary detour via the County bridge; and possibility of proceeding with a temporary bridge if full funding is not immediately available.

Attendees raised the following questions and comments:

1. Would the replacement bridge impede the passage of floating debris?
2. Consider sea level change in planning and design.
3. What is the lifespan of the rehabilitation versus replacement option?

4. If the rehabilitation option is selected, how would you handle drilled shafts, as opposed to installing new piles?
5. Request to construct a beautiful bridge, as viewed from the mauka side.
6. Is there a significant difference in cost between the rehab and replacement alternatives?
7. Will there be any dredging? Not opposed to the mangrove removal.
8. How much longer will the bridge be safe, given use by heavy trucks?
9. Trucks come down the hill fast (on the east side of the bridge, heading westbound), which is evident from the sound of gears downshifting.
10. What would be the load capacity of the temporary bridge? *[According to representatives of the Kauai Fire Department, firefighting vehicles are 38 feet long, fixed axle.]*
11. Trucks crossing the bridge are pulling heavy loads—20-25 tons. When crossing, we need to take the center to equalize the load, knowing the bridge's condition. Make sure the new bridge meets federal standards; don't make it just a little better than it is currently (maximum load of 80,000 lbs). There are no ports on the west side of Hanapepe River for the Pacific Missile Range Facility so transport vehicles must use the bridge. Rubbish going to the Kekaha Landfill must also go across the bridge. It's an important lifeline and priority.
12. Trucks crossing the bridge "fly" through. We don't want to go slow because there are other vehicles on the bridge that also contribute to the load.
13. Is it possible for the temporary detour to have one lane on either side of the bridge? What do two detour lanes on the mauka side mean for the intersections on either side of the bridge?
14. What is the no build alternative, and what happens if the project is not built?
15. Question about ADA access on the replacement bridge. *[Representative Dee Morikawa explained there's a rumor that if the highway bridge is ADA compliant, the upstream County bridge will not need to be ADA compliant. Both bridges will be ADA compliant. The new highway bridge will meet ADA standards. This was also confirmed for the County bridge by Kauai Public Works Director Larry Dill.]*
16. Besides shipping container, lots of whole trees come down the river. They block the channel and raise the water level. The bridge should have the best possible clearance.
17. Consider moving ahead with the temporary bridge if there isn't funding for the permanent bridge.
18. Load restrictions on the bridge increase transport costs.
19. Support a temporary bridge which has two lanes.
20. Suggest adding other project goals:
 - New bridge should not contribute to flooding of adjacent properties or compromise the levee.
 - Allow for crabbing when the project is finished.
 - Allow for small boats to pass under the bridge.
 - Allow for changes in environmental conditions; for example, sea level rise. Be proactive and not wait for other agencies to act.
21. The cost difference in design alternatives matters.
22. In addition to sea level rise, tsunami inundation should be considered. In 1950, there was a tsunami and the impacts extended up the river.

23. What about lights for pedestrian safety? Will you put back the pedestrian lights on the bridge?

These can be small lights.

24. Pedestrians are being asked to use the County bridge during construction, but it's not safe to walk across that bridge.

25. A tree will need to be removed from the Teitge property (northwest side of the bridge).

The key points to the responses were:

- Thanking the public for sharing their input and concerns.
- The Department of Land and Natural Resources is conducting a study on sea level change in planning and designing public infrastructure. The study is in progress and the State has not yet adopted applicable policies, standards, or criteria. The project team is considering these types of impacts. DLNR will also have an opportunity to comment on the EA.
- The lifespan of a new bridge is estimated at 75 years. In comparison, rehabilitation could extend life expectancy by 40-50 years, but uncertainties about the existing foundations would affect what can be accomplished through design. Some of the unknowns would remain until the foundations are exposed during actual rehab work. Rehabilitation costs could be 2-3 times higher than replacement.
- Missing piles and decay are contributing to bridge deterioration. FHWA has a bridge inspection program and HDOT monitors Hanapepe Bridge on a more frequent schedule. In fact, inspections will be occurring during the upcoming week. The inspections allow HDOT to evaluate the condition of the bridge and take appropriate actions for operations and maintenance.
- In addition to this public meeting, the project team is consulting with KHPRC and SHPD on historic bridge issues.
- The temporary bypass road is constrained by surrounding land uses, which affect location (on the mauka, rather than the makai side) and design (how the available space is used). The temporary bridge will support normal loading. There will be a temporary connection to maintain the intersection on the east (Iona Road) and the detour will tie back to the highway before the intersection on the west (Puolo Road).
- The arched bridge design would require specialized construction methods compared to the more conventional straight girder. Therefore it is expected to cost more (by roughly 30 percent) and take longer to construct (by approximately 2 months).
- Funding the temporary bridge in advance of securing funding for the permanent bridge will be considered as the project develops.

Toward the end of the meeting, attendees were polled informally about their preferences, with the following results:

- A replacement bridge was favored unanimously over the rehabilitation alternative.
- A large majority favored the arched bridge design rather than the straight girder design.
- Attendees indicated they would like a railing that looks like the existing. There were no comments against the proposed railing (Texas balustrade).

Next Steps

- CH2M will compile a stakeholder list of who wants to remain informed.

- A copy of this public meeting summary will be posted on the CFL project site.
- The Draft Environmental Assessment is scheduled for release before the end of 2015. Members of the public will have an opportunity to review and comment on the document.

Attachments

- Powerpoint Presentation
- Pdf of the Display Boards
- Sign-in Sheet
- Comment forms

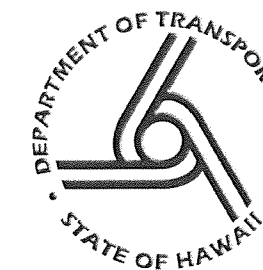


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SIGN-IN SHEET

Hanapepe River Bridge Replacement Project Public Meeting – September 16, 2015



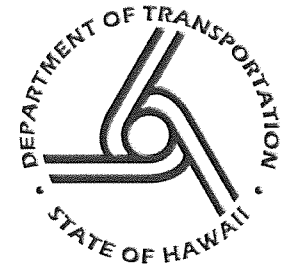
Name & Agency or Jurisdiction	Mailing Address	City / State	Zip Code	Phone	Email
Rodney Takeka					
Helen Limb	PO BOX 218	Hanapepe	96716		
Tom & Elaine Bodley	335 Hina Mahi Pl	Kapaa	96746		
Susan Remoaldo	P.O. Box 885	Eleele	96705		
Jaren Jaha	4231 Ahukini Rd	Kaunoi	96744		
Fudal Jimin	PO BOX 55 Hanapepe		96716		
M. Zawal	PO Box 249 Hanapepe HI		96716		
Gilbert Moniz	P.O. Box 491 Hanapepe	Hanapepe	96716		
Kay Hill	POB 536 Hanapepe		96716		
Jason Kagimoto	PO Box 1215 Lawai		96765		
Judy Page	PO Box 214 Hanapepe		96716		pagejd@hotmail.com
Keith Suye	PO Box 42A Hanapepe		96716		



U.S. Department
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SIGN-IN SHEET

Hanapepe River Bridge Replacement Project Public Meeting – September 16, 2015



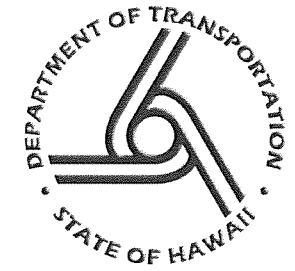
Name & Agency or Jurisdiction	Mailing Address	City / State	Zip Code	Phone	Email
Dee Monkawa / Legislature	P.O. Box 115, Waimea		96796	651-8855	
JoAnn Shaffer	PO Box 62224 HI 96766	Lihue / HI	96766	635-9893	JoAnn.Shaffer@hotmail.com
Wayne Souza	PO Box 450, Hanapepe	Hanapepe	96716	335-5242	whsouzahawaii@gmail.com
Jean Souza	same	same	same	same	piikea9@gmail.com
Hanapepe - Eleele community					Hanapepe.Eleele.Kauai@gmail.com
Propert owner	Box 241 Hanapepe HI		96716	635 5342	
Greg Uyematsu	PO Box 641 Lihue HI 96766 PO Box 893311 Mililani	HI		542-5009	
Larry Dill				241-9996	ldill@kauai.gov
MICHAEL MOULE				241-4891	MMOULE@KAUAI.GOV
Soanne Imamura	P.O. Box 493 Hanapepe	Hanapepe HI	96716	808-6470513	grams @ miracles, tw
Bill QUINLAN	PO Box 187 Eleele	KFI	96705		BillQuinlan@Kauai.gov



U.S. Department
of Transportation
**Federal Highway
Administration**

SIGN-IN SHEET

Hanapepe River Bridge Replacement Project Public Meeting – September 16, 2015



Name & Agency or Jurisdiction	Mailing Address	City / State	Zip Code	Phone	Email
Roland Arnette Lee	Hanapepe	HI		808-639-7499	arnettelee@gmail.com
JACKIE WONG/ Wong's Restaurant	P.O. Box 129 Hanapepe	HI	96716	335-5066	JWONG0517@yahoo.com
MIKE FAYE KIKI KOLA CONSTR	POB 849 Waiwae	HI	96746	639-3900	mike@kikiolaconstruction.com
Mani Anguero Lapperts Hawaii	P.O. Box 684 Hanapepe	HI	96716	335-3860	aloha@lappertshawaii.com
ERIC NORDMEIER	PO BOX 61 HANAPEPE	HI	96711	335-0197	enordmeier@aol.com
Philip Burkhardt PO Box 743	PO Box 743	Hanapepe	96716	346-9800 346-8627	Lagunatic59@gmail jojokroe@gmail
Anny Lopez	P.O. Box 190 Kaimukoi	HI	96747	645-2060	lopez@hawaii.net

Contact information

Sharing your personal information is optional; however, it will help us to keep you informed and plan for upcoming events.

Name: *Susan Remoaldo*

Address: *P.O. Box 885, Eleele, HI 96705*

Email:

Phone: *808-335-8520*

Would you like to be added to the project mailing list? Yes No

How did you hear about this public meeting?

classified notice in newspaper

Please return additional comments to: **Mail** – Kathleen Chu, CH2M HILL 1132 Bishop St., Suite 1100, Honolulu, HI 96813;
or **Email** – Kathleen.Chu@ch2m.com



U.S. Department
of Transportation
Federal Highway
Administration

Hanapepe River Bridge Replacement Project Public Meeting Comment Form



Share your comments about the project or the meeting. Your feedback is important to us.

More publicity needed other than classified notice &
① flyer @ library.

Mr. Wilks out of office after notice published & wouldn't
return until after meeting. Wanted to review materials
ahead of time in order to comment appropriately.

Need better/more examples/definitions of architectural
terms.